

The Behavioral and Social Sciences and the Practice of Medicine

The Psychiatric Foundations of Medicine

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Preface

The Psychiatric Foundations of Medicine is a modern textbook of psychiatry written specifically for medical students and physicians. In its comprehensive scope, it contains the contributions of all the disciplines that are relevant to the behavioral, psychological, social, and humanistic aspects of medicine, as well as the contributions of clinical psychiatry that constitute an integral part of the healing art and science of medicine.

The necessity for creating this textbook emerged from our recognition of the lack of a comprehensive textbook of psychiatry that is exclusively oriented toward meeting the educational needs of medical students and the continuing educational requirements of physicians. In spite of the plethora of established as well as newly introduced textbooks of psychiatry, there is no such book that meets these demands. This awareness is based on our extensive experience in the field of undergraduate psychiatric education and is shared by many of our colleagues in other medical schools of this country.

Psychiatric education in the medical schools of this country is in the midst of rapid change, which represents not only intrinsic adaptations of medical education to new developments in the field of psychiatry but also outside influences of emergent social conditions and government policies. In searching for a definition of the educational emphasis and scope in our changing psychiatric curricula, we are experiencing a compelling need for anticipating the future in a precipitously evolving field that offers few constancies as directional guidelines. In formulating educational goals, departments of psychiatry are influenced by the changing

milieu of medical education, the emerging new societal demands of health care services, and the challenge of the unmet needs in medicine. Thus, the pressing community expectations for community-oriented systems of continuous and comprehensive health care and for new roles and patterns of medical practice have necessitated drastic reorganization of medical curricula. Furthermore, with the ever-expanding boundaries of the field of psychiatry and the recent progress in the behavioral and social sciences, medical educators are becoming increasingly aware of the need for adjusting the medical curriculum to current and anticipated shifts in orientation. Contributions of the behavioral and social sciences and clinical psychiatry relevant to the practice of medicine must be appraised and communicated in the curricula.

It is the general consensus among medical educators in the United States that the overall goal of undergraduate psychiatric education is to assist students in developing an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance. More specifically, the curriculum aims to assist the student to (1) acquire a foundation of knowledge regarding the psychological, sociological, and humanistic aspects of the practice of medicine based on the study of the behavioral and social sciences and clinical psychiatry; (2) master basic interpersonal skills relevant to the management and treatment of patients with medical or emotional illness, or both; (3) emulate attitudes and values which enhance the professional roles and practices that physicians have toward their patients and their community. These goals have served as the general guidelines in determining the scope and depth of this textbook.

The basic philosophies and organizing principles for this textbook reflect the current trends in medical education and the recent developments in the field of psychiatry, with an emphasis on the emerging themes that characterize the evolving status of the practice of medicine in this country. However, the major principles for organizing its content defines a comprehensive scope of subject matter, as determined by the recommendations of the American National Board of Medical Examiners, the trends in the curricular reorganization of our medical schools, and the prevailing philosophies of American medical educators. Drawing from our experience in developing a model behavioral-social science and psychiatry undergraduate program at the University of Maryland Medical School, we have been particularly influenced by the philosophy that medical students should be able to receive a preparation in this field as thorough as that which they receive in other major medical disciplines. However, the thoroughness of this preparation does not imply the training of a minispecialist in psychiatry but the broad education of a physician in a field that permeates every aspect of medical practice. In this

regard, we have attempted to construct an educational series that allows the student to grow intellectually and professionally through critical understanding and scientific insight rather than through the acquisition of technical knowledge of facts and theories.

We have further followed an unfolding sequence of organization, which is unique for a textbook of psychiatry, and which parallels the progression of a standard medical curriculum in behavioral-social science and psychiatry. We have included numerous topics and issues, which to our knowledge have never appeared in a textbook of psychiatry, in an effort to emphasize aspects of the field relevant to the practice of the non-psychiatrist physician—aspects significant to a holistic view of man* in health and illness. In view of the great diversity and fluidity of theories in this field, we have been guided by a pluralistic approach that tends to emphasize common grounds and unifying principles without neglecting to give adequate representation to the contributions of every major discipline and school of thought. Special effort was made to choose topics that cut across disciplines or particular theories in order to present a comprehensive, integrated, multidisciplinary, and holistic view of human behavior.

The textbook has been organized into six volumes in an evolving sequence, fitting the structural development of a standard curriculum. Each volume presents a progression of concepts that will enable the student to develop the various components of competence as he progresses in medical school through an exposure to unfolding intellectual stimulations, clinical experiences, and appropriate contexts of professional socialization.

Volume 1, *Dimensions of Behavior*, provides the general background of the field and lays the foundations of the origins of behavior. The volume is divided into six parts. Parts I and II are introductory and present the historical development of psychological thinking in medicine and the evolving status of psychiatry in the contemporary scene, with an emphasis on the need for a new medical model. They further attempt to sketch a general conceptualization of human behavior that transcends the disciplinary boundaries of biological and psychosocial sciences, through an introduction into the philosophical and epistemological approaches to studying man and his behavior. By including an introduction into the general systems theory of biosystems, it is hoped that the student interested in the holistic understanding of man will recognize and appreciate the usefulness of a unifying paradigm that bridges the fragmented conceptualization of the multidimensional phenomena that pertain to the

*As a convenience of style we use the word man and the term mankind, as well as the pronoun he, to refer to human beings without distinction to gender.

life sciences. Part III deals with the longitudinal dimension of the evolutionary organization of behavior, including the phylogenetic organization of the central nervous system, the adaptation and evolution of behavior, as well as extrapolations from ethological and laboratory animal studies relevant to the understanding of human behavior. Parts IV through VI deal with the longitudinal dimension of the developmental organization of behavior. After the presentation of the biological foundations of development, including the ontogenesis of the central nervous system and the genetic determinants of behavior, part V reviews the various theories of personality development, including cognitive, motivational, psychoanalytic, and psychosocial theories. Part VI presents the developmental stages of man, from infancy to adulthood.

Volume 2, *The Behavioral and Social Sciences and the Practice of Medicine*, consists of seven parts. Parts I and II deal with the cross-sectional dimensions of the infraorganismic, organismic, and supraorganismic organization of behavior, which constitute the scope of the behavioral and social sciences. Included are the biological substrates of behavior, emotions, cognitive functions, and psychodynamic views of personality, as well as communicational, interpersonal, social, and cultural aspects of behaviors, including family and social organizations. A general systems theory approach to understanding behavior is given as a means of providing a measure of unification of these diverse disciplinary fields. Parts III through VII present the contributions of behavioral and social science to the practice of medicine. Part III deals with the various facets of the doctor-patient relationship, with special emphasis on the contractual, psychodynamic, interpersonal, and placeboogenic aspects of this interaction. Part IV focuses on patient interviewing, and includes a review of research in this area, as well as basic principles of medical and psychiatric interviewing. Part V presents issues concerning patient care within the context of social institutions, governmental policies and regulations, and other social aspects of the organization and delivery of health services, with an emphasis on meeting mental health needs. Part VI deals with aspects of the physician in relation to society, with a focus on values and ethics in medicine, professional accountability and peer review, and the emotional health of physicians and medical students. Finally, Part VII deals with general topics on the psychology of women, psychohistory, and creativity.

Volume 3, *Basic Psychopathology*, introduces the student into the area of the abnormal biology of behavior, at the level of the fundamental concepts of mental illness and deviancy, experimental psychopathology, various pathogenetic mechanisms, basic phenomenology, and organizing principles of psychiatric nosology. Specifically, after an introduction to the range of normality and pathology and conceptual models of disor-

dered behavior, Part II focuses on experimental psychopathology, including maternal deprivation and other developmental deprivation studies, drug-induced model psychoses, and animal models of addictive behavior. Parts III and IV present the pathogenesis of disordered behavior, including genetic, neurochemical, neuropathological, and psychophysiological mechanisms, as well as psychodynamic, sociocultural, and communicational determinants of the pathogenesis of the various types of psychopathology. Part V deals with the community aspects of psychopathology, including topics related to psychiatric epidemiology, preventive psychiatry, social and community psychiatry, and forensic psychiatry. Part VI discusses the phenomenology and taxonomy of psychopathology, including the phenomenology of disordered behavior, symptoms and syndromes of disordered behavior, and a discussion of nomenclature in psychiatry.

Volume 4, *Clinical Psychopathology*, deals with the various nosological categories of adult and child psychiatry. In organizing this volume on psychiatric nosology, we followed the *Standard Nomenclature of the Diagnostic and Statistical Manual-II (DSM-II)*, which currently represents the accepted system of the American Psychiatric Association. In anticipation, however, of *DSM-III*, which is presently undergoing field tests in this country, we have attempted to incorporate elements of this new nosological system into the discussion of the various psychiatric disorders.

Volume 4 is organized into six parts. Part I includes chapters on behavior disorders associated with epilepsy, acute brain syndromes, chronic brain syndromes, and mental retardation; part II, the psychotic disorders, including schizophrenic psychosis, paranoid psychoses, and affective psychoses; part III, the various psychoneurotic disorders; part IV, personality disorders and addictive disorders; part V, psychophysiological disorders, sexual dysfunctions, sexual disorders, and stress-related disturbances; and part VI, the psychiatric disorders of childhood and adolescence.

Volume 5, *Psychiatric Clinical Skills in Medical Practice*, includes the major diagnostic and treatment approaches of psychiatry and related disciplines, with an emphasis on those methods which can be mastered to some degree by nonpsychiatric physicians. Thus, students are provided with enough information to understand and appreciate the specialized diagnostic and therapeutic procedures of psychiatry and with details of these methods which are relevant to medical practitioners in enhancing their competence. Part I deals with basic diagnostic approaches, including mental status examination, differential diagnosis, psychodynamic formulation, and prognostication of psychiatric disorders. Part II is devoted to special diagnostic methods: psychological testing, assessment of family and social milieu, and laboratory diagnostic procedures. Part III

deals with the various specialized treatment methods, including pharmacotherapy, somatic therapies, psychotherapies, (individual, group, and family), behavior modification and aversive therapies, and hospital and milieu therapy. Part IV deals with selected therapeutic approaches relevant to medical practice, e.g., use of psychotropic drugs in medical practice, the drug management of childhood and adolescent psychiatric disorders, crisis intervention and supportive techniques in patient management, brief psychotherapy in medical practice, child psychotherapy, the use of hypnosis in medical practice, social work counseling in medical practice, as well as the role and utilization of psychiatric consultant, clinical psychologist, and social worker.

Volume 6, *Psychiatric Problems in Medical Practice*, encompasses selected psychiatric aspects of medical practice, with the inclusion of parts dealing with (a) diagnostic problems of special interest to the physician, e.g., the nature of pain — psychogenic pain, episodic behavior disorders, traumatic neurosis, severe psychic trauma and psychogenic death, eating disturbances, disturbances of sleep and wakefulness, and postpartum reactions; (2) clinical problems of medical practice requiring special management, e.g., management of issues of normal sexuality, management of the hospitalized patient, the dying patient and his family, the suicidal patient, the violent patient, the chronically ill patient, the geriatric patient, and the alcoholic patient and his family; and (3) clinical areas of child psychiatry of special interest to the pediatrician, family practitioner, and generalist physician, e.g., psychiatric evaluation of the child, common problems of the preschool-age and school-age child, hyperkinetic child, diagnosis and management of the battered child and his family, management of the mentally retarded child and his family, management of the handicapped child, problems and management of the hospitalized child, and child advocacy.

From the point of view of a standard medical curriculum, the first two volumes cover subject matter taught in the first year of medical school; the third and fourth volumes match the scope of the second year curriculum; and the fifth and sixth volumes are designed to meet the requirements of the clinical years of medical education that include the psychiatric clerkship and clinical electives, with an emphasis on the psychiatric aspects of medical practice.

The textbook is multi-authored, along the tradition of many other classical textbooks in medicine. This was felt to be the only approach for the writing of a textbook of the scope and authoritativeness envisioned by the editors. The majority of contributors are members of the faculty of the Institute of Psychiatry and Human Behavior of the University of Maryland Medical School. All of them are actively involved in teaching medical students and residents and are acknowledged experts in their

fields. A significant portion of the chapters has been contributed by members of the faculty of other departments and schools of the University of Maryland. Finally, for selected chapters we have sought out contributions from other authors in various educational institutions of this country.

We believe that this work will prove useful to medical students and physicians, as well as other students interested in the study of behavioral and social science and psychiatry.

A successful textbook is viewed as an evolving product that has the potential to improve its shortcomings. In this regard, the appraisal of this work by our colleagues will be most valuable to us.

We wish to express our gratitude to all the authors who have contributed to this textbook. Their enthusiastic response has been an invaluable source of support and encouragement to us during the four years of editorial effort.

We are indebted to many of our colleagues for their support, and wish especially to express our gratitude to Dr. James Mackie for his invaluable editorial assistance in this undertaking. Our thanks are also due to Ms. Joyce Taylor and her staff for their editorial help in seeing the book through press.

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We would also like to express our appreciation to the staff of our publishers, Butterworth Publishers Inc. for their cooperation and assistance.

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Editor in Chief

Introduction

Parts I and II of this volume examine the cross-sectional dimensions of behavior — biological, psychological, interpersonal, and sociocultural. It is clear that if we consider the total living organism as a biosystem, any attempt to understand the behavior of the system must take into account not only its structure but also its phylogenetic and ontogenetic past (its ancestral and individual experience and learning) and its environmental interrelationships — in particular, how it communicates with, influences, and is influenced by other systems and how it maintains its steady state within time and space.

It appears that at last psychology and neurology have found and accepted their common interest in studying behavior. They now help to advance each other. Neurobiologists, for example, are clarifying the specific neuronal elements and processes involved in different behavioral responses. Their work may be of considerable help in furthering the efforts of psychologists to improve their notions concerning behavior classification. It is no longer satisfactory to think that all behaviors are exclusively either reflex or fixed action. That both fields can be of help to each other in dealing with problems of learning, memory, consciousness, awareness, perception, and so forth is obvious.

Notwithstanding the current integrated psychological-biological orientation, however, we are still faced with clarifying the aspects of behavior that are not easily susceptible to objective, experimental approaches. The subjective, introspective aspects of consciousness, perception, symbolic phenomena, and intrapsychic processes must still be analyzed and

interpreted in other ways. We are not yet at the stage where the entire information-processing mechanisms or the myriad facets of communication are clear. We can only hope on the basis of some understanding of individual past and current learning, memories, and experience to interpret properly the results of their symbolic translation and to decode accurately the metaphors in the form that they are communicated to us. We are only at the very beginning of our attempts to understand the operations of the brain in its role as the sociocultural organ which allows people to understand and adapt appropriately to constantly changing interpersonal, social, and cultural influences of the environment. Regardless of the progress in the understanding of the structural-functional dimensions of behavior through the research efforts of the neurobiological disciplines, however, the introspective and interpersonal dimensions of behavior and the psychological and sociocultural phenomena associated with them would also need to be understood in terms other than physical processes. By analogy as Newtonian mechanics continue to stand on their own merit, in spite of progress in quantum mechanics, in the same manner psychological and social sciences will continue to constitute legitimate areas of scientific investigation, utilizing conceptual systems and research methods uniquely suited to studying these dimensions of behavior.

The psychodynamic view of behavior stands as a valid approach that can illuminate both normal and disordered behavior. Although the various psychodynamic theories may be inadequate or limited in conceptualizing the psychological dimension of behavior, the psychodynamic approach still remains valid. Similarly theories that deal with the communicational, interpersonal, social, and cultural aspects of human behavior represent attempts at constructing theoretical models with variable success as a means of conceptualizing a realm of phenomena, the dimensions of which need to be studied by disciplines other than physical science.

The physician needs to have an understanding of the major concepts of these disciplines, especially with regard to those contributions relevant to the practice of medicine. Furthermore these behavioral and social science disciplines represent the basic science foundations of the medical specialty of psychiatry.

Parts III through VII of this volume include chapters dealing with the contributions of these disciplines to the understanding of the psychological and sociocultural aspects of the practice of medicine.

Of central importance is the doctor-patient relationship, which represents the requisite condition for providing health care. Medical procedures, such as diagnosing, prescribing drugs, or performing surgery, are only one aspect of medical care. As important in the successful practice of medicine is the quality of the doctor-patient relationship. Much of the benefit (or failure) of treatment will depend on the type of the interper-

sonal relationship established when the physician and the patient embark on their endeavor together.

Along with the progress that has followed the Flexnerian revolution in medicine, there has been a diminishing emphasis on the approach to the patient and a gradual disappearance of the close doctor-patient relationship. Modern medical practice has been criticized for being impersonal and disease oriented rather than person oriented, for disregarding the psychological needs of the patient, and for obliterating the social, cultural, and humanistic perspective of the patient in his relationship with the physician. It appears that the pervasive process of social change that is affecting society and institutions generally is largely responsible for the loss of this humanistic perspective in medicine. This phenomenon can be fully understood only within the context of a rapidly evolving milieu that is shaped by technology. It is our responsibility to change our dehumanized medical curricula, to introduce humanistic values, and to emphasize the principles of psychological medicine. Interviewing is one of the most important aspects of the doctor-patient relationship and needs to be fully mastered as a skill in the healing art of medicine.

A patient's health has never been isolated from society, and today, with increased governmental intervention in health care, the physician needs to have a thorough knowledge of the social factors affecting health care. Physicians have not been the most active advocates in planning a health care system that meets the needs of our increasingly complex and crowded civilization. Yet if we do not take more constructive and affirmative roles, we are neglecting an important dimension in the general medical care of our patients.

Physicians need to reexamine currently prevailing philosophies regarding many aspects of the practice of medicine, including the physician's responsibility to promote public health, to ensure that health services available to them meet high-quality standards, to take affirmative action in areas of concern, and to become advocates for the availability of comprehensive quality care for all.

Issues concerning values and medical ethics, professional accountability and peer review, and the emotional health of the physician emphasize the principle that the physician must understand his own self and his relationship to the society around him.

The final chapters in Part VII, "Man and Society," discuss issues of a broader perspective, including the psychology of women, psychohistory, and creativity.

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1

Biological Correlates of Behavior

Robert G. Grenell, Ph.D.

In a recent discussion (1976), Sir John Eccles made the following beautifully conceived statement:

More than ever before, brain research is being recognized as the ultimate scientific challenge confronting mankind. Ever since the realization of his existence, man has been trying to understand what he is, the meaning of his life, and how to conquer and control the land, air, and water that are the bases of his existence on this small planet. And now it would be agreed that the brain is central to the life of man. But for man's brain, no cosmological or environmental problems would exist. The whole drama of the cosmos would be played out before empty stalls . . . A better understanding of the brain is certain to lead man to a richer comprehension of himself, of his fellow man, and of society, and in fact of the whole world with its problems. However, the whole story of the wonderful development of man and his brain has a somber side as well. It is as if evolution has overplayed the biological story by developing a system so complex and subtle that it had within it the threat of malfunction on a scale that could overwhelm all of the inbuilt biological controls that ensured the stable and normal functioning of brains of even the higher animals. It is here that we encounter the problems of biological psychiatry . . . The marvelous creative process of evolution has resulted in human brains which are so subtle and sensitive in their functioning that

psychiatric disorders become more and more of a problem for the highly developed societies in our most sophisticated civilizations [5].

It is convenient to investigate the human brain in the way that we would some sort of machine (despite the fact that it is far more complex than even the most sophisticated computer). Numerous areas of study are involved in this investigative process: structural studies to observe the components and their interrelationships; functional studies dealing with the neurochemistry, physiology, and biophysics of the elements of the system; and operational studies concerned with the synaptic linkage of systemic units into hierarchical levels of organization forming the basis for the brain's unique goal: the processing of information resulting in the ability of the organism to carry out the necessary goal-directed, survival-oriented behavior essential for it to adapt continuously to a constantly changing environment. At this level of consideration, the problems lie on the ephemeral border between biology and psychology.

SOME CONCEPTS AND METHODS OF APPROACH TO THE BIOLOGICAL PROCESSES

The Basic Biological Concept: Theory and Experiment

Although the study of behavior necessitates understanding the total organism, as well as its environment, basic behavioral research from the biologist's point of view primarily concerns the mind. In this context *mind* refers to all the structures, events, and processes involved in the brain's handling of information. To begin to understand the essence of mind, it is necessary to correlate neuronal mechanisms with psychophysiological phenomena, i.e., to obtain evidence for the correlation of neural activity and perceptual experience. In his Nobel lecture in 1967, Ragnar Granit, speaking of his work of the previous thirty to forty years, said: "It seemed to me likely that psychophysical data might . . . be translatable into neurological equivalents." Since then a great deal of experimental evidence has been accumulated relative, for example, to the neural correlates of psychophysiological phenomena, including brightness discrimination, pattern recognition, and language. It seems that the time has arrived for the reversal of Granit's process: for the translation of neural data into psychophysiological equivalents.

It is generally agreed that information and communication theory and programming theory are central to these considerations [17]. Certain questions must be asked (relative to both concept and experiment), however, in order to clarify the complexity of the situation. For example, are neurons substantially less reliable than behavior?

Many neural models have attempted to obtain reliable behavior from nets of unreliable neurons. Behavior is alleged to be remarkably reliable under certain drugs such as alcohol that also appear to have disastrous effects on the functioning of individual neurons. However, there is no evidence indicating that real neurons are seriously affected by dosages of drugs that permit reasonably reliable behavior.

The alteration of the neuronal response threshold by a particular concentration of a drug does not confirm the unreliability of the neuron. Other information is needed, including data concerning the blood-brain barrier, synaptic transmission, membrane structure, etc. Some random changes in the position of spikes in a train of nerve impulses with continuously varying time intervals will not alter significantly the information content, particularly in view of the presence of overlapping nerve nets. Eccles goes to the heart of the issue:

Talking about nerve cells and how they pick up information and what information is interesting and what it means, one has to realize that the information converging on single neurons comes from the total activity of many parallel lines. For example, Purkinje cells in the cerebellum have 200,000 lines converging on them. The nerve cell is not concerned with the intervals on any one line but with the totality of the excitation and inhibition added up over reasonable periods of time and its activity is constantly modulated against a background of maintained activity. This is what one has to keep in mind when building models. Then, there is inhibition for sharpening the message and for taking out the "noise." Rarely is there a one to one relationship between successive relays of neurons, for at each stage there is both some integration and some lifting of the signal out of the noise [5].

The most recent approach to this sort of conceptualization has taken the form of an information model with relevance to brain structure rather than a brain model [10]. It represents a hierarchy of information states. Stated in one way, an information state can be looked upon as the sum of the simplest message signals interacting with preprogrammed memory. In a sense the interaction defines the information state. The transition from signal to information state is an encoding process, and the information event itself (whether electrical signal, neurochemical, field related, or mechanostructural), on one hand, is the result of a large number of more microscopic events acting cooperatively and, on the other, is associated with the higher functions (thoughts, judgments, emotions, feelings, etc.) leading to overt behavior. Investigation of the latter, then, becomes an enormously complex systemic problem in which data must be obtained, wherever possible, from the most submicroscopic levels up. A further complication, of course, is added in man where introspective processes can be analyzed only in either highly indirect ways or through subjective report.

Thus it becomes apparent that advances in the understanding of behavior depend on the synthesis of concepts and techniques from numerous disciplines — anatomy, physiology, chemistry, pharmacology, genetics, physics, engineering, and psychology. The ultimate synthesis must then be examined in the light of its constant interplay with the environment.

Genetic Influences on Brain and Behavior

Evidence has accumulated demonstrating that genes play a vital role in the development and regulation of both normal and abnormal behavior. Studies have been and are continuing to be carried out relative to both evolutionary genetic factors and immediate, familial genetic influences of individual development.

A new interdisciplinary field, behavioral genetics, has been developed. Its directions include mathematical and experimental models of genetic variation in populations, gene interaction, cytogenetic studies, structure of DNA and the genetic code, and mechanisms for manipulating genetic expression so as to allow the organism to adapt to a changing environment. Psychiatric genetics uses these studies and is concerned with specific directions, including the experimental study of individual differences in myriad animal species, including humans. Analyses of families and twins are being advanced by enzyme analysis and linkage studies seeking genetic markers and by adoption and longitudinal studies in an attempt to take the role of environment into account. As Rainer states, "These levels [of the role of genetics in psychiatry] can range from the subatomic, the molecular, intracellular and cellular, to the tissue, organ and organismic the neurologic and psychodynamic, the family, social, demographic and ecologic and on the broadest time scale the level of evolutionary change [39:24]. He describes briefly some of the methods used in studies at many of these levels.

One area is behavioral genetics, where studies are being carried out in animals as well as man. A widely used approach involves the production and comparison of inbred strains. Using this methodology, investigators have described genetic differences in learning ability, activity levels, sexual behavior, aggressive behavior, sensitivity to the effects of alcohol, and so forth. Results of a similar nature have been obtained with selective breeding. A subsequent question concerns the mechanisms responsible for the behavior. In one group of studies, investigation has been carried out on mice evincing abnormal behavior triggered by stress. The mice were subjected to sounds, which caused them to react with convulsions (audiogenic seizures). Further study showed that the particular genetic

strain of mice subject to such convulsive responses has markedly low cerebral levels of norepinephrine and serotonin. A basis for understanding genetically influenced behavioral traits in man is provided by an analysis of how genetic information is translated into the specific structures of the nervous system.

Another area of study relates gene-environment interaction. The combination of genetic, constitutional, early nurtural, and social influences has been used to study psychosomatic disorder. Mirsky [32], in a study of the etiology of peptic ulcer, found an apparently genetically determined variation in the secretion of pepsinogen (measured in urine and blood) in newborns and healthy adults. Signs and symptoms of duodenal ulcer were found under conditions of environmental deprivation in those rated as hypersecretors. According to Mirsky, infants who are functional hypersecretors, presumably on a genetic basis, "demonstrate a maternal overdependence which the average mother cannot satisfy. They develop a feeling of maternal rejection. The insatiable dependency wishes remain and, in later life can be reactivated by environmental stress" [39:26]. The resultant anxiety may induce the formation of the ulcer (in such a genetically predisposed person with, for example, pepsinogen hypersecretion or autonomic hyperactivity).

The study of molecular and biochemical defects has been productive. Heredity is transmitted by genes through alterations in enzymes or other proteins. What these are in the case of inherited susceptibility to schizophrenia or manic-depressive psychosis are not yet known, although research suggests a possible involvement of the synthesis or release of neurotransmitters in the brain. The isolation of a faulty enzyme can give evidence of the genetic basis of a disease. The approach involves the identification of enzyme deficiency by electrophoresis or analysis of the course and progress of intermediary metabolism. Phenylketonuria is a well-known example. In 1934 Følling [6] discovered phenylpyruvic acid in the urine of children with mental retardation and certain physical signs (among them light skin, blue eyes, and hyperactive reflexes). Study revealed that the condition resulted from a deficiency of phenylalanine hydroxylase (a liver enzyme), generally inherited through an autosomal recessive gene.

Modification of Inherited Components of Behavior

A number of investigations have been designed to study factors that might reasonably be expected to modify the development of brain and behavior.

Research on the earliest stage of learning — imprinting — was designed to show the interaction of the genetically determined imprinting

mechanism and the environmental condition that allows the action to be expressed. If the environmental condition is not presented or is prevented from occurring at the proper time, imprinting does not take place.

A number of studies were and are continuing to be undertaken to test the hypothesis that early experience can modify many basic inherited components of behavior. Experiments in which one group of young mice was handled very frequently as compared with a rarely handled group demonstrated that frequent handling in early life will make genetically aggressive mice more docile. Monkeys reared in isolation become socially and sexually abnormal.

Many studies are concerned with so-called environmental impoverishment or enrichment. Research involving either extreme sensory deprivation (either complete or partial reduction of somatic afferent inputs) or environmental enrichment in the early postnatal period has demonstrated the remarkable effects of these situations on the developing brain. Significant changes have been induced in both cases — decrease in the former and increase in the latter — in neuronal dendritic branching, in density of dendritic spines in the cerebral cortex, and in the number of synapses. In cases where animals were allowed no visual input from birth, the visual cortex failed to develop. The cerebral cortex of rats that had lived in an enriched environment grew larger both in relation to other brain areas and to the cortices of impoverished rats. The animals with enlarged cortices showed greater problem-solving abilities. Studies of this nature have led to the suggestion that human intellectual abilities might be enhanced considerably if some type of "formalized" education were begun as soon after birth as possible.

Serious defects in brain development and associated behavior have also been demonstrated to occur subsequent to both prenatal and postnatal effects of malnutrition and drugs. The earlier malnutrition occurs and the longer it lasts, the greater the permanent deficit. Impaired learning ability is only one of the severe consequences demonstrated in malnourished animals and in man. The results of maternal intake during pregnancy of thalidomide, addictive drugs (such as morphine, heroin, and alcohol), have made it clear that the embryo and fetus are extremely vulnerable. The harmful effects can be demonstrated to vary widely depending on the phase of development involved. Such observations have led to detailed studies of the vulnerability of different regions of the brain as a function of the time at which each region matures.

A related major area of investigation concerns the role of hormones in the regulation of nervous system development. A number of fundamental questions involve these areas of neuroendocrinology and psychoendocrinology. Numerous studies have attempted to deal (both in animals and man) with how interaction at early stages of life between

hormones and neurons relates to the way in which brain development occurs so as to establish the essential substrate for adult behavior. Other work is concerned with the role of hormones in motivated behavior [37]. Whatever the question being asked, basic underlying mechanisms remain to be clarified at a simpler level before the vast behavioral complexity can be unraveled. Not only hormones but their metabolites must be identified and their mechanism of release detailed. Research must be carried out directly aimed at explaining how cell function is affected, regulated, or changed by hormonal action, and what specific areas of the brain are involved.

Although the greatest emphasis has been placed on gonadal hormones and sexual behavior, these and other hormones (e.g., thyroid and glucocorticoid) appear to play an important role in other forms of behavior. Investigation of many types — anatomic, chemical, physiological — shows that these substances can affect neuronal development, cell formation, protein synthesis, cell size and number, dendritic and synaptic development and structure, and electrical activity. A recent National Institutes of Health summary (*Research in the Service of Mental Health*) points out that "substances like cortisol and thyroxin, which can be used to change the rate of certain aspects of neuronal development, may have enormous potential for the experimental analysis of relationships between structure and function" [43]. Current research into the identification and function of hypothalamic peptides (e.g., the regulation of hormones and behavior) is one of the most stimulating new developments.

Perhaps the most important general concept involved in all the considerations above is suggested by the term *plasticity*. Without this characteristic of modifiability, adaptation would be impossible. At any level, plasticity connotes the ability of the system to change from one set pattern or modus operandi to another or to undergo modification of a given operational framework. The ability to adjust occurs at all levels, from the finest submicroscopic structural level to the most complex macroscopic informational and behavioral levels. Self-adjustive modifications in the system may occur as graded phenomena (e.g., at synapses) or as ungraded, selective, or stepwise processes (digital, yes-no, all-or-nothing, on-off). The effects of stimulation or deprivation on the developing system are all involved with plasticity, particularly as it relates to the processing of information. Other examples of plasticity include:

- 1 Changes in synaptic events and molecular conformation associated with particular electrical inputs, drug actions, hormone actions, learning events, and so forth.
- 2 The capacity of the developing organism to recover function subsequent to brain injury. In this case the recent discovery of

collateral sprouting is of remarkable interest. In some cases normal input cannot reach certain neural elements as a result of injury to axons with which they usually connect; instead they form new connections with collateral processes that have sprouted from nearby undamaged axons. These collaterals seem to fill in the same locations previously occupied by the damaged fibers. Remaining problems involve demonstration of the functional capacity of such new synapses and whether they can subservise basic patterns of behavior.

- 3 Subtle alterations in the relationship between neuronal firing and muscular contraction may be produced by conditioning techniques. Thus the linkage between cortical neuronal function and movement may be a plastic one, capable of change during learning or recovery from local neuronal damage.

Plasticity, then, deals in a fundamental sense with modification of structure.

Brain Structure, Function, and Behavior

Perhaps the major basic biological area of behavioral investigation has been that concerned with brain structure — both anatomic and chemical — and the role played by specific structures in cerebral function and associated behavioral patterns. The primary biological concept involved is that by analyzing the organization of the brain and the structure of brain cells, examining their chemical composition, and detecting their function, the basic operation of the brain — and thus the cerebral regulation and control of behavior — will be made clear. Currently the most active areas of investigation include the study of cell membranes and synapses; the identification, synthesis, release, action, and interaction of transmitting molecules (*neurotransmitters*); and regions and pathways of the central nervous system (CNS) involved in the regulation and control of specific behavior patterns.

The first two of these areas are primarily concerned with synapses. It could be said that in a sense the synapse is the fundamental regulator of behavior. Relatively recent research has revealed that neuronal surfaces (*membranes*) have specific receptor sites. Some of these are related to synaptic action. Others, however, are related to molecules not at all involved in synaptic actions (on these particular neurons). Such new insights into the pharmacological properties of neuron membranes have been developed by the use of special neuropharmacological techniques such as microiontophoresis (the electrophoretic application of substance to the exterior of the neuron surface), local perfusion (the replacement of blood in a small area of the brain with control or experimental solution of known

chemical composition), and other specific immunological and chemical methods. With iontophoresis, the responses of the neurons are assayed by changes in their background firing frequency. Other methods used to study these responses include electroencephalography and evoked responses to stimulation (at a specific location and with specific stimulus parameters) both at the gross and single unit levels. Both spontaneous rhythms of the electroencephalogram (EEG) and definable, event-related potentials (ERP) can be recorded from the surface of the human scalp. The best-known ERP is the sensory response evoked by an external stimulus. EEG recordings may be obtained relatively directly by amplification and recording of the activity picked up by the electrodes on the scalp, but most ERP activity is embedded in the EEG activity (of higher amplitude) and can be studied only after applying particular signal processing procedures to the EEG. The entire problem of evoked potential study of this type is discussed at length by Shagass [44].

Electron microscopy continues to be a useful technique. It has illuminated the structure of the synapse and the synaptic vesicles, now accepted as storage packets of specific chemical transmitters. It is yielding evidence relative to the organization of the vesicles and their availability for ejection of their contents into the synaptic cleft, as well as to how they are recharged after emptying. It also aids investigation into the development of nerve cells. (Numerous additional techniques are being used to study nervous system development. Various chemical, viral, and radiation lesions are being employed to study reactions to the destruction of specific developmental elements. Neurogenesis is being clarified by radio-labeling techniques. Radioisotopes are incorporated into nuclei of germ cells prior to mitosis and neuroblast formation; neurons derived from these neuroblasts can be identified over long time periods by the radioactive label. Such a technique is helping to clarify the origin of defects in brain development, knowledge of which should allow for the discovery of rational therapy of congenital cerebral defects.)

Microiontophoresis has been applied particularly to the problem of transmitter identification in the CNS. A number of such substances now appear to be generally accepted as functioning in this way: acetylcholine, glycine, γ -aminobutyric acid, and norepinephrine. Others are more questionable: dopamine, serotonin, glutamate, and substance P — so-called putative transmitters. A consideration of the events that can occur when a transmitter molecule attaches to a receptor gives some idea of both the complexity of the system and that of the research involved in trying to unravel the steps between passage of a message in the nervous system and the evocation of a correlated behavioral pattern.

The study of brain transmitters became a matter of major importance to psychiatry after a series of studies implicated catecholamines in schizo-

phrenia and depression. As in other cases it was necessary to determine the brain systems involved; a study facilitated by the discovery of a neuroanatomic method made it possible to stain these systems so they could be clearly seen and, to some extent, separated from one another. Subsequent chemical and neurophysiological studies delineated certain special properties of these systems. Although it is not yet clear what special functions they mediate, their properties fit them for controlling behavioral priorities. As Olds has pointed out, "This is because the repeating theme is competition for an 'artificially' limited resource, all the time constants involved are in the order of magnitude of behavioral episodes rather than of neurophysiological events" [37:376]. Psychopharmacological research has further clarified other questions related to the action of these transmitters (including interaction, synthesis release, blocking, and depletion). In addition both stimulation and lesion studies have added immeasurably to our understanding of the relationship between specific transmitter systems and specific behavioral patterns (such as the correlation of the norepinephrine system with drive-reward behavior). This continues to be one of the most productive and provocative areas of biobehavioral research, particularly in the study of motivated behavior.

Just as particular brain regions and pathways seem to relate directly to transmitter systems relevant to specific behaviors, so it appears that specific cerebral areas and pathways relate to perceptive and emotional functions. There is, of course, no question of the importance people assign to the role of sensation and perception in the generation of emotional feelings. A great deal of physiological and psychological investigation is concerned with these mechanisms of sensation and perception.

Anatomic and physiological research have demonstrated the organization of the somatic, visual, and auditory projections from receptors to thalamus to cortex — point-to-point projections. Evoked potential techniques have allowed for a further subdivision of these sensory cortical areas. Neurophysiological studies have disclosed that the cortical units are arranged in columns, so that all of the cells in a particular column share the same field and orientation and react to similar parameters of stimuli projected within that field. Phylogenetic investigation gives increasing evidence of the crucial role of the neocortex in sensation and perception as encephalization progresses up the animal scale. Important pathways, additional to the classical sensory paths, are being revealed. Electrophysiological studies have begun to delineate properties of cerebral areas related to particular perceptions, e.g., properties of cortical areas apparently involved in the perception of form (the so-called inhibitory surround detected in receptive fields of somatosensory and visual areas is of importance in this regard). Information of this type is being obtained from physiological studies in animals and people, from neurosurgical studies, and from observations of behavior after brain lesions. Many of the con-

cepts involved are discussed at length by Livingston [26] in one of the most creative summaries available.

Although much work is being devoted to learning how animals recognize patterns, many basic mechanisms still resist clarification. As MacLean states, "As yet, little consideration has been given to . . . what is it that makes an animal reactive to environmental apparitions, including ill-defined partial representations of an object or animal, that are conducive to propensive and emotional behavior, serving also in ethological terms, as 'releasers' of specific forms of behavior? Of the many examples, one of the best known is that of infants responding to crude, partial representations of the human face" [29]. He continues, "What is the neural circuitry by which verbal or nonverbal information, derived through the visual, auditory and somatic systems, generates affective states?" His discussion focuses on experiment and concept in the limbic system and its role in emotional behavior and on how sensory and perceptive mechanisms influence on forebrain structures presumably involved in the experience and expression of emotion.

A series of related studies in man is described in Heath's [12] recent review concerned with the correlation of brain function with emotional behavior. He deals with animal experimentation (EEG, evoked potentials, etc.) and with observations of several types in man. Some of the studies are unique in that they involve implantation of electrodes (for stimulation and recording) into specific areas of the human brain. As Heath states, "Interaction of the brain sites for emotional expression with the nuclei containing specific transmitter chemicals has provided a background for biochemical studies relating transmitter activity at specific brain sites to behavioral phenomena" [12].

Each of us believes himself to live directly within the world that surrounds him, to sense its objects and events precisely, and to live in real and current time. From a conceptual point of view it is of great interest to quote from Mountcastle:

I assert that these are perceptual illusions. Contrarily, each of us confronts the world from a brain linked to what is "out there" by a few million fragile sensory nerve fibers, our only information channels, our lifelines to reality. They provide also what is essential for life itself: an afferent excitation that maintains the conscious state, the awareness of self.

Sensations are set by the encoding functions of sensory nerve endings, and by the integrating neural mechanics of the central nervous system. Afferent nerve fibers are not high-fidelity recorders, for they accentuate certain stimulus features, neglect others. The central neuron is a storyteller with regard to the nerve fibers, and it is never completely trustworthy, allowing distortions of quality and measure, within a strained by isomorphic spatial relation between "outside" and "inside." Sensation is an abstraction, not a replication, of the real world [34].

Hemispheric Specialization

Recently have emerged some highly important studies of cognitive function associated with specific neurosurgery and subsequent assessment by myriad techniques including EEG, evoked potentials, and visual field differences in perception and reaction time.

The two cerebral hemispheres are specialized for different cognitive functions (e.g., for right-handed people, language processes and arithmetic are primarily handled by the left hemisphere; the right hemisphere is involved particularly with spatial relations and some musical functions). They each appear conscious after surgical disconnection. Under these circumstances there appear to be two separate and different minds. This is the remarkable observation resulting from many years of investigation of commissurotomy patients by Sperry, Bogen and others. The details of this work have been presented in the beautiful summary of Galin [7].

What is important in the present context is the experimental approach and conceptual relationship of such studies to neurophysiological constructs of conscious and unconscious processes. Galin points out that the dissociation between the experiences of the two disconnected hemispheres can be dramatic. In this situation the mental processing of each hemisphere is not accessible to deliberate conscious retrieval as far as the other is concerned. Galin describes the following incident photographed by Sperry and his colleagues:

One film segment shows a female patient being tested with a tachistoscope. In the series of neutral geometrical figures being presented at random to the right and left fields, a nude pinup was included and flashed to the right (nonverbal) hemisphere. The girl blushes and giggles. Sperry asks, "What did you see?" She answers, "Nothing, just a flash of light," and giggles again, covering her mouth with her hand. "Why are you laughing then?" asks Sperry, and she laughs again and says, "Oh, Dr. Sperry, you have some machine!" [7:151].

As he notes, if the patient's neurosurgical history were not known, her reaction might be regarded as being clearly a perceptual defense with which she was repressing her perception of conflictful sexual material. In any case, the consideration of material of this nature in the light of the various psychoanalytic models of the mind suggests that it is useful to try to relate the functioning of various parts of the mental apparatus to specific anatomic areas and pathways. Some considerations of this type have led to Galin's suggestion that a functional disconnection of the two hemispheres possibly may occur in so-called normal people. He points out that a number of neurophysiological investigations have yielded data that could support a physiological basis for such a hypothesis (selective gating

in central control of sensory input, inhibition of discharge consequent to callosal stimulation, etc.). He discusses the conditions favoring the development of separate streams of consciousness accompanying the alteration of communication between the two hemispheres. The same situation suggests certain directions for future research concerning the expression of unconscious processes. Galin observes:

After the two hemispheres in man or monkey are surgically disconnected, one side tends to dominate the behavior. In the human cases, the left hemisphere usually has pre-emptive control over the main stream of body activity as well as of propositional speech. If repression in intact people is to some extent subserved by a functional disconnection of right hemisphere mental processes, we might expect to see the expression of unconscious ideation through whatever output modes are not preempted by the left hemisphere . . . One possibility for expression is through somatic representations, psychosomatic disorders, and somatic delusions . . . Another channel for somatic expression of right hemisphere attitudes is the autonomic nervous system [7:160].

The autonomic variable can be of interest in itself or as an indicator. Such experiments are in progress. There is no doubt that this entire area of integrated investigation will burgeon over the next decade. It appears to offer the possibility of clarifying many of the most complex problems and of playing a major part in the attempt to bring the medical and psychoanalytic models together.

Models

This discussion would not be complete without drawing attention to model systems and how they are used in experimental work designed to isolate biological phenomena concerned with mental function and mental disorder. *Model* is not used here in the simple engineering sense; instead it signifies anything less than the total human organism in his environment. In other words from the point of view of human behavior, any experiment involving any other animal species is a model experiment. At another level, any *in vitro* experiment is a model. In other terms, investigation can be carried out on the basis of different types of underlying concepts. For example, biological studies of mental function historically have been considered to be based on the so-called medical model; other types of studies, presumably dealing with the mind but not the brain, have been considered to be based on the analytic model.

The major point to be made here, however, does not concern the justification of any particular theoretical model of mind, brain, or illness. It

concerns the fact that in order to define certain specific biological correlates of behavior, the investigator must find the most appropriate experimental material. Specific preparations will yield information that generally cannot be obtained from a more complex preparation. The investigator must, however, understand the limitations of his particular model and not attempt to interpret his findings in relation to anything other than that model system. His results, nonetheless, can be of major assistance in the conceptual integration of many factors involved in mental functioning and leading to mental illness. *Model*, then, can mean "an experimental compromise in that a simple experimental system is used to represent a more complex and less readily accessible system: the animal to represent the patient, the tissue slice to represent the intact living brain; the isolated nerve ending to represent the intact synapse" [15]. The most recent and informative discussions of this problem can be found in the small but important book *Model Systems in Biological Psychiatry*, edited by D. J. Ingel and H. M. Shein [15].

SENSORY PROCESSING, PERCEPTION, AND EMOTION

The oversimplistic notion that sensations and perceptions are nothing more than consequences of afferent input must be laid aside in considering their role in overall behavior. Sensory input is not the exclusive guide of behavior. As Livingston puts it, "All behavior may be considered a search for internal satisfactions in which sensory input plays only a prognosticatory and consequence-tallying role" [26]. At any particular moment, the flow of both conscious and unconscious processing involves past experiences, expectations, goals, and sensations organized to subserve anticipated behavioral advantages. Sensation, which may be only a small part of this total flow, is a subjective experience resulting from stimulation of sensory receptors. Sensory processing, however, in addition to the transmission of evoked responses through transducers and other neural structures up to the higher centers of the brain, necessitates comparisons with previous experiences—stored in memory—as well as recognition and decision making. Many sensory signals remain unconscious.

It would be helpful, at this point, to recall some of the CNS structure directly involved in sensation and perception—i.e., in the sensory and perceptive aspects of emotional processes. (The peripheral structures, starting with the many forms of receptors, will not be discussed here in any detail. Livingston gives a brief and interesting description of their variety and general and special properties. It should be noted, however, that detailed knowledge of receptor mechanisms is only now beginning to be clarified. Some remarkable current research on these systems will be

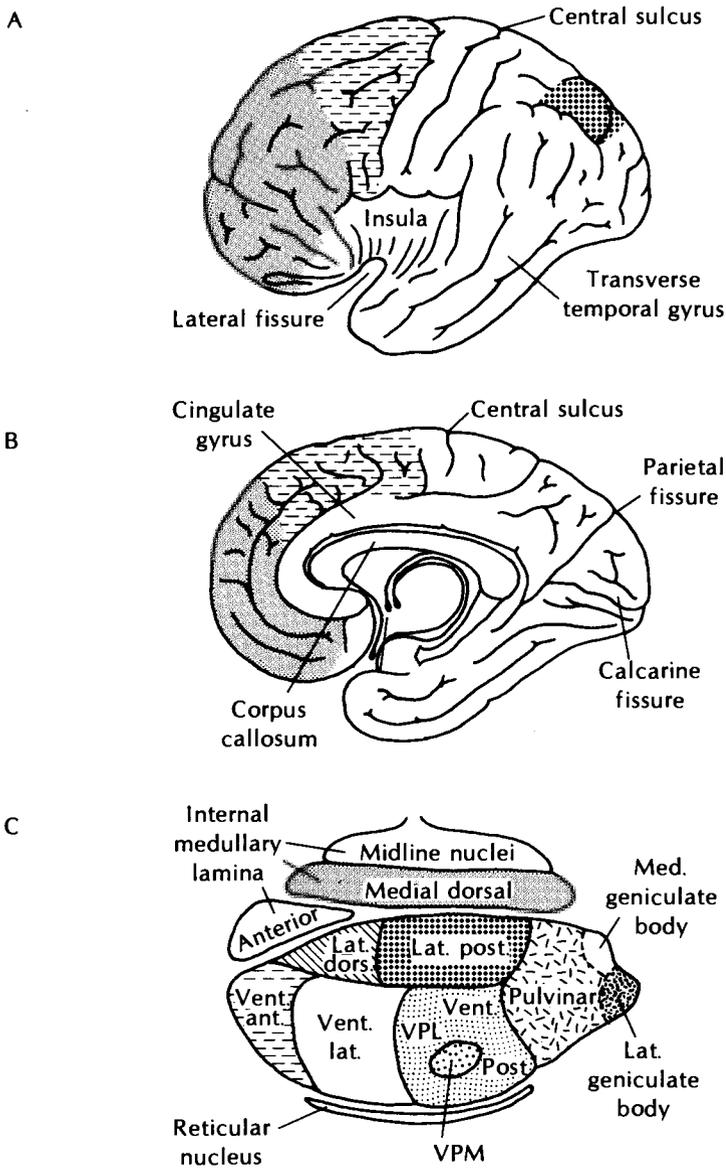


Figure 1.1
 Thalamic projections. Diagram of the lateral (A) and medial (B) aspects of the cerebrum and of the thalamic nuclei (C), showing projections by similar symbols. From Curtis et al [3].

found in a forthcoming publication of the Society of General Physiologists, dealing with membrane receptors.)

The term *sensory unit* refers to the receptor plus the centrally conducting axon and the cell body. This is the primary afferent unit, the first neuron in the order of sensory processing. It is clear that an orderly projection exists between receptors and thalamus and thalamus and neocortex. The thalamic projections are shown in Figure 1.1. With the evolution of the brain the neocortex becomes increasingly crucial for sensation and perception.

The crucial CNS cell masses involved in these functions are given in Tables 1.1–1.4. Some of the pathways involved are depicted in Figure 1.6, below. It is important to note, as MacLean [29] has done, that it has not yet been possible to identify any neural circuitry by which information coming from the visual, auditory, or somatic systems generates affective states. The limbic system and more ventral CNS loci appear to be primary sites of involvement with emotions. The limbic system is shown in Figure 1.2. The major pathways pass through the ventral diencephalon, with the lateral and medial forebrain bundles as two major systems leading to and from striatal and limbic structures. The lateral forebrain bundle includes the ansa and fasciculus lenticularis, as well as the nigrostriatal and striatonigral pathways. The ansa lenticularis curves out of the globus pallidus, coursing through the dorsolateral part of the hypothalamus and becoming involved with the median forebrain bundle. It is now of some interest that the ansa contains ascending dopamine fibers. MacLean [29] has reported a most interesting observation. He produced large bilateral lesions in the ventral diencephalon involving the central ansal system and part of the median forebrain bundle (in monkeys). Although there is recovery of locomotion and an ability for self-feeding, the striking thing about these monkeys is the complete lack of what one might call their animality. They have, according to him, a zombie-like behavior which is distressing to observe.

Perception too involves subjective awareness, both of the effects of current stimuli and of constructs brought into consciousness from real or imagined previous experience. Perception can be subject to error. In Livingston's view, it nonetheless provides our only access to reality: "Sensation, interpreted through perceptual modes, is our primary means of contact with our existence, our place in space-time, and our experience with objects, events, and nature in general. We can 'know' something to be contrary to our perception, in which case we say we are experiencing an illusion; but our perception, even with its errors, is always first-hand. In hallucinations we have no other awareness" [26]. Thus perception includes all information available to consciousness relative to our internal state; it includes the global area of conscious thought processes. Subjec-

tive responses constitute a key to feeling states. Although we do not know as yet the specific brain mechanisms involved in perceptual processing, there are some data of interest at hand.

Feeling states appear to arise from activity in the cerebral gray matter adjacent to the walls of the ventricular system, the floor of the fourth ventricle, the periaqueductal area, the walls and floor of the third ventricle, and in both subcortical and cortical structures relating to the limbic system. The most significant evidence relating the limbic system (the visceral brain) to emotional behavior has been obtained in the clinic. Neurons discharging in or around the temporal lobe limbic cortex may induce a wide range of striking subjective feelings, those feelings usually associated with survival threats, referred to by MacLean [29] as basic affects ("deriving from interoceptions signaling different kinds of internal states associated with basic bodily needs"), include hunger, thirst, nausea, sleep, and sex; those termed specific apply to exteroceptions and perceptions resulting from activity of specific sensory systems, such as unpleasant tastes, odors, and pain, some conditioned, some unlearned; MacLean's general affects include feelings of familiarity or unfamiliarity, fear, terror, or sadness. Neuronal discharges into or near the temporal limbic cortex may range through this whole spectrum, and if they spread to other limbic areas may, perhaps, give rise to pleasant feelings. It is of interest that such seizures do not spread appreciably beyond the limbic system, usually showing nothing of significance in the neocortex. This separation of limbic and neocortical activity has been termed *schizophysiology* by MacLean [29], who suggests it may be partly responsible for the difference "between what we affectively feel and what we know." The hippocampus seems always to be involved in such limbic seizures. It would seem not unrelated that the hippocampus receives afferent projections from all the sensory systems—visual, auditory, somatic, and visceral. MacLean [28] points out that case histories of such limbic epilepsy strongly suggest that the limbic system function is basically involved with feelings of reality of the self and the environment. Seizure discharges in the system can so disrupt its function that they may result in perceptual distortions, mood changes, hallucinations, delusions, and so forth. What is the neural basis for these alterations in sensation, perception, and affect? The answer cannot yet be given definitively, but there is an ever-accumulating amount of experimental data suggesting mechanisms by which information of interoceptive and exteroceptive systems can interact in the hippocampus and influence hypothalamic and other structures of the brainstem involved in emotional behavior. The basic mechanism was originally suggested by MacLean and based on the Papez theory of emotion [38]. In their view the hippocampal formation was visualized as a mechanism that combined internally and externally derived information into affective feelings

Table 1.1
MAIN CELL MASSES OF THE MESENCEPHALON

Cell Masses	Connections		Possible Functional Associations
	Afferent	Efferent	
<i>Tectum</i> Tectum opticum (called superior colliculus in mammals)	II, cord, bulb, sensory nucleus of V, isthmus, torus semicircularis or inferior colliculus, pretectum, thalamus, telencephalon	Cord, bulb, periaqueductal gray, reticular formation, nucleus isthmi, thalamus (especially birds and mammals), retina (teleosts, amphibians)	Correlation of visual, auditory, and somesthetic; feature-extraction; localizing stimuli; formulation of higher reflex commands; eye and head movements especially in orientation
<i>Tegmentum</i> Torus semicircularis (called inferior colliculus in mammals)	Lateral line nuclei (fish), cochlear nuclei (tetrapods), vestibular nuclei (less in higher groups), cord, V sensory nucleus	Tectum, thalamus, reticular formation	Correlation of information on equilibrium and near-field aquatic displacements (and electric fields) sound sources; localization
Nuclei III, IV (including general somatic and general visceral efferent)	Vestibular nuclei, cerebellum, tectum (indirectly), reticular formation	Extraocular muscles, iris, and ciliary muscle (parasympathetic)	Movements of eyes; accommodation; pupillary constriction

Periaqueductal gray matter, tegmental nuclei, interpeduncular nuclei	Complex, including tectum, hypothalamus, habenular cord, telencephalon	Complex, including nuclei of III, IV, VI, pons, thalamus, hypothalamus	Limbic system; affect, visceral control
Isthmo-optic nucleus	Tectum	Retina (in birds only)	Horizontal cell response
Nucleus isthmi (in non-mammalian forms)	Tectum, probably torus semicircularis	Tectum, torus semicircularis tegmentum, thalamus	Correlation of optic, equilibrium, acoustic influences
Reticular formation, including tegmental reticular nuclei	Cortex, pallidum, reticular formation of other levels, cerebellum, vestibular nuclei, cochlear nuclei, tectum cord	Reticular formation of other levels, thalamus, cord	Motor control, pupil, many functions; reticular activating system
Red nucleus	Dentate, interposed nuclei, precentral cortex (somatotopically organized)	Cord, bulbar reticular formation, inferior olive, cerebellum, thalamus (especially from small-celled newer part of red nucleus)	Motor coordination, especially righting; flexor activity; well developed in carnivores poor in primates
<i>Intermediate zone</i>			
Substantia nigra (large in man, small in other mammals, only a forerunner in reptiles)	Caudate, putamen, subthalamus, pretegmentum	Striate, pallidum, thalamus	Extrapyramidal motor; inhibition of forced movements; pathologic in parkinsonism

From *Introduction to Nervous Systems*. T. H. Bullock, with R. Orkand and A. Grinnell. W. H. Freeman and Company. Copyright © 1977.

Table 1.2

COMPONENTS OF THE DIENCEPHALON IN ITS FULL DEVELOPMENT

Divisions	Some Principal Connections			Functions
	Nuclei	Afferent	Efferent	
Epithalamus	Habenula	Hippocampus Preoptic area Hypothalamus Pallidum	Interpeduncular nuclei (thence to reticular formation and cord)	Primitively olfactory re- flexes; now?: visceral and pineal control
Hypothalamus	Anterior group supra- optic paraventricular Lateral group Middle group Posterior group mammi- lary posterior hypo- thalamic area	Rhinencephalon (via medial forebrain bundle) Thalamus, medial and midline Hippocampus Amygdala Tegmen of medulla	Midbrain tegmentum Cord — indirectly via periventricular gray Posterior hypophysis Thalamus, anterior medial Cortex, diffuse	Autonomic control Emotional expression Affective tone Vagal — cortical arousal
Ventral thalamus (=subthalamus)	Supthalamic nuclei, zona incerta, tegmen- tal fields	Pallidum	Pallidum Reticular formation	Extrapyramidal descend- ing motor Arousal
Dorsal thalamus (=thalamus)	Midline group Intralaminar Centromedian Anterior ventral	Hypothalamus, thalamus Midbrain reticular for- mation Pallidum, striatum Cortex, diffuse	Approximately the same as afferent connections	Subcortical and Diffuse cortical

Lateral ventral	Dentate nuclei	Cortex, precentral, 4 and 6*	Cerebellar relay
Posterior ventral	Cord and bulb (via spinal and medial lemniscus)	Cortex, postcentral, 1, 2 and 3	Somatic relay
Medial geniculate	Inferior colliculi	Cortex, superior temporal, 41	Auditory relay
Lateral geniculate Anterior	Retina Mammillary bodies	Cortex, calcarine, 17 Cortex, cingulate, 23, 24, and 32	Visual relay Motivational relay
Dorsal medial	Intralaminar and lateral thalamic nuclei; hypothalamus; olfactory tubercle; amygdala	Cortex, prefrontal and orbital	Visceral affective association
Lateral	Cortex, tectum	Cortex, parietal association	Somatic association
Pulvinar	Lateral and medial geniculate; superior colliculus	Cortex, parastriate, posterior parietal, posterior temporal, frontal	Visual — auditory association

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* Most cortical and some other connections are reciprocal.

Table 1.3
THE STRIATUM: SUMMARY OF COMPONENTS AND
CONNECTIONS IN MAMMALS

<i>Phylogenetic Interpretation</i>	<i>Part</i>	<i>Connections</i>	
		<i>Afferent</i>	<i>Efferent</i>
Archistriatum (in part)	Amygdala	Olfactory lobe and olfactory cortex Insular cortex Temporal cortex Midbrain reticular formation	Hypothalamus Septum Olfactory gray Thalamus, dorsal medial Cingulate cortex Temporal cortex Midbrain reticular formation
Paleostriatum (in birds and reptiles the homologue is called <i>paleostriatum primitivum</i>)	"Pallidum" Globus pallidus	Caudate Putamen Midbrain reticular formation Subthalamus Cortex (area 6) Thalamus Substantia nigra	Subthalamus Thalamus Midbrain reticular formation
Neostriatum (in birds and reptiles the homologue is called <i>paleostriatum augmentatum</i>)	"Striatum" Putamen Caudate	Cortex (areas 4, 6) Caudate Substantia nigra Thalamus Cortex Thalamus Substantia nigra	Pallidum Substantia nigra Putamen Pallidum Substantia nigra

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that were elaborated and expressed through connections with the amygdala, septum, basal ganglia, hypothalamus, and the limbic reentry path referred to as the Papez circuit. Most recently the cerebellum has shown itself to be involved in these emotional behavior circuits. Heath [12] as a result of experiments in both animals and man, points out that there are (1) monosynaptic connections within nuclear sites involved in emotional expression, that is, among the hippocampus, amygdala, and septal regions; (2) direct monosynaptic connections within pertinent sensory re-

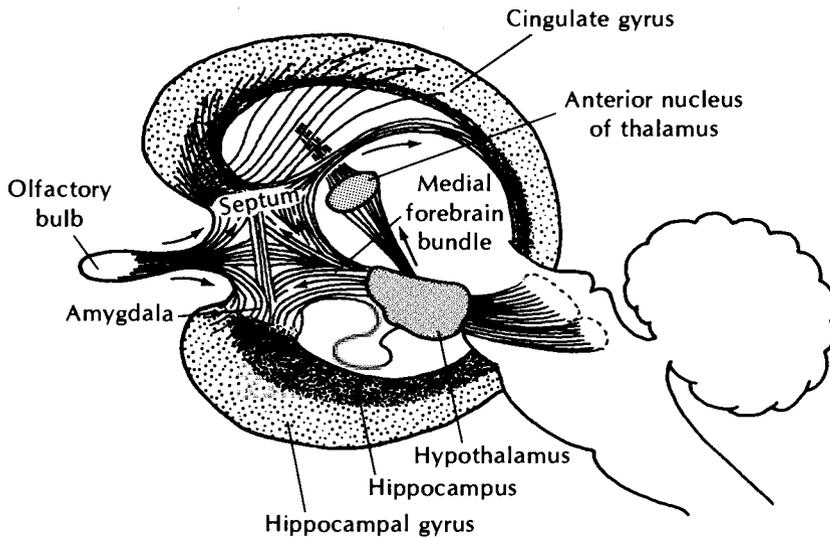


Figure 1.2
The limbic system. Diagram of the principal components. From McLean [27].

lay nuclei: the posterior ventral lateral nucleus of the thalamus for somato-sensory sensation, the fastigial nuclei of the cerebellum for proprioception, the medial geniculate bodies for audition, and the lateral geniculate bodies for vision; and (3) direct back-and-forth monosynaptic connections between these sensory relay nuclei and the sites for emotional expression, both for pleasurable and adverse states.

In a recent review, Snider and Maiti [45] discuss the cerebellar contributions to the Papez circuit at some length. They make it clear that both anatomical and physiological studies show cerebellar connections to limbic and related areas (even via catecholamine fiber bundles), connections that can modulate the limbic role in emotion and modify a wide range of responses which involve functional activities of either the sympathetic or parasympathetic systems. Animal behavior studies have further indicated that electrical stimulation of the anterior cerebellum can induce responses such as arousal, predatory attack, and feeding, activities that Snider and Maiti point out mimic those obtained by stimulation of the amygdala.

These observations demonstrate a richly interconnected network as the basis for an integral relation between brain areas for emotional expression and those for sensory perception. It would appear, from earlier observations, that sensory information affecting the hypothalamus is first integrated and processed in the limbic cortex and related structures. A

Table 1.4
 THE PALLIUM: SUMMARY OF COMPONENTS AND CONNECTIONS IN MAMMALS

<i>Phylogenetic Interpretation</i>	<i>Part</i>	<i>Some Principal Connections</i>		
		<i>Some Principal Subdivisions</i>	<i>Afferent</i>	<i>Efferent</i>
Medial pallium = archipallium (becomes allocortex)	Hippocampal formation	Hippocampal gyrus Dentate gyrus Subiculum	Olfactory cortex, entorhinal, septal Midbrain (catecholamine areas)	Hypothalamus-mammillary body (via fornix) Thalamus, anterior, intralaminar Midbrain reticular formation Septal cortex
Lateral pallium = paleopallium (becomes allocortex or transitional cortex)	Olfactory cortex Septum Pyriform cortex	Olfactory tubercle Septal area Entorhinal area Prepyriform area Periamygdaloid area	Olfactory bulb Hippocampus Amygdala Midbrain reticular formation	Temporal cortex Frontal cortex Amygdala Thalamus Habenula Hypothalamus Midbrain reticular formation Hippocampus

Neopallium (becomes isocortex; some transitional)	Occipital cortex Temporal cortex Parietal cortex Frontal cortex	Primary sensory areas, 1, 2, 3, 17, 41, 42, 43 Secondary sensory areas, 18, 19; others not corre- sponding with cytoarchi- tectonic areas Primary motor, area 4 Premotor, area 6 Supplementary motor area Frontal eye fields Occipital, temporal, parietal, prefrontal association areas	Thalamus, relay nuclei Thalamus, association nuclei Thalamus, diffuse pro- jection nuclei Amygdala Hypothalamus	Thalamus Striatum Tectum Midbrain reticular formation Red nucleus Substantia nigra Pontine nuclei Bulb, motor nuclei Cord, motor centers
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number of findings suggest that hippocampal stimulation, depending on the physiological state at the time, may have a facilitatory or inhibitory effect on adrenocorticotrophic hormone release (if not other hormone and peptide release as well), cardiovascular reflexes, and visceral responsiveness.

The role of the striatal complex in these behaviors is still to be clarified, but work in MacLean's [29] laboratories suggests an important role in many basic, genetically constituted forms of behavior as well, perhaps, as in neural mechanisms associated with compulsive, repetitious, ritualistic, deceptive, and imitative behaviors. Olds [37] discusses many of these brain sites as having a primary involvement with reward and drive behaviors as well. The behavioral and autonomic controls exercised by the visceral brain and the hormone systems appear inextricably linked to the amine transmitter system.

The decisions necessary for carrying out purposeful behavior are directly involved with our perceptions, and hence with fairly specific brain sites. It has traditionally been assumed that our voluntary activities are directed by the cortex. However, all visceral regulation (appetitive in starting and satiative in stopping) is controlled from the brainstem reticular formation. Livingston [26], moreover, now suggests that another part of the reticular formation in the ventral cephalic brainstem is the regulating site for somatic "go/no go" decisions. He believes that "it is probably the same station that is involved in unconscious as well as conscious release of behavior, hence governing go/no go for all somatic behavior." He goes on to say that "the apparatus we have designated go/no go is conceived to act on the basis of a convergent flow of information relating to internal feeling states, contexts respecting optional behaviors, the momentary flux of purposes and expectations, and the weighted average of past experiences, unconsciously as well as consciously evaluated" [26].

Although no studies (even of brain injuries or stimulation) have been able unequivocally to localize brain events occurring in cognitive processing, the so-called split-brain observations in animals and man strongly suggest that a great deal of perceptual processing occurs in the cerebral hemispheres. It has been found in both experimental and surgical (as an attempt to control intractable epilepsy) cases with severance of the major cerebral commissures (commissurotomy) that two distinctive modes of perception can exist with complementary specializations in the two sides of the brain (see Figure 1.3) [7,42]. Table 1.5 is a brief summary of some essential differences between the two sides. As summarized by Livingston:

It appears that the two hemispheres have some degree of specialization for memory storage and perceptual discrimination that is evident when the two

hemispheres are separated or are put into opposition with one another. The left hemisphere has to do with analysis, logic, language, mathematics in sequential operations. The right hemisphere performs holistic, synthetic, syncretic operations dealing with music, form, pattern, perceptions-as-a-whole . . . Interference between the two hemispheric projections appears to be the rule when the commissures are intact. Even though there is a conspicuous degree of hemispheric specialization, the normal human brain performs best as a single-channel system. [26]

Recent studies of this nature bring to mind the fact that it was impossible to begin to establish specific brain-behavior interrelations prior to the carrying out of experiments on unanesthetized animals. Following the now classic work of Magoun, Moruzzi, and their colleagues [31] on the reticular activating system (the activity of which cannot be studied in the anesthetized brain), it became clear that the totality of ascending impulses in the central nervous system was more than simply responses traveling up the classical sensory pathways. The additional extra-classical pathways still are not completely clear, but the concept is of importance in sensory and perceptual processing, both in the waking and sleeping brain. It is clear now that the cortex is neither the first nor the last level in sensory processing. Complex events apparently occur at levels along both the ascending and descending pathways that are involved in perception in the waking brain. As Livingston visualizes it:

This is what one might introspectively expect would take place within the waking brain: a reduction of data from the assaulting avalanche of stimuli impinging on sensory receptors, a modification of this input in accordance with stable central images, and an organization of prognostications for behavior based on past experiences, expectations and purposes. Part of these transformations are accounted for through activity of centrifugal sensory control mechanisms. The brainstem reticular formation contributes not only to the maintenance of consciousness, but also, in its role as an additional descending control of ascending sensory input, to the contents of consciousness [26:94].

What is the situation in the sleeping brain? A basic issue has been consideration as to whether sleep is an active or a passive process. Early investigation seemed to support the passive role. The observations of Moruzzi and Magoun [31] and of Bremer [1] indicated that sleep is the consequence of a passive turnoff of sensory systems, made possible by changes in functional activity of the reticular activating system. Somewhat later Moruzzi described sleep as a deafferentation of the brain.

Certain experimental findings did not totally fit this picture, however. For example, Hess [14] showed that electrical stimulation of certain diencephalic areas (e.g., thalamus, massa intermedia) induced sleeping in cats. This would support not a passive state but a state of active inhibition

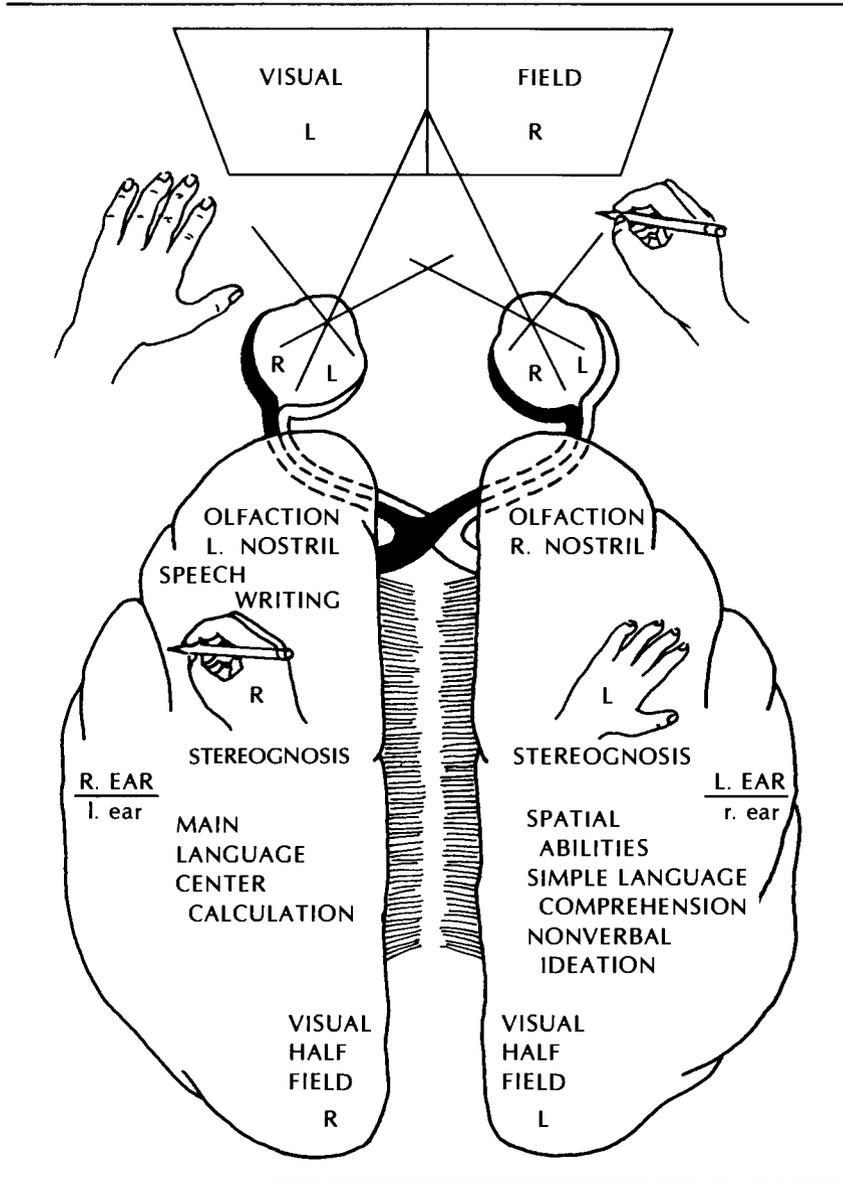


Figure 1.3

Functional specialization in surgically separated cerebral hemispheres in man. Brain commissurotomy has been performed for the relief of severe intractable epilepsy. Careful testing shows that each hemisphere can function independently for certain positive operations and can act in opposition to the other hemisphere to reveal response dominance. The large corpus callosum is sectioned in its entirety, including, presumably, the hippocampal commissure. The massa intermedia of the thalamus, when present, and the anterior commissure are also severed. Each disconnected hemisphere retains a full set of cortical and subcortical connections, except for the severed interhemispheric connections. Normal perceptual transfer between hemispheres is lacking: objects seen in the contralateral visual field or identified by the contralateral hand, and even odors identified through one (the ipsilateral) nostril are not recognized or remembered by the uninformed hemisphere. In general, the left hemisphere provides the main language center, including auditory and visual imagery relating to language, and motor commands relating to speech and writing. The left hemisphere deals with calculation, analytical functions, serial ordering, and logical thought processes. The right hemisphere is more competent than the left in regard to spatial perception, recognition by palpation of three-dimensional objects, non-verbal forms of ideation, and the recollection and recognition of faces, paintings, and maps. Visualization and memory storage in the right hemisphere is ordinarily related to the object as a whole. Some simple stereotypical gestural language is also stored and controlled in the right hemisphere. From R. B. Livingston. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976. Adapted from Sperry.

as the cause of sleep. Numerous other studies have supported this point of view. There are both electrophysiological and behavioral differences between REM* (rapid-eye-movement) and NREM (non-REM) sleep. The stages of sleep are depicted in Figure 1.4. NREM sleep primarily involves the cortex and occurs consequent to cortical inhibition of the reticular ac-

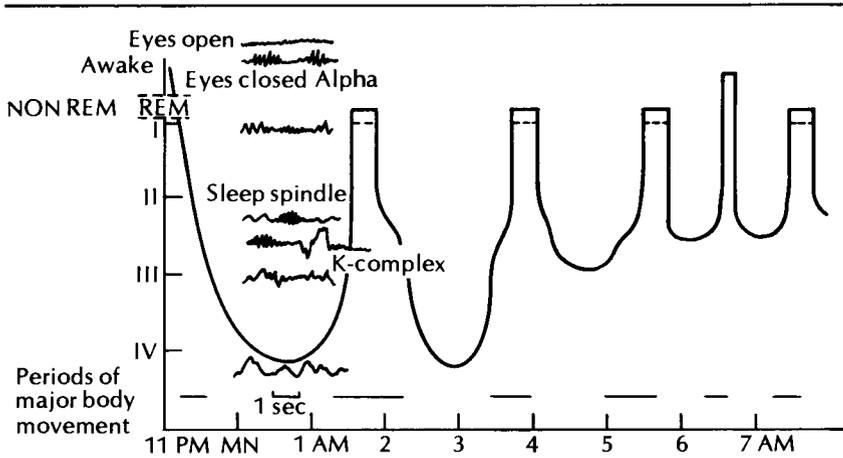
*The period in which most sleep dreaming occurs; these terms are used to define parts of the so-called sleep cycle, based on electroencephalogram (EEG) and electrooculogram (EOG) recordings. The six EEG-EOG stages are 0, or W, through 4. Stage 0 is the awake state. Stage 1 sleep shows a "flat" EEG (low amplitude and mixed frequency); stage 2 shows 14–16 cycles per sec spindles and isolated high amplitude sharp waves (K-complexes); stages 3 and 4 show high voltage, slow frequency delta (1–4 cycles per sec) waves. Stage 1 sleep accompanied by REMs in EOGs is called Stage 1 REM sleep. Stage 1 without REMs and stages 2–4 collectively are called non-REM (NREM) sleep.

tivating system (telencephalic sleep); REM sleep seems to be controlled by pontine mechanisms (rhombencephalic sleep). There is further complexity. It has become necessary to differentiate between tonic and phasic sleep events. Tonic events last throughout a given time period and form

Table 1.5
DIFFERENCES BETWEEN CEREBRAL HEMISPHERES

	<i>Left</i>	<i>Right</i>
Hemisphere	<p>Dominant for speech</p> <p>Main language center; auditory and visual imagery related to language; motor commands related to speech and writing</p> <p>Deals with calculation, analytical functions, serial ordering, and logical thought processes</p>	<p>Dominant for speech in a small percentage of right-handed people</p> <p>Superior to left in discrimination and memory of spatial patterns</p> <p>More competent in regard to spatial perception, recognition by palpation of three-dimensional objects, nonverbal forms of ideation, and the recollection and recognition of faces, paintings, and maps</p> <p>Visualization and memory storage related to the object as a whole</p>
Right ear	Projects mainly into left hemisphere employed in speech	
Left ear		Projects mainly into right hemisphere; employed for discriminating music
Hippocampus	Removal induces impairment of verbal memories	Removal induces impairment of visual localization

Based on Sperry.



Stage	Percent of sleep (young adults)	Behavior	EEG
NON-REM			
1	5	Drowsy Rolling eye movements	7-10 Hz (theta-alpha) of fluctuating frequency and low voltage
2	50	Light sleep Readily aroused	3-7 Hz low voltage plus bursts of 12-14 Hz sleep spindles K-complexes
3	20	Moderately deep sleep Blood pressure reduced Heart slowed Pupils miotic Slightly depressed monosynaptic reflexes	1-2 Hz (delta) waves of high voltage, few sleep spindles
4		Deep sleep	1-2 Hz (delta) waves of high voltage
In addition, the REM state is characterized by:			
REM	25	Bursts of eye movement Increased and irregular autonomic activity	Low voltage fast activity

Figure 1.4
 Stages of sleep. Above: The progression of stages of non-REM and REM sleep in a young adult human. The EEG characteristic of stages 1 through 4 of non-REM sleep is shown. Below: The states of sleep with their incidence and characteristics. From *Medical Neurobiology*, 2nd Ed. W. D. Willis, Jr., and R. G. Grossman. C. V. Mosby, St. Louis, 1977.

the background for a particular state. The phasic events are short lasting and may occur periodically or intermittently (e.g., K-complexes are phasic events of NREM sleep; eye movements and muscle twitches, are phasic events of REM sleep). Other physiological findings add still more to the difficulty of the problem: neurons in the same area of the brain may respond differentially at different times of the sleep cycle; interactions of brain areas occur; some neurons fire at a faster frequency during sleep than in the waking state.

It is clear that the preponderance of evidence forces the conclusion that sleep is the result of active brain processes. A good deal of recent neurochemical investigation also supports this view. A number of substances purported to be neurotransmitters (acetylcholine and the biogenic amines serotonin, norepinephrine, and dopamine) may have an important functional role to play in the induction and maintenance of sleep [19].

We do not yet know the purpose of sleep, but a number of interesting hypotheses are being considered:

- 1 Sleep may act as a synchronizer of certain biological rhythms; among them may be those related to hypothalamic-pituitary neuroendocrine function. The episodic release of prolactin, for example, appears to be sleep dependent.
- 2 It has been suggested that REM sleep has an arousal, or sentinel, function, serving to arouse the organism periodically from a defenseless state in which it is vulnerable to attack. Koella [24] has found that arousal thresholds for irrelevant stimuli are highest during REM sleep, but those for relevant stimuli are lowest during the same period.
- 3 Investigators studying sleep in newborn infants maintain that REM sleep provides endogenous stimulation to the developing nervous system. (What then is its function in adult life?)
- 4 Numerous hypotheses dealing with the psychological aspects of sleep: during REM sleep instinctual drives are released in a relatively benign way; REM sleep serves to destroy irrelevant information to allow for the input of new information the following day; sleep in general promotes the formation of engrams; REM sleep promotes the consolidation of useful memories; and REM sleep play a role in intellectual functioning.

As Karacan et al. [21] point out:

None of these hypotheses has been generated by *all* of the current data about sleep, and in them there is a notable failure to incorporate information concerning the mechanisms and correlates of both REM and NREM sleep. Nor

are data about the dynamic aspects of sleep within the night, within the circadian cycle, and over the lifetime given their due. The theorizing of Hartmann (1973) [11] comes closest to meeting our criticisms. Hartmann suggests that NREM sleep, and specifically slow-wave sleep, is an anabolic phase of sleep during which protein and/or RNA macromolecules are synthesized. This anabolism serves both to restore products depleted during all the activities that produce "tiredness" (catabolism) and to provide macromolecules which are used during REM sleep. During REM sleep, systems related to "feedback-interactive self-guidance" (i.e., systems of focused attention, patterning, and homeostatic adaptation to environmental stimuli) are restored, by means of restoration of adequate conditions in catecholaminergic systems and their cortical endings [21].

This theory would furnish a role for sleep in a particular aspect of sensory information processing. Most recently Jouvet [19] has proposed that the serotonin-containing neurons of the raphe system are involved in the induction of slow-wave sleep and in the priming of paradoxical (REM) sleep. In his view the sleep-waking cycle is regulated by two antagonistic systems of neurons: the serotonin-containing neurons for sleep and the catecholaminergic (and possibly the cholinergic) neurons for waking and REM sleep.

Visceral and somatic sensory information have been considered thus far relative to their processing in the brain itself. The form and content of such information, however, have already been determined to a large extent by the events occurring during their passage from peripheral receptors through a series of junctional transduction points, both peripheral and central. Figure 1.5 gives a schematic idea of ascending sensory pathways and specific way stations involved. The transduction points are the synapses; the basic interneuronal communication structures at and across which the primary neural events occur. These units are involved in many ways in sensory and perceptual processing (storage, feedback and feedforward controls, coding, transmission, etc.). It is essential, however, to note their role in central control of sensory events (Figures 1.5 and 1.6).

SYNAPSES AND TRANSMISSION

In the nervous system, all information processing (e.g., adaptive activity) is the consequence of a dynamic equilibrium of excitation and inhibition within and between neuronal systems and subsystems. Most of the communication between receptors and neurons, between neurons themselves, and between neurons and effectors results from the extracellular release of substances that interact with special areas of cell membranes, leading to either excitation or inhibition.

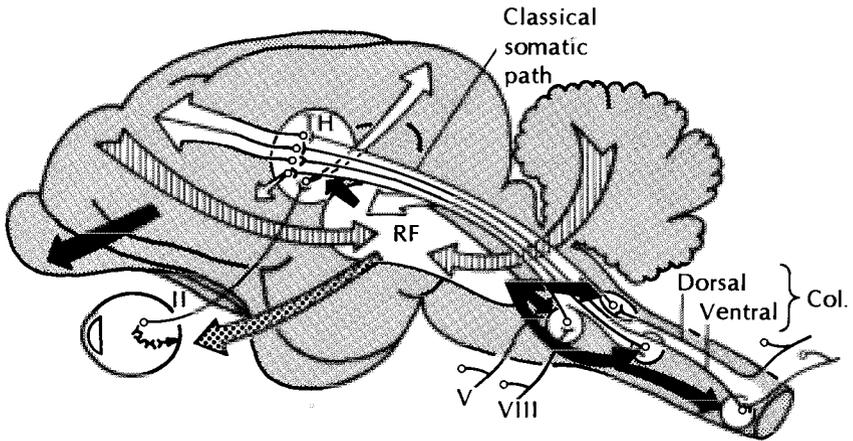


Figure 1.5

Central control of sensory receptors and central sensory transmission. An overall scheme of brain modulating its own input is illustrated. Certain regions of the neocortex, the frontal lobe of the cerebellum, and the phylogenetically ancient limbic cortex can strongly influence conduction in the extraclassic ascending sensory pathways coursing through the central cephalic reticular formation, shown by cerebral and cerebellar dotted arrows. The reticular formation can in turn (*black arrows*) inhibit olfactory relay in the olfactory bulb, somatosensory relay in the dorsal and ventral columns, and trigeminal relays, as well as auditory and vestibular relays. The reticular formation can also inhibit the relay of all modalities through the thalamus, and it can both inhibit and facilitate retinal events. There appears to be a dedication to centrifugal control channels that is roughly equivalent to 10 percent of all incoming sensory ascending fibers. The full biological significance with respect to sensory signal processing and perception of this centrifugal control mechanism is only beginning to be understood. The fact of its existence in so many species and its power to modulate input is evidence for its evolutionary value. An important fact is that such influences may take place prior to the raw sensory data having access to mechanisms that are presumably available to consciousness. Central sensory control can thus offer preconscious modification of perceptual experience. From R. B. Livingston. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976. Adapted from Sperry. (p. 31)

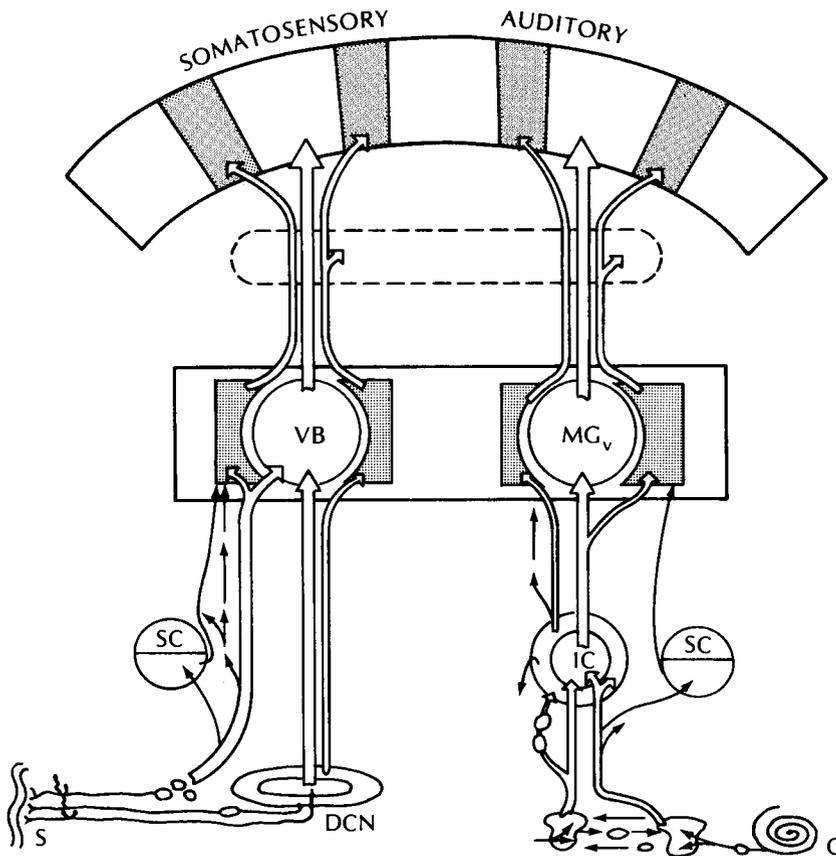


Figure 1.6

Ascending somatic sensory and auditory pathways schematized. Peripheral receptors and other elements of the somatosensory (S, skin) and auditory (C, cochlear) systems are depicted at the bottom, with ascending projections rising through spinal, brain-stem, and thalamic relays to neocortex. Somatic fibers travel upward along two main paths, spinothalamic on the left, with some ascending polysynaptic spinal relays coursing through the reticular formation and superior colliculus with the more direct and discrete dorsal column, medial lemniscal pathway on the right. Both of these ascending pathways relay to the cortex by way of the ventrobasal thalamus (VB) and via associated intralaminar and reticular nuclei of the thalamus and the pulvinar posterior associative thalamic relay systems (stippled). Thence projections pass to the somatosensory cortex (clear) and

Figure 1.6 continued

adjoining association areas of neocortex (stippled). The ascending auditory pathway has greater bilaterality of projection stemming from two-way commissural paths in the medulla. It has ascending relays mainly via the inferior colliculus (IC) (and, in lesser part, also by way of the superior colliculus (SC), thence to the medial geniculate body (MG_v) and onto the classic auditory area in neocortex. There are other more diffusely projecting and pulvinar associative relays for acoustic signals which are projected into primary auditory cortex (clear) and proximal association areas of neocortex (stippled). Influences on basal ganglia motor mechanisms are indicated by the projections to the dotted oval below the cortex. Not shown are the somatosensory and auditory descending corticofugal projections which course downward in an approximately parallel stream of projections to influence each of the layers of ascending relays and also many of the peripheral receptors. The descending sensory control system constitutes approximately 10 percent of the number of channels contained in the ascending system. From R. B. Livingston. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976. Adapted from Sperry. (p. 31)

The junction points between cells (or in some cases, cell processes) are the synapses. The synaptic region (or synaptosome) includes the pre-synaptic ending, the synaptic cleft about 2–300 Å across, and a specialized part of the postsynaptic membrane. The functional process starts after a stimulus as a wave of depolarization that sweeps down the axon and initiates processes culminating in the release of a discrete amount (*quantum*) of chemical transmitter from the presynaptic terminal into the synaptic space. (For an interesting discussion of how the electrical events of the action potential initiate the secretion of transmitter, etc., see E. Kandel, *Cellular Basis of Behavior* [20]). The transmitter diffuses across the cleft and binds to specific receptor sites on the postsynaptic membrane. This binding is presumed to cause molecular alterations of the membrane with accompanying changes in ion permeabilities. The ensuing ionic movements (fluxes) alter the membrane potential of the postsynaptic neuron so as to produce either inhibition or excitation. The action of the transmitter substance is terminated either by its destruction (i.e., by an enzyme) or by active uptake into the neuronal elements surrounding the synaptic space.

Such chemical synapses are functionally unidirectional. In the pre-synaptic terminal are small vesicles of varying shape and size, which may contain different fillings. It appears that, for the most part, the filling consists of transmitter molecules. The vesicles play a major role in the storage and release of the transmitter.

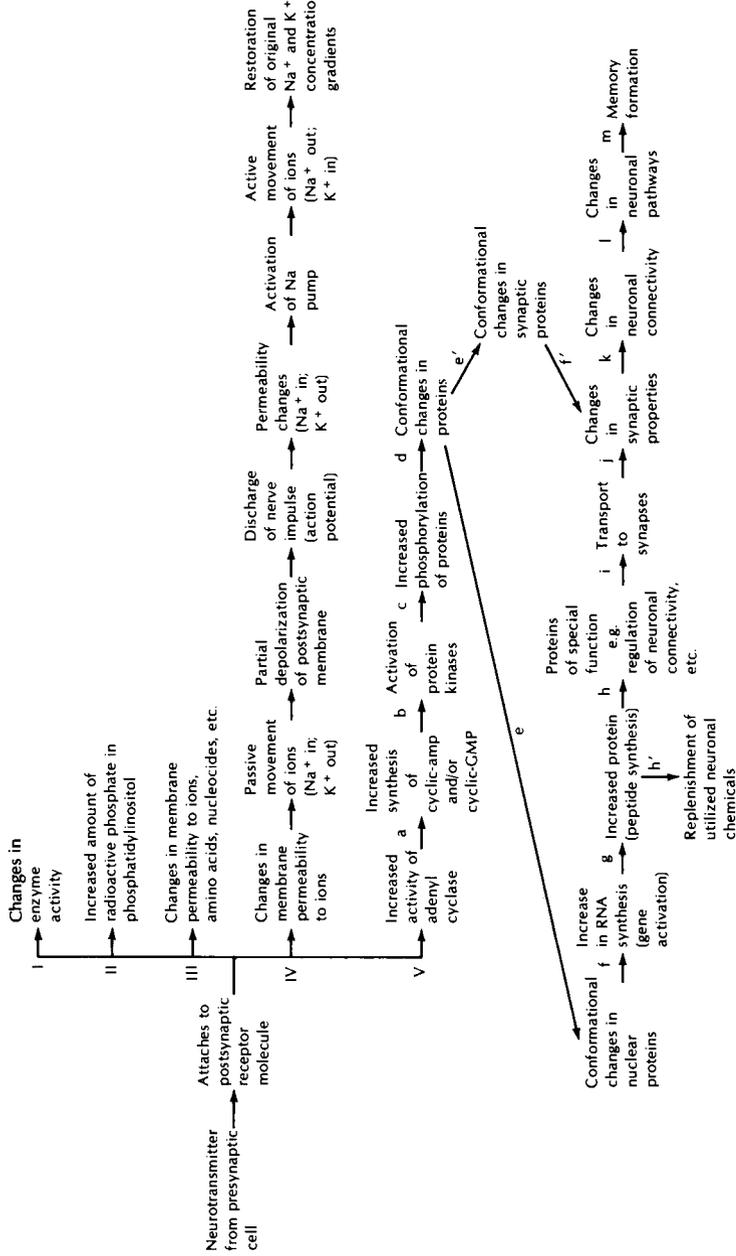


Figure 1.7
Some chemical events that follow the attachment of a neurotransmitter to a neuron. From Glassman [8].

It is now clear that a remarkable series of events are triggered by the attachment of a transmitter to the postsynaptic receptor. Figure 1.7 [8] is a reconstruction of some of these events. Sequence IV shows the changes in the generation of the action potential of the cell, involving temporary changes in membrane permeability to ions. There are, in addition, as shown in sequence III, changes in permeability to other ions, amino acids, nucleosides, and so forth. Sequence V calls attention to chemical events that may underlie the molecular control of neuronal connectivity. The activation of protein kinases by cyclic AMP or cyclic GMP (step b) eventually leads to conformational changes in proteins (step d) via their phosphorylation (step c). If the conformational changes take place in synaptic proteins, (step e¹), then one can postulate rapid, direct effects on synaptic properties resulting in changes in neuronal connectivity with eventual memory formation. An alternative idea is that conformational changes take place in nuclear proteins (step e), a process that leads to gene activation, RNA synthesis, and protein synthesis (steps f and g). This protein can be involved in processes involved with replenishing the chemicals of the neuron (step h¹) or may have special neuronal functions (step h) at the synapse (step j¹) where it regulates synaptic properties, such as connectivity (steps k, l, and m). It is possible that during training, conformational changes in synaptic proteins occur rapidly to change temporarily connectivity associated with the formation of short-term memory, but that the events following conformational changes in the nuclear proteins are necessary for the permanent connectivity changes that underlie the formation of long-term memory.

The ion that currently appears to be most essential for transmitter release is calcium, which normally is found in higher concentration outside the cell than inside. As the vertebrate nerve-muscle synapse, it was found that the inward movement of calcium (Ca^{++}) is an important link between depolarization of the nerve terminal and the release of acetylcholine [22]. This has also been shown to be true in relation to both facilitated and conditioned electrical responses in the cat cortex. The inward movement of Ca^{++} has also been demonstrated most cleverly by Llinás and Nicholson using aequorin, a protein that fluoresces in the presence of Ca^{++} . When aequorin was injected into the presynaptic terminals of the squid giant synapse, presynaptic stimulation led to increased fluorescence. Katz and Miledi [22] suggested a hypothesis designed to relate a Ca^{++} influx to quantal release of transmitter. They postulate that Ca^{++} facilitates the mobilization of vesicles into release sites. The series of steps involved begins when the depolarization of the terminal by the action potential opens up channels to Ca^{++} ions, which move down their concentration gradient into the cell. This internal Ca^{++} moves to critical release sites where it facilitates fusion of the vesicular membrane with the presynaptic terminal membrane, leading to increased release of quantal packets of transmitter. Thus the membrane potential controls transmitter release by

controlling Ca^{++} conductance. Recent work with the electron microscope has shown the actual fusion of the two membranes. A rupture of the membranes then occurs, during which the vesicular contents are extruded actively into the synaptic cleft (this process is termed exocytosis).

Neurons synthesize and release a variety of substances believed to function as transmitters (see Table 1.6 for some of the most frequently discussed substances). Cells that synthesize one transmitter are presumed to release only that transmitter. Nonetheless only about a dozen substances are thought to function in this way in neural tissue. These substances are unevenly distributed through the nervous system and can either excite or inhibit neurons. More is known about many of these low molecular weight substances than about the chemical properties of receptor molecules (Figure 1.8). The evidence indicates that there are about 12,000 to 30,000 acetylcholine (ACh) binding sites per μm^2 in regions of the post-synaptic cell that have the highest transmitter sensitivity. It is still not known definitively how the receptor molecule's recognition and binding of the transmitter is related to its control of ion permeability. Many investigators think that recognition and binding can be ascribed to a receptor site and ionic permeability to an ionophore.

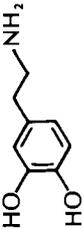
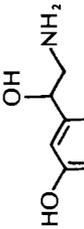
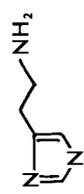
The same transmitter may have different roles in different species or at different synapses in the same species. The transmitter effects apparently are dependent on the nature of the postsynaptic receptors. It is helpful to understand the criteria by which a substance is presumed to be a transmitter. It is generally accepted that the substance should be collectible from a synapse after the presynaptic neuron has fired. It is also necessary to show that the actions it produces in the postsynaptic unit are the same as those provoked by the normally released transmitter. The amount of the transmitter collectible from the synapse is quantitatively related to the firing frequency and the extracellular concentration of calcium ions. The substance must also bind to the same receptor as the normally released transmitter and induce permeability changes to the same ions.

The metabolic consequences of the postsynaptic effects of transmitters are thought to be carried out by effects on the levels of so-called second messengers, the cyclic nucleotides. Changes in these levels lead to a triggering or cessation of chains of intracellular reactions, including the transcription of genetic information by RNA and the translation of messages carried in the RNA to form specific proteins.

Synaptic malfunction would result if there were no way to remove or inactivate the transmitter after its job is done. Several mechanisms appear to exist for this purpose (mechanisms of particular importance relative to the action of psychopharmacological and other drugs):

- 1 Inactivation by an enzyme. Acetylcholine is the only transmitter known to be inactivated in this way.

Table 1.6
STRUCTURE AND METABOLISM OF COMMON TRANSMITTER CANDIDATES

Compound	Structure	Synthesis	Inactivation
Acetylcholine (ACh)	$\text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-(\text{CH}_2)_2\overset{+}{\text{N}}(\text{CH}_3)_3$	Choline acetylation	Hydrolysis by AChE
Dopamine		Tyrosine hydroxylation, dopa decarboxylation	Reuptake, MAO, COMT
Norepinephrine		Dopamine- β -hydroxylation	Reuptake, oxidative deamination by MAO, 3-O-methylation by COMT
5-Hydroxytryptamine (5-HT), or serotonin		Tryptophan hydroxylation, 5-OH-tryptophan, decarboxylation	Reuptake, MAO
Histamine		Histidine decarboxylation	N-methylation by histamine-N-methyl transferase; oxidative deamination (MAO ?)
Excitatory amino acids, e.g., glutamate, aspartate	$\begin{array}{c} \text{CH}_2(\text{CH}_2)_n \\ \\ \text{COOH} \end{array} \begin{array}{c} \text{CH NH}_2 \\ \\ \text{COOH} \end{array}$ $n = 0 - 1$		Reuptake, decarboxylation, NH_3 fixation
Inhibitory amino acids, e.g., GABA, glycine	$\begin{array}{c} \text{CH}_2(\text{CH}_2)_n \\ \\ \text{COOH} \end{array} \text{NH}_2$ $n = 0 - 4$	GABA by glutamate decarboxylation	GABA — reuptake transamination and oxidation to succinate

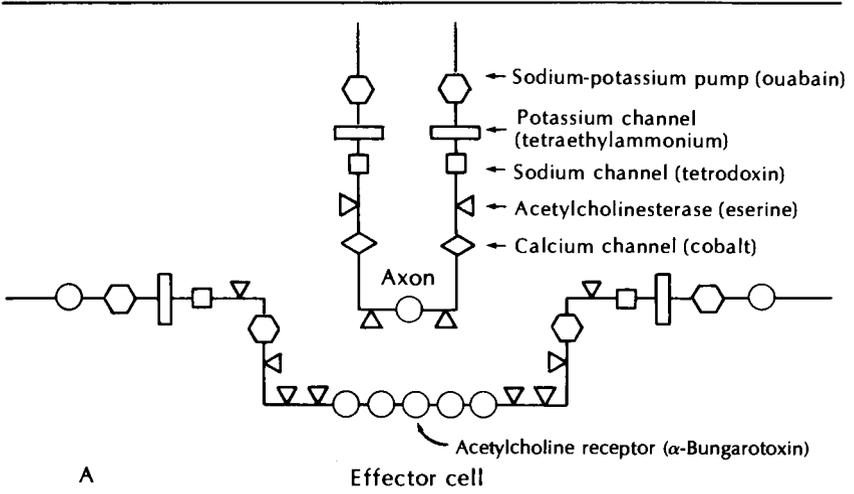
From "Synaptic Transmission." V. B. Mountcastle and R. J. Baldessarini. In *Medical Physiology*, 13th ed., ed. V. B. Mountcastle. C. V. Mosby, St. Louis, 1974.

- 2 Removal of transmitter from the synaptic space by regions of the presynaptic and postsynaptic membranes, as well as those of glial cells. This mechanism is referred to as a *reuptake* system. It is thought, for example, that drugs such as the tricyclics (used in the therapy of depression) act by blocking reuptake of norepinephrine.
- 3 Some investigation has also suggested a carrier-mediated model for transmitter transport which is dependent on Na^+ fluxes and concentrations inside and outside the neuron. In this case the transmitter is, in a sense, 'bound' to the Na^+ and moves with it. As the Na^+ moves into the cell, the transmitter is also moved in and dissociates from the carrier when intraneuronal. It is then available for mitochondrial metabolism.

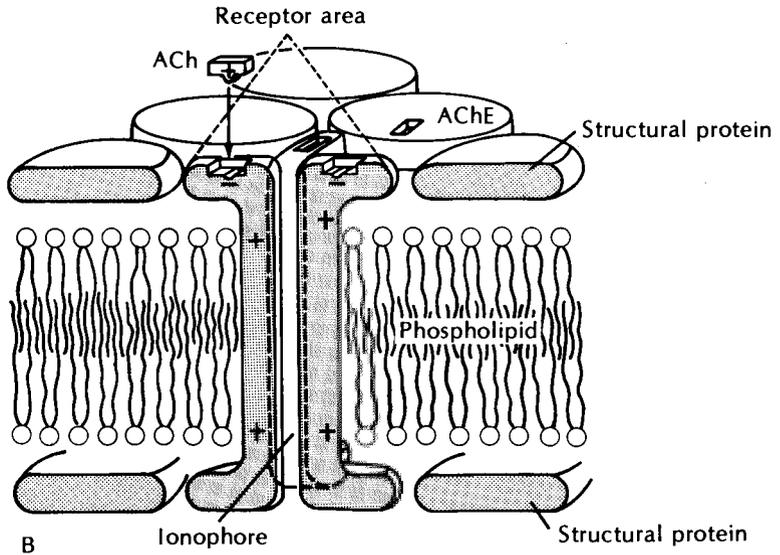
Other nontransmitter molecules—including, for example, substances released into the synapse along with the transmitter or hormones released far away—may act to modulate synaptic activity through interaction with specialized regions of the postsynaptic membrane. For example, prostaglandin PGE (the prostaglandins as a group are regarded as modulators or regulators of many processes involved with stimulus secretion) has been found to block the inhibitory action of norepinephrine on cerebellar Purkinje cells, although it has no postsynaptic effect when norepinephrine is not present. It has been suggested that endogenous PGE₂ released from the postsynaptic ending membrane inhibits the release of norepinephrine from presynaptic terminals (a negative feedback control). The release of PGE₂ from adrenergic pathways in the central nervous system also may have a regulatory role in transmitter release.

Recent work indicates that a number of polypeptide hormones released normally from the hypothalamus (involved with anterior pituitary hormone secretion) may modulate central synaptic activity. Since 1976, a number of substances in the brain have been found to have special regulatory and modulatory properties. These include the so-called enkephalins and endorphins, subjects of widespread current research effort because of their possible involvement in addiction, sensation, and emotion.

Although this discussion has dealt largely with "a synapse" it must be kept in mind that the mechanisms involved in behavior are multiplied enormously by the presence of thousands of excitatory and inhibitory synapses on the somata and processes of brain neurons. As a result, when the whole system is in operation, the concepts of excitation or inhibition become more difficult to clarify. The overall effect of inhibition at the synaptic level may be, for example, either inhibition or excitation. That is, inhibition of inhibitory neurons can lead to disinhibition or excitation; inhibition of excitatory neurons may lead to inhibition unless they are ex-



A



B

citing inhibitory neurons, in which case disinhibition may result. Most major activity in vast areas of the brain such as the cortex is not highly localized or discrete but occurs as spreading temporospatially organized waves affecting large numbers of synaptic systems. Such considerations begin to allow a glimpse into the complexity of this remarkable structure.

Let us now look somewhat further into the role of some of these so-called transmitters in the brain. Only brief reference will be made to acetylcholine since current interest in psychiatric therapy is more concerned with the biogenic amines. There appear to be only three cholinergic synaptic systems in the central nervous system:

- 1 Spinal cord motor axons send excitatory branches to closely situated neurons called Renshaw cells. Discharges from the latter inhibit the same and other motor axons.
- 2 Fibers from the septal region form cholinergic synapses with hippocampal neurons.
- 3 It appears that the diffuse arousal systems coming to the neocortex from the tegmental reticular formation, hypothalamus, striatum, and septum are primarily cholinergic.

It is possible that one of the major functional systems is based not on the action of acetylcholine alone but on its interaction with catecholamines. Numerous examples of such interaction are beginning to appear. Not the least of these involves the suggestion that under certain conditions after acetylcholine has been released into the synaptic cleft, it is reuptaken into the presynaptic terminal with the ensuing release of norepinephrine.

Figure 1.8

A, Specific macromolecules that can be identified in the surface membranes of the presynaptic terminal and postsynaptic cell at a cholinergic synapse. Each of these molecules can be bound by a specific blocking agent, indicated in parentheses. From A. Karlin, unpublished. *B*, Macromolecular organization of the surface membrane of the postsynaptic receptor area. The basic structure of the nonsynaptic membrane is a biomolecular leaflet of phospholipid molecules that is stabilized by structural proteins. Enzymes, receptor sites, and other protein molecules are applied to either the inner or outer surfaces. Other protein molecules, such as the channels for Na^+ , K^+ , and Ca^{++} , penetrate the entire lipid plane of the membrane. The synaptic channel is controlled by receptor sites for ACh. From E. de Robertis, *Science* 171:963-971. Copyright © by the American Association for the Advancement of Science.

From a psychopharmacological and behavioral point of view, it appears that the putative transmitters of greatest interest are the catecholamines, norepinephrine and dopamine, and the indolamine serotonin. Their localization in specific brain tracts has been determined by histochemical fluorescence (Figure 1.9). All the cell bodies are in the brainstem with ascending and descending axons spreading up into the brain and down into the spinal cord.

The cell bodies of norepinephrine neurons are found scattered in clusters through the reticular formation (medulla, pons, and midbrain). They include almost all the cells of the locus coeruleus. Their fibers ascend in the medial forebrain bundle running up to the hypothalamus, limbic system, cerebellum, and cerebral cortex. These fibers form two primary bundles, one from the locus coeruleus to the cerebellum, hippocampus, and cortex and the other from brainstem neurons to the hypothalamus and limbic system.

Serotonin-containing cells are found in the so-called raphe nuclei. Their fibers, too, ascend in the medial forebrain bundle, primarily to the hypothalamus. Serotonin levels are low in the cortex but widely distributed.

There are three major dopaminergic tracts: from the substantia nigra (zona compacta) to the caudate nucleus and putamen (this so-called nigrostriatal tract is the one that degenerates in Parkinson's disease with subsequent decrease in dopamine and the therapeutic effectiveness of L-dopa, a dopamine precursor); fibers arising from a midbrain area A10, running to the nucleus accumbens, olfactory tubercle, and amygdala (Nauta [35] has suggested that this bundle is involved in the shift from appetitive to consumatory behavior); fibers from arcuate and *paraventricular* nuclei of the hypothalamus and terminating in a capillary plexus supplying the pituitary. Thus it is possible for dopamine to activate the release of anterior pituitary tropic hormones.

A vast amount of work has been devoted to the metabolism of these biogenic amines, work particularly essential to the clarification of the effects of drugs. Figure 1.10 shows the pathways of catecholamine synthesis, starting with tyrosine in the ordinary diet. The activity of tyrosine hydroxylase determines the rate of catecholamine synthesis. Certain interesting feedback mechanisms are involved in this synthesis. Catecholamine release by drugs, for example, can cause increased catecholamine synthesis by stimulating hydroxylation of tyrosine without increasing tyrosine hydroxylase. Varying activity of norepinephrine synapses can alter norepinephrine synthesis. Drugs that block adrenergic receptors increase the formation of norepinephrine from tyrosine. As Snyder [46] has pointed out, drugs such as haloperidol, which blocks dopa-

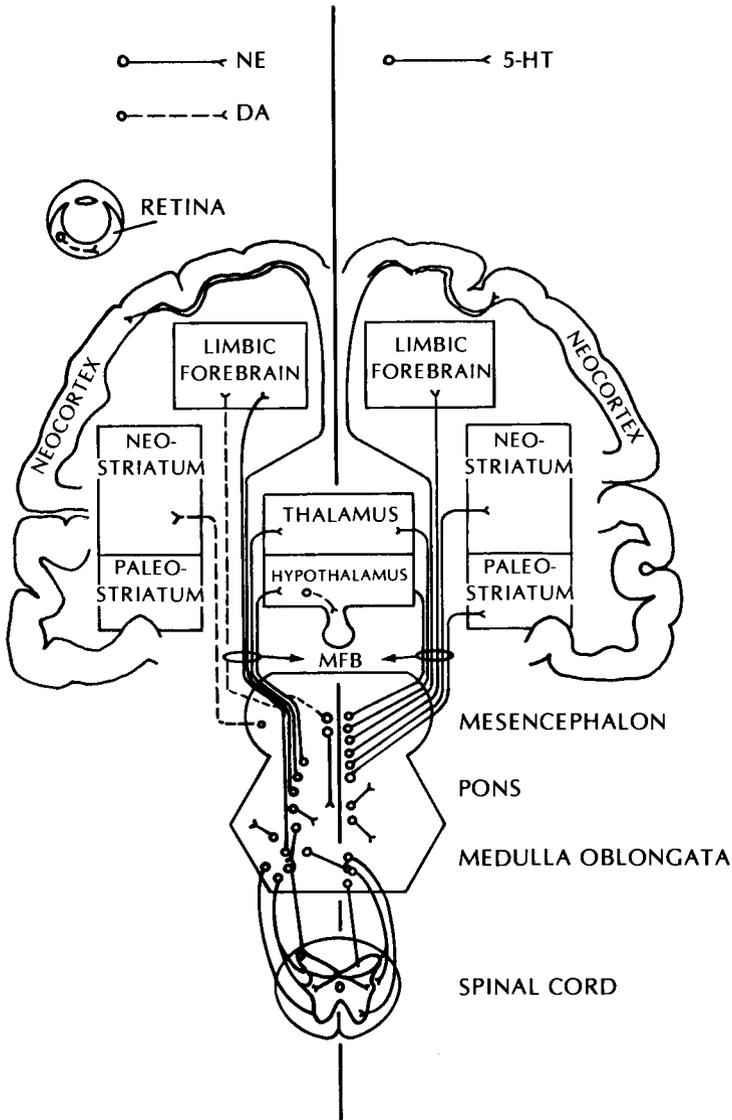


Figure 1.9
Pathways of the monoamine tracts in the brain.

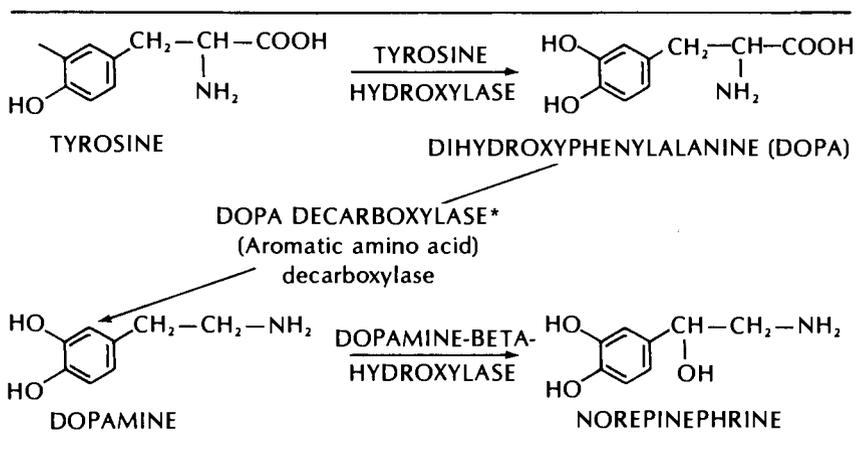


Figure 1.10

Pathways of catecholamine synthesis and decarboxylates 5-hydroxytryptophan, the serotonin precursor. From Snyder [46].

mine receptors, and others like apomorphine, which stimulates those receptors, respectively enhance and depress the synthesis of dopamine.

Figure 1.11 shows the pathways of catecholamine degradation. Most of the current evidence indicates that the aldehyde formed from dopamine is oxidized to homovanillic acid (HVA). Levels of HVA can be measured in the brain or cerebrospinal fluid and are presumed to reflect the activity of dopaminergic neurons (these levels are very low in patients with parkinsonism).

Numerous events are postulated to occur at catecholamine synapses (Figure 1.12). The major mechanism for catecholamine inactivation is reuptake into the presynaptic terminals. Catecholamine uptake can occur at the membrane of neuron bodies, axons, or terminals. Storage takes place in synaptic vesicles. The storage process is disrupted by reserpine, which has no effect on the membrane transport; other drugs, such as imipramine, selectively inhibit membrane transport.

Figure 1.13 shows the metabolism of serotonin, not yet proved to be a transmitter but widely distributed. Its uptake system is similar to that of norepinephrine, as is its storage. Its reuptake appears to be affected similarly by drugs.

A number of other substances whose behavioral significance is still not clear are thought to have transmitter properties in the brain and/or spinal cord. Among these are γ -aminobutyric acid (GABA), glycine, glutamate, aspartate, and substance P. GABA and glycine are thought of essentially as inhibitory (although there may be a few cases in which GABA

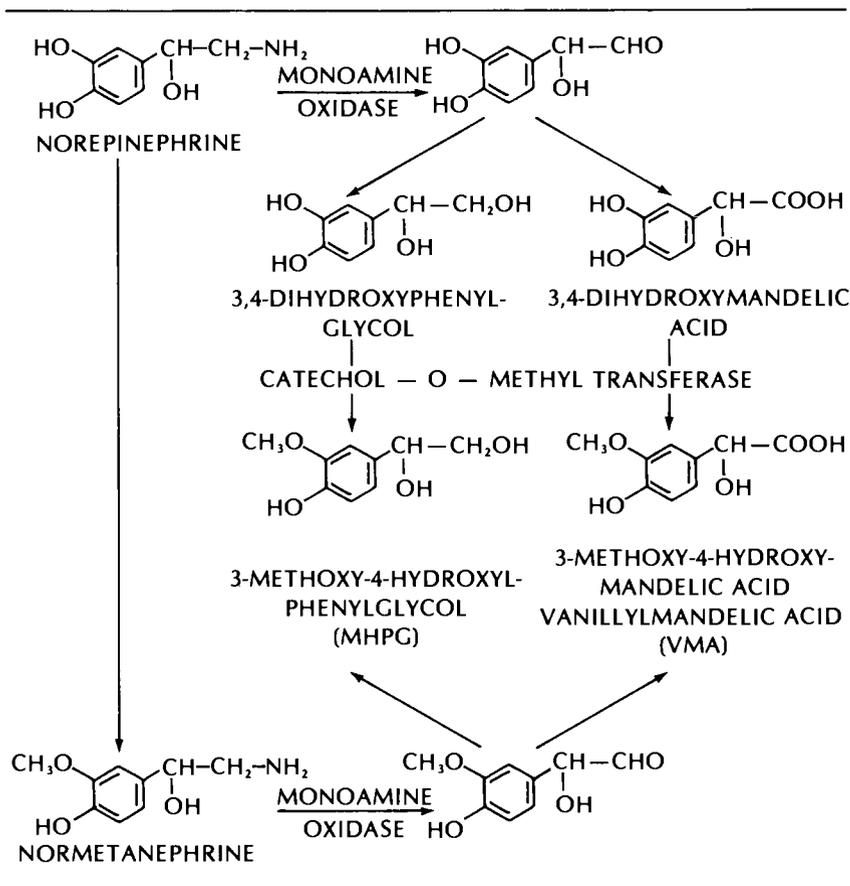


Figure 1.11 Pathways of catecholamine degradation. From Snyder [46].

is excitatory). (For an interesting discussion of these systems, see the chapter entitled "Amino Acid Transmitters" by E. Roberts and R. Hamerschlag, in *Basic Neurochemistry* [40].

Several neurotransmitters play a role in hypothalamic events, including acetylcholine and GABA, but the most important are the amines. The action time of the amines is both slower in onset and longer lasting than acetylcholine. Acetylcholine action starts in less than a millisecond and is complete in several milliseconds. Norepinephrine, however, starts in hundreds of milliseconds and acts for seconds. As Olds has pointed out, "The long time constants are of interest because drives and rewards involve processes that need to be stabilized for periods of seconds, minutes or hours, and drive cycles extend even to days" [37]. The amines seem to

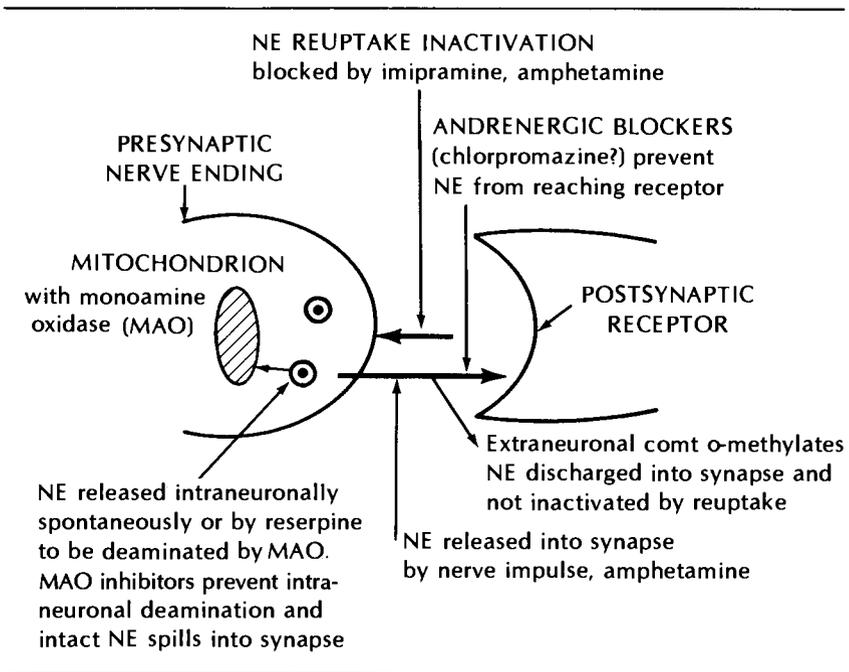


Figure 1.12
Model of postulated events at catecholamine synapses. From Snyder [46].

lie between the faster transmitters and the slower hormones. Much work on the brain amines was stimulated by the discovery of drugs useful in schizophrenia: the rauwolfia alkaloids (e.g., reserpine), the phenothiazines (e.g., chlorpromazine), and the butyrophenones. The main action of the phenothiazines and butyrophenones is to block norepinephrine and dopamine receptors in the brain. Drugs synergistically related to the amines appear to have antidepressive action.

The amines, then, have a number of special properties of particular functional interest (Figure 1.14):

- 1 Dopamine and norepinephrine have a common substrate (tyrosine), and dopamine is the precursor of norepinephrine.
- 2 The reuptake mechanism back into the terminals for either repackaging and later reuse, or oxidation if the supply is excessive.
- 3 The monoamine oxidate (MAO) providing negative feedback on the available supply.
- 4 The second messenger cyclic AMP.

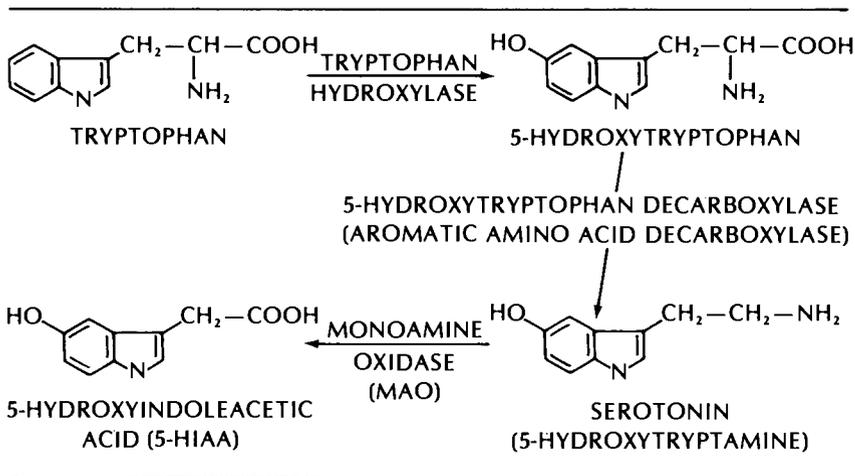


Figure 1.13
Metabolism of serotonin. From Snyder [46].

- 5 The inhibitory modulation — the amines, if put directly into the nervous system, usually have inhibitory effects.
- 6 When the same amine circulates in the brain's vascular system, it may cause excitation in the same neurons inhibited by its direct input.
- 7 The blood-brain barrier to separate circulating from brain amines.
- 8 The slow onset and long duration of action.

As Olds states, "Their properties would fit them for controlling behavioral priorities. This is because the repeating theme is competition for an 'artificially' limited resource, and all the time constants involved are in the order of magnitude of behavioral episodes rather than neurophysiological events" [37].

In his last superb review, before his recent and untimely death, James Olds [37] discussed the relationships of catecholamines to particular behaviors in some detail. Part of his discussion deals with catecholamine depressors, synergists, and the effects of catecholamine drugs on agitation, depression, and brain reward behavior (Figure 1.15). He showed that four classes of drugs depress the action of amines and particularly of catecholamines: Substances that act as receptor blockers; substances that block the peripheral actions of catecholamines; substances that inhibit synthesis; and substances that deplete the supply by releasing amines from storage.

Among the receptor blockers are chlorpromazine and haloperidol, both of which counteract psychotic agitation. They also block electrically

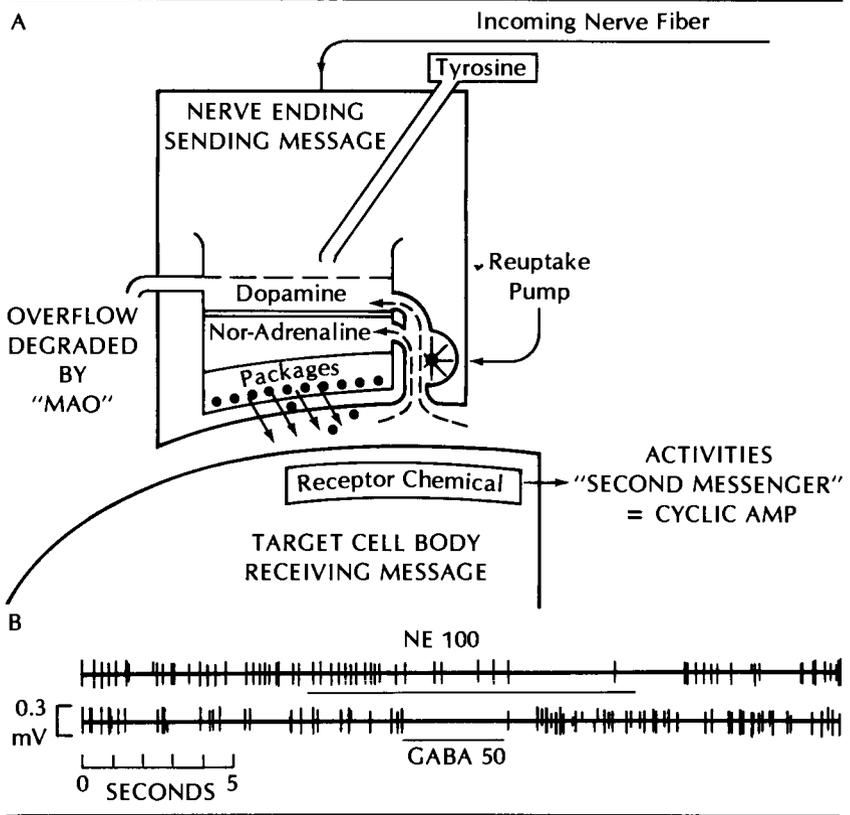


Figure 1.14

Special properties of catecholamine systems. *A*, Nerve endings. Tyrosine is the common substrate of dopamine and norepinephrine (Nor-Adrenaline), and dopamine is the direct precursor of norepinephrine (other endings use dopamine without converting it to norepinephrine). Whichever catecholamine is used is packaged in inactive "capsules" or packages. These are released from endings and the substance released from them by the incoming nerve message. They act on a receptor chemical in the target cell, and this in turn acts through a second messenger (cyclic AMP), which is a common denominator between functions of amine transmitters and peptide hormones. After use, the catecholamine is recovered by the reuptake pump for reuse. Monoamine oxidase (MAO) forms a negative feedback system to keep supplies in a brain area at a relatively constant level. *B*, Ionophoretic application of catecholamine on neurons causes inhibitory actions with slow onset and long duration, NE, norepinephrine. From J. Olds. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976.

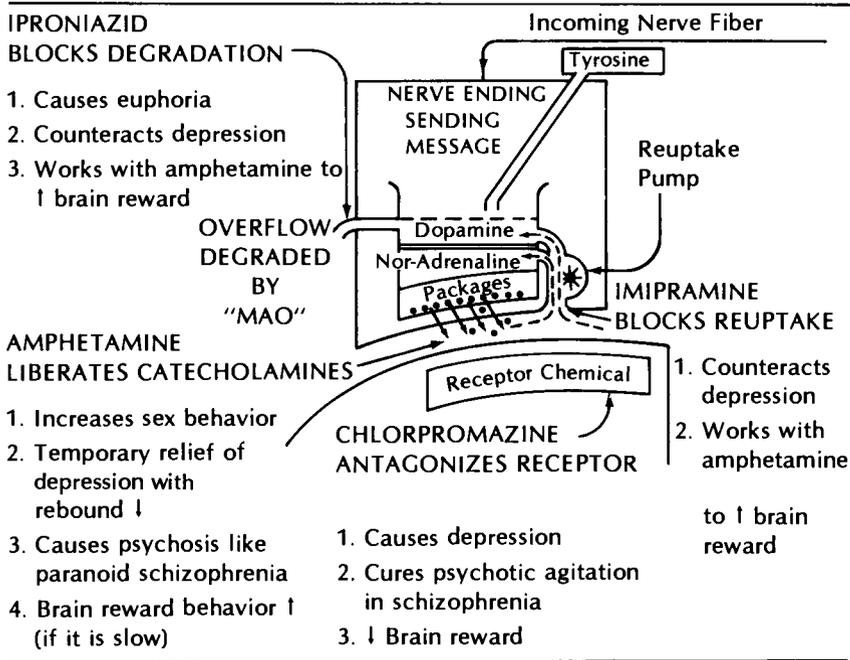


Figure 1.15
Effect of catecholamine drugs on agitation, depression, and brain reward behavior. Releasers like amphetamine temporarily countered depressions in humans and augmented self-stimulation in rats. Drugs which blocked the degradation or reuptake of the liberated amines furthered the actions of amphetamine on self-stimulation and had quite good antidepressive qualities on their own in humans. Drugs which blocked the catecholamine receptors caused depressions but were very important in controlling psychotic agitation, particularly in schizophrenia. They generally stopped brain reward behavior and other purposive behaviors. Nor-Adrenaline, norepinephrine; MAO, monoamine oxidase. From J. Olds. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976.

stimulated reward behavior in low doses and depress a number of other behaviors, including feeding, drinking, and sexual behavior (if work was required to attain these goals), and, in general, behaviors with foresightful or anticipatory character.

Of the substances that block peripheral actions, the alpha blockers block exciter action and the beta blockers inhibitor action. They do not cross the blood-brain barrier and thus have no direct action in the brain.

Examples of inhibitors of synthesis are α -methyl-*p*-tyrosine (blocks the conversion of tyrosine to dopamine) and disulfiram (blocks the forma-

tion of norepinephrine from dopamine). They both block brain reward behavior (disulfiram only incompletely).

After the release of amines from storage by such drugs as reserpine and tetrabenazine, they are degraded by oxidation. (This latter process is blocked by the MAO inhibitors.) Both of these drugs depress brain reward behavior. Reserpine originally was used widely to counteract psychotic agitation but has been replaced by chlorpromazine.

In contrast to these depressant situations are the studies of drugs that enhance amine action. Some of these are represented in Figure 1.15. Among the releasers of catecholamines is amphetamine, which prevents reuptake and may also be an MAO inhibitor. According to Olds [37], the general effect of amphetamine on behavior had certain similarities to the effect of the rewarding brain stimulation. It is well known that amphetamine treatment leads to stereotyped behavior, a compulsive type of behavior demonstrated either as a single activity performed continuously or a repertoire of a few sequences which dominate behavior. "This behavior is compulsive in the sense that it is seemingly nondistractable, driven, rapid and repetitious in character" [37:379]. An indirect linkage between dopamine and brain reward (i.e., drive or motivation) behavior was made by drugs causing repetitive behavior. Morphine, cocaine, amphetamine, and others could give rise to stereotyped behavior. Pharmacological studies linked this behavior to dopamine. Both stereotyped and brain reward behaviors often involve compulsive repetition, sometimes expressed in humans as a purposeless (paranoid) thought process.

The summary of Olds' global view of the transmitter situation relative to drives and reinforcements is most provocative:

First, stimulation and lesion studies possibly showed that a broadcast set of catecholamine fibers were reward neurons. It may be stimulation of these that caused reward behavior, and cutting them that at least temporarily suspended it. Because there were different effects of stimulation and lesions in the paths of the two catecholamines, it was suggested that one of them, norepinephrine, might be more involved in those rewards that come toward the end of a consummatory process and which carry the seeds of satiety and the demise of the drive system. The other catecholamine, dopamine, might be involved in those rewards that come at the beginning of the consummatory process (or in the promising phases of the instrumental process) which were involved, in a positive feedback way, with initiating events.

A possible mechanism for involvement of these catecholamine neurons in drive-reward interactions was considered: the catecholamine axons inhibited a set of drive neurons in the lateral hypothalamus . . . it was supposed that these neurons were prewired to basic drives on the input side but had variable drive-object targets learned on the basis of good and bad after effects of consummatory behaviors. This learning was supposed to be mediated by changing the connection of the drive neurons in the cortex.

A different possible mechanism was also considered: catecholamine fibers were also transport fibers for peptide hormones picked up in hypothalamic stations. These would be carried through the brain and their release would produce drive states. In this case the same fibers might carry two messages. A drive message would be carried by one pattern of activity that would release peptides. A reward message would be carried by a different pattern of activity that would release amines. In this case the problem of how a reward connects a drive to a set of behaviors or objects would be resolved in an easily conceptualized way. Connecting a reward fiber would consist in connecting a drive fiber [37:429-430].

MEMORY

It should be apparent that I have been discussing various aspects of brain processing, both at macrolevels and at microlevels. I have touched upon the acquisition of information and made reference to the necessity to make constant comparison with past experience. In a broad sense the term *memory* refers to the consequences of past experience. As McGaugh points out, "Memory involves a complex set of processes by which experiences alter the nervous system in ways such that the changes endure and affect subsequent experience and behavior" [30]. Recalled information, for example, does not simply consist of discrete bits, unaltering images, or words. It includes the context in which particular experiences occurred, including the affective tone. The processing systems involved are remarkably complex and must deal with acquisition, storage, retrieval, and the neural alterations produced by experience.

Investigation since the mid-1960s appears to have yielded definitive evidence that the brain is changed by experience. Not only neural but anatomic changes are produced, including increases in brain weight, cortical thickness, complexity of dendritic branching and numbers of dendritic spines, and the number and size of synapses [41]. Numerous studies show that changes in brain structure are effected by environmental stimulation and complexity.

Although these changes are clear, there is as yet no definitive proof of a relationship to memory processing. Long-time environmental stimulation alone would not be convincing, but these observations become even more provocative in the light of studies showing that similar brain changes have been produced after only thirty minutes a day of such stimulation for fifteen days. The effects are even more pronounced if a CNS stimulant such as amphetamine is administered before each period of stimulation.

There is no doubt that the nervous system is altered by training experience. The reviews of John [17], Glassman [8], and others present de-

tails of the anatomic, chemical, and physiological changes induced by training. More recently McGaugh [30], has summarized these changes. Training affects EEG activity, slow cortical potentials, evoked potentials, multiple-unit discharges, and single-unit activity. It would seem reasonable to suppose that these neural changes are related to the establishment of memories. CNS systems involved in training effects include sensory systems, arousal, motivation, mood, and motor responsiveness. That neuronal firing patterns are changed is clear, but there are still questions about the functions served by such changes. Olds pointed out the difficulty in attempting to establish a causal relationship between such changes and the totality of learning and memory: "How can we, from an enormous number of changes fed back upon changes in a confusing web of neuron behavior cycles and neuron-neuron epicycles, sort out the critical changes which come first, and being at the sites of the learning, cause the others?" [36:42]. He suggested that the essential factor is the latency of the neuronal response to a new stimulus. His basic point concerned the thesis that if a unit changes its firing rate during training and the response latency is short, then the unit is likely to be directly involved in the learning process. He carried out such studies and demonstrated such signs of learning prior to any behavioral changes. McGaugh points out, however, that although such changes in unit activity appear to be correlates of learning, we still cannot be certain whether they are critically involved in the learned behavior.

In part such studies are designed as an attempt to delineate cells directly involved in learning, on the basis that such cells are parts of circuits providing the basic memory trace. John [16] does not agree with this notion that learning is based on the formation of specific connections. He says that specific circuits are not necessary because "information is represented by a common mode of activity in units located in many regions of the brain. The important feature of firing is the coherence of firing patterns in ensembles of neurons. The coherence can be measured in patterns of evoked potentials or as statistical averages, of unit discharges." He suggests that "the information will be activated or 'readout' when a stimulus — even a novel one — activates the representative system . . . in such a way as to cause release of a common mode of activity like that stored during the learning experience" [16:863]. The question still remains to be answered.

Such physiological changes are, of course, accompanied by or associated with chemical alterations. One or another aspect of memory can be altered or modulated in a number of ways: by drug or other manipulation causing the release of hormones or transmitters; by inhibiting the synthesis of substances involved in mechanisms associated with memory; by directly altering synaptic mechanisms; by disrupting cellular metabolic

processes; and by influencing the nonspecific physiological changes produced by training.

Numerous experiments have been concerned with the roles of RNA and protein in the memory process. Training appears to stimulate RNA and protein synthesis. The inhibition of such synthesis may affect both memory storage and retrieval. Many recent observations appear to support Kety's [23] hypothesis that catecholamines play a role in the modulation of memory storage associated with neuronal activation by a training experience. As McGaugh points out, "Training may produce two kinds of effects which are important for learning. First, the training elicits temporary changes in the neuronal systems activated by the training stimulation. Second, the stimulation activates a number of physiological changes such as the release of catecholamines in diffuse brain systems and the release of pituitary hormones. These chemicals then act to potentiate the changes produced in the specific neuronal systems activated by the training. It could be that only one type of nonspecific effect (e.g., catecholamine release) is central for the modulating influences. Or it might be that many kinds of endogenous chemical substances play a role in modulating memory storage" [30:518]. Support for this suggestion is lent by data showing that retention of learned responses is influenced by pituitary hormones.

Electroconvulsive shock (ECS) administered immediately after training has been shown to result in poor subsequent performance; the same treatment given some time after training has no effect. This suggests an effect on fixation or consolidation, a process converting memory from a labile to a stable, permanent form. Recently it has been reported that ECS administered shortly before training can block memory selectively without a measurable effect on acquisition. Perhaps a metabolic effect which persists beyond the time of behavioral recovery is responsible for this effect.

Progress is being made in our understanding of the correlates and modulation of memory, but at present there exists no definitive, validated, coherent theory of how information is stored in the brain.

PSYCHOSOCIAL PERCEPTION

Since my concern here has been the biological factors that appear closely correlated with psychological observations and concepts, it seems appropriate to end with some attention to the role of these factors in psychosocial perception.

The perception and evaluation of the significance of a social event

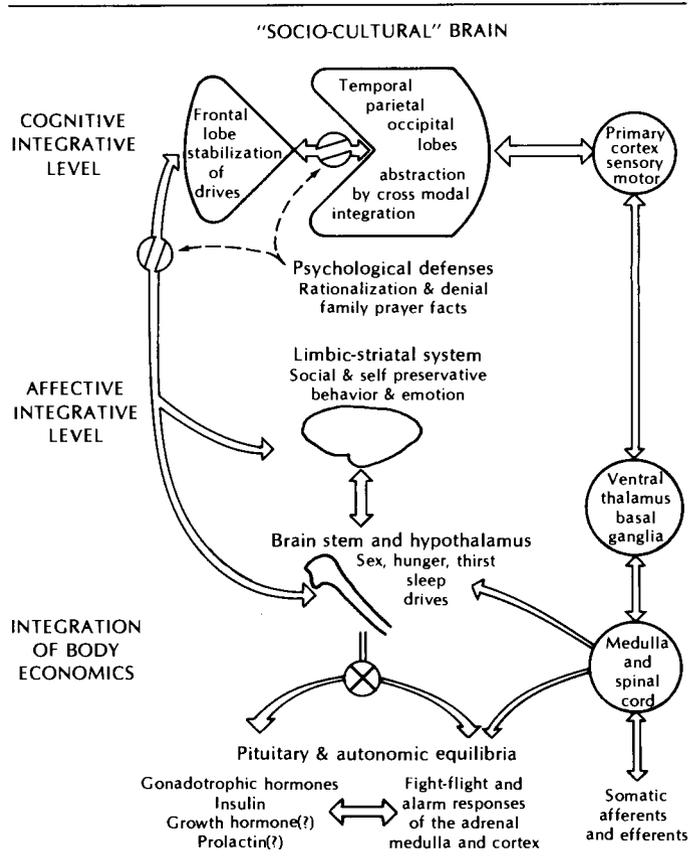


Figure 1.16
 Mechanisms of physiological response to psychosocial stimulation. The main current of information from the peripheral sense organs courses through the midbrain and thalamus to the primary sensory cortical projection areas. Massive neocortical cross-modal association regions provide the "semiotic" symbol-handling capacity needed for culture and technology. The frontal pole connects this "social" brain with the amygdala, hippocampus, septum, and cingulate gyrus. These "limbic" structures together with the striatal storehouse of "ancestrally learned behavior" subserve emotion and are closely integrated with the hypothalamus that effects consummation of the basic drives. The thalamus on the arrows represent controls to draw attention to the coping mechanisms involved in the control of emotional responses. The hypothalamus together with the non-specific reticular activating system modulates varied pituitary, vagal, and sympathetic reactions that eventually can lead to pathophysiologic changes. From J. H. Henry and D. L. Ely. In *Biological Foundations of Psychiatry*. Raven Press, New York. Copyright © 1976.

appears to depend on the interaction of the most recently evolved part of the brain, the neocortex, referred to by MacLean as the *sociocultural* brain, and the limbic-striatal system that subserves emotions. Much recent investigation has yielded new clues as to the function of man's large parietal cortical association areas (between the visual, auditory, and sensory motor primary association areas). This location suggests particular suitability for abstracting from the surrounding areas and creating symbolic concepts applicable to all these modalities. (Henry and Ely) ask whether, "in addition to language, rudiments of other nonverbal patterns of complex social behavior are built into these most recently developed regions of the cortex" [13]. It is possible, they state, "that patterns controlling maternal, paternal, and complex, subtle territorially determined aspects of social behavior involve a measure of programmable neocortical capacity, which must develop during maturation if the individual is to become a successfully integrated member of the group" [13:948].

Nauta [35] discusses a new, large association area of the human brain. He suggests that the frontal lobe serves as the neocortical representative of the limbic system and works in reciprocal relationship with the new temporoparietal cross-modal association areas. It is presumed to receive information from the internal environment, which has been processed through the limbic system and hypothalamus. He suggests that it may play a crucial role relative to the discrimination of material to be stored in memory, as well as facilitating foresight in planning and inhibiting inappropriate activity.

These new frontal and parietal cortical areas have been called the *social brain* — necessary for mathematics, language, tool making, complex planning, and long-range carrying out of the plans. Psychosocial interactions stimulate the social brain, thus eliciting psychosocial perceptions. The mechanisms controlling the intensity of the psychosocial stimulus, as visualized by Henry and Ely [13], are shown in Figure 1.16. According to them, the central role of the frontal lobe in transmitting information between the temporoparietal cross-modal association areas and the limbic-striatal brain is shown by an arrow connecting them through this region. The control then runs down from the hypothalamus to a neuroendocrine balance. The circles placed on the arrows represent controls to draw attention to coping processes that modulate the intensity of the brainstem neuroendocrine responses. They point out that "there is evidence that these coping processes depend for their effectiveness upon the adequacy of the connections between the sociocultural brain and the limbic system and that these connections can be impaired" [13]. Such impairment could markedly disturb integration of the informational interchange between the internal and external environments. Henry and Ely and others see such considerations as the biological bases of psychosomatic illness.

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2

Emotions

Peter Hartocollis, M.D.

THE MIND-BODY PROBLEM

Behavior is the way an object conducts itself in response to a stimulus; it implies an observable change or activity on the part of an object in its environment. Behavior is objective — an object's or person's conduct observed from the outside. The subjective aspects of behavior are one's experience — living through an event or events. Experience implies life and consciousness, the awareness of a life event, an object, or the self — the person who experiences it. Self-consciousness or self-awareness constitutes a vital, presumably unique, characteristic of human beings.

Depending on whether it is referring to the outside world of objects or to the self, experience is defined as objective or subjective. Objective experience ascribes attributes or quality to objects; subjective experience is a central affective state, attitude, or disposition — a quality of the mind. In fact the terms *mind* and *experience* are equivalent, mind being to experience what body is to behavior. It is the distinction between experience and behavior that underlies the mind-body problem — a dichotomy or antithesis that has preoccupied scientists, psychologists, and medical people, psychiatrists in particular, at least since the time of Descartes, the seventeenth-century French theologian-mathematician-philosopher.

Mind, in the individual sense, is the self in the abstract — the hypothetical entity that perceives, remembers, thinks, feels, and cognates or wills. In contrast the body is the material entity that senses and acts, or functions. When mind and body are treated as separate though interrelated entities, we speak of dualism. Descartes was a dualist; so were Locke, James, and Freud. Cartesian dualism is contrasted to monism in one of its several versions: the monism of physicalists like Aristotle, Hobbes, Hegel, and the contemporary behaviorists, for whom the mind is but a function of the body (of the brain in particular); the monism of idealists like Leibniz, Berkeley, and Schopenhauer, according to whom the body is but a mental experience; and the monism of Spinoza, which considers mind and body as two aspects of a third, supraordinate reality, neither mental nor material [9].

Spinoza's monism, in all practical purposes a dualism, is reflected in the writings of a number of contemporary scientists, among them the physicist Oppenheimer, the biologist Monod, and the neurosurgeon Penfield. Such writers invoke the concept of complementarity, which is a restatement of the traditional view of psychophysical parallelism, according to which the full exposition of an object in nature may require two hypotheses, descriptions from two different perspectives, neither of which can explain the other or interact with the other. As Oppenheimer put it, "Neither is comprehensible in the other nor reducible to it" [7:69].

One may be tempted to say that the problem is more metaphysical than scientific, yet it would be difficult to bypass the question, What is that which perceives, remembers, thinks, feels, and cognates or wills? The mind or the body? No doubt, there can be no mind without a body and its brain — even though the opposite is quite possible — unless by mind we mean soul, as did pre-Cartesian, scholastic philosophers. But even though the brain, with its anatomic structure and physiology, underlies all thinking, feeling, and willing, nothing in its conditions can account for any particular thinking, feeling, or willing that a person may engage in. Behavior and experience can be accounted for by the body insofar as elementary animal functions are concerned — muscular, glandular, and sensory reactions to appropriate stimuli from the environment. No other behavior or experience can be explained, however, by what we know about the body, including its central nervous system. Human behavior is meaningful; it is determined by personal motives that depend as much on the experience of each person as on his constitutional endowment and actual environmental circumstances.

In spite of the elusive, multidetermined causation of experience, scientists — neurophysiologists and neuropsychologists in particular — have by no means abandoned the effort to localize the various mental functions, the search for specific mechanisms and solid analogues with

which to describe the nature of mental phenomena or human experience. And of all mental phenomena or experiences, the one that seems more amenable to such research is emotion, the qualifier of all experience and the self, not just one class of psychological facts or functions.

THEORIES OF EMOTION

A dualist with a penchant for logical polarities, Aristotle promoted the idea of the body-mind dichotomy by distinguishing between rational activities involving the soul only and emotional activities involving both the soul and body. The tradition of identifying emotions as psychosomatic phenomena, elaborated by philosophers including St. Thomas Aquinas, René Descartes, and Spinoza, and more recently by experimental psychologists like Wilhelm Wundt and Edward Titchener, assigned a secondary role to their somatic component. All of these early workers assumed that emotions were subjective experiences that produce bodily changes (trembling, sweating, and so on). But later the American psychologist William James and the Danish physiologist Carl Lange asserted that the contrary was true: bodily changes, following directly the perception of some exciting event, are experienced as emotions. Emotions are the result and not the cause of bodily changes. We feel afraid because the sight of an approaching bear makes our stomach contract and our heart pound, rather than our fear doing anything to our stomach or heart. James and Lange propounded their theory independently of each other, James attributing emotions to visceral, Lange to circulatory changes [6].

The James-Lange theory was a logical outcome of the notion, prevalent among behavioral scientists at the turn of the century, that all experience can be reduced to sensation. And yet Darwin had already suggested a more dynamic approach to the problem, linking emotional expression to inherited remnants of once-adaptive instincts. The philosopher John Dewey picked up the idea and suggested that emotion is aroused by conflict, for which it serves as a sign, but no one paid attention at the time. Darwin's idea surfaced eventually with neurophysiologist Walter Cannon and, in a different context, psychoanalyst Sigmund Freud.

Cannon, using arguments derived from his own animal experiments and earlier reports by Sherrington and Head, rejected the James-Lange hypothesis, which views emotion as the experiential consequence of visceral or vasomotor changes in the body brought about by the perception of relevant external stimuli. Instead he proposed that "felt emotion" originates from changes in the brain itself, specifically from discharges in the thalamic area, elicited by cortical states or processes, which otherwise, and in spite of any peripheral changes, would remain devoid of emotional

significance or warmth. In merely accounting for the quality of the emotional experience, however, Cannon's view was not so different from the James-Lange position. According to both theories, the experiential or sensory aspect of the emotion is secondary to internal discharges, a peripheral or, rather, centripetal, visceral or thalamic disturbance elicited by a central or centrifugal cortical process. The fundamental difference in Cannon's theory was that it viewed emotions as purposeful: the arousal of emotions served the biological purpose of preparing the organism to take action, such as flight in response to fear or fight in response to rage [3].

Originally a neurophysiologist himself, Freud developed a theory of emotions that is as purposive as Cannon's but confines itself in the psychological sphere. Fear served as the prototype of emotions for both investigators, even though for Freud it was mainly anxiety, a special kind of fear produced by an ambiguous inner or instinctual threat. According to Freud anxiety, and by implication all other emotions, are ego experiences signaling some kind of danger, alerting the organism to take defensive action [4].

Following Cannon's and Freud's views, heralded by Darwin and Dewey, contemporary students of emotions describe them as more purposeful than disturbing, as signaling conflict and emergency situations, arousing or even motivating the organism, preparing for and sustaining adaptive action. Thus Leeper defines emotion as a "perceptual-motivational" process, Tomkins as "the primary motivational system" of a human being, and Arnold as a "felt tendency" serving self-actualization and personality integration.

THE EMOTIONAL PROCESS AND ITS STRUCTURE

Even though specific emotions like anger, fear, joy, and love are experiential phenomena amenable to introspective examination, emotion as such needs to be looked upon as a process, one that involves a series of psychological, somatic, and neurophysiological processes that can be studied objectively in the laboratory. The emotional process involves three kinds of reactivity: neurophysiological, motor-behavioral or expressive, and cognitive-subjective.

Aside from the thalamic area, which, as Cannon first recognized, plays a central role in the integration of emotional expressions and viscerosomatic behavior, important for the experience of emotions and their arousal is the reticular activating system of the brainstem. Surrounding the brainstem and intricately connected with the hypothalamus is the limbic system. Recent clinical and experimental evidence implicates it strongly in the elaboration and storage of emotional experience. Two of

the three main subdivisions of the limbic brain, in particular the hippocampus, closely related to the olfactory apparatus, are involved in emotions of an oral and sexual nature, respectively. The third subdivision, phylogenetically more advanced and apparently related to the visual apparatus, is involved in emotions of a sociosexual and altruistic nature [2].

Motor-behavioral components, facial expressions or bodily postures, whether actually manifest or inhibited, comprise an integral part of the emotional process. They reflect some impulse to action, a central state of activation or arousal, and peripheral physiological changes, viscerosomatic reactions to a massive excitation of the sympathetic nervous system. James and Lange assumed that emotions can be differentiated physiologically. Cannon, generalizing from his studies of fear and rage, argued that all emotions, if sufficiently intense, are characterized by a massive excitation of the sympathetic nervous system. Recent experiments, however, have shown that, even though the sympathetic nervous system is active in both, fear is characterized by epinephrine secretion, and rage is accompanied by norepinephrine, each leading to different physiological effects. Bodily changes alone have little effect on emotional experience and behavior if the individual cannot attribute these changes to emotional stimuli.

Specific emotions involve their own kind of appraisal of the stimulus situation. Appraisal, of course, means cognition, in the sense of perception and judgment. As a series of experiments by Schacter has shown, the same states of physiological arousal can be subjectively interpreted and experienced in a number of different ways, depending on the context of the experience. Indeed most contemporary views assume that emotion as an experience depends on the interpretation and evaluation of the situation.

THE PHENOMENOLOGY OF EMOTION

Emotional phenomena are described variously and often interchangeably as emotions, feelings, or affects and occasionally as sentiments. A related term is *mood*. When *emotion* is used, it carries usually the connotation of physiological involvement and facial expression. *Affect*, on the other hand, is often reserved for the subjective, experiential component of the process, more specifically the immediate emotional experience. The term connotes a more intensive, sudden, and short-lived reaction than *emotion*, *feeling*, or *sentiment*. *Feeling* is used to convey the idea of pleasantness or unpleasantness, being conventionally related to sensation, in particular the sense of touch. But it is also used synonymously with *emotion*. *Mood* refers to an affectively laden mental state or disposition, a sustained and presumably more complex emotional reaction.

Emotions, like diseases, can be classified according to etiology, symptoms, and course of development. And like psychiatric syndromes, which many of them are, they can be analyzed into component elements or reactions. Most classificatory systems differentiate between primary, or basic, and secondary, or derived, emotions, simple and complex or compound. Experientially emotions are identified as positive and negative, according to their presumably simplest component element of pleasure or unpleasure. Titchener distinguished them further into qualitative emotions (joy and sorrow, like and dislike), temporal emotions (expectation and surprise), and mixed emotions (pleasant and unpleasant at the same time).

Touching upon the issue of motivation and its relationship to emotions, the British psychologist William McDougall, author of a classic treatise on the mind-body relationship, differentiated between emotions involving a desire, and more complex, derived emotions, such as hope, anxiety, and regret, which he identified as reactions to the experience of success or failure of desire. Freud also described emotions according to their instinctual derivation (love, aggression) and as reactions to external or intrapsychic threat (fear, anxiety, guilt).

Prominent among contemporary students of affectivity, Magda Arnold [1] distinguishes among feelings, moods, and emotions. According to her, feelings and moods have no object; they serve as indicators of the inner state or functioning of the individual. Emotions, on the other hand, aim at someone or something else, "at the possession of suitable objects" [1]. Emotion can move the organism to action, serving the purpose of survival. It is the direction of the tendency toward an object, whether judged as beneficial or harmful to the self, "good" or "evil," that defines an emotion as positive or negative. Arnold qualifies emotions further according to their inherent impulsion or contentment (impulse emotions and contenting emotions), depending on whether the emotions "operate" arise under favorable or unfavorable conditions [1].

A NEUROPSYCHOLOGICAL MODEL OF EMOTION

Experience may be conceived as either objective or subjective, depending on whether it is ascribed to the outside world, as an attribute or quality of objects or to the self, as a central affective state, attitude, or disposition. Objective experience is based on neural processes that engender the projection of centrally formed images away from peripheral receptors and their reactions (sight, hearing) or apart from them (touch, taste, smell). Localization to the surface of a receptor helps in establishing personal boundaries with the outside world — a body ego. Subjective experience, on the other hand, is derived from the perception of the world within and

is ascribed to the self, to what is inside the person's boundaries, or body ego. Such is the experience of being hungry, sleepy, hurt, angry, happy, in love — the experiential, sensory, or felt aspect of emotions.

Subjective experience arises from the excitation of centers located deep inside the brain. Designated as core brain receptors, they consist of neuronal aggregates near the midline ventricular systems of the brainstem, specifically in the reticular formation, hypothalamus, and septal region. They are sensitive to chemical substances, to which they respond differentially, giving rise to antithetical emotional experiences. Core brain receptors sensitive to serotonin (aminergic centers) produce a passive, energy-conserving state of mind characterized by alertness or sleepiness, tranquillity or depression. Centers stimulated by cholinergic substances produce action states, manifested as assertiveness or aggressiveness and experienced as such.

Core brain receptors regulate the homeostatic mechanism of the brain. Their regulatory effect is brought about in two reciprocal ways: by means of *go-mechanisms* and *stop-mechanisms*, as neuropsychologist Karl Pribram [8] has termed them. Go-mechanisms are presumably responsible for motivation, for what leads to consummatory behavior and is experienced as interest, appetite, sexual desire, longing for someone or something. Stop-mechanisms, on the other hand, are presumably responsible for satiety, for taking the organism out of action; they are experienced as emotions, central affective states that do not involve a desire. In short go-mechanisms are motivational processes; stop-mechanisms are emotional processes that lead away from motion, eliminating or postponing action [8].

Both the James-Lange and Cannon theories make a sharp distinction between perception and emotion. This is indeed the traditional view of psychology, which holds that perception (a variety of cognition) is the central elaboration of sensory processes and emotion is the elaboration of neurohumoral mechanisms and the experience that results from the perception of internal discharges. But recent developments in neuropsychology and allied fields suggest that such a distinction is erroneous. An impressive body of new experimental findings supports the view that emotion is not simply the felt, conscious aspect of internal (visceral or subcortical) discharges but the experiential manifestation of an organismic state of disequilibrium that occurs when a person is confronted with a novel situation. What defines novelty in the case is a discrepancy between the meaning of presenting stimulus (object) and the self, the absence of a fitting cortical image of action, a coping device or strategy encoded in ontogenetic memory, what neurophysiologists conceptualize as *neuronal models*, system theorists as *programs*, and psychoanalysts as *psychic structures*.

Emotion signals changes in the homeostatic organization of the

brain, changes in response to fluctuations of stimulus input from the external or internal environment. Whereas the perception of the outside world registers an inner, central image that is attributed to objects and is felt as the awareness of something out there, the perception of stimulation from within (neurohumoral changes, drives) produces something of an image that is attributed to the self — a self-image in a state of arousal, excitement, bewilderment, uncertainty.

The awareness of uncertainty, occurring while a person is in a state of normal consciousness, is accompanied by a special kind of subliminal behavior known as the orienting reflex. The experience so far is neutral in quality, neither pleasant nor unpleasant or both pleasant and unpleasant. But the orienting reflex, tuning the organism to cues in the environment, elicits a process of self-appraisal, which gives rise to specific emotions, pleasurable or unpleasurable, depending on the outcome of one's personal self-appraisal in the environment.

To recapitulate, the mechanisms underlying emotional phenomena have reference to an organismic disequilibrium that a person tries to deal with, not in terms of action but by the regulation of perceptual stimulation. The awareness of fluctuations in central excitation, reflecting internal neurohumoral changes, describes a mental state of arousal (activation) or somnolence (unusually low level of activation). The level of arousal at any moment would depend on the degree of organization of the brain activities. When people are subjected to a sufficient amount of arousal, they try to find a way out of it by reappraising and reordering their internal world of self-object representations; it is this effort, or rather the outcome of this effort, that is experienced as emotion. In other words emotions are the result of perceptual-cognitive processes involving the awareness of uncertainty in relation to the possibility of coping with an unfamiliar situation.

To judge oneself as adequate, as capable of dealing with a situation of arousal, would result in a positive, pleasurable emotion, such as joy, self-confidence, love, hope. To judge oneself as inadequate would result in a negative, painful emotion, such as fear, sadness, anger, hate. When the discrepancy between the presenting stimulus and a cortical image of action is over, the emotional process is complete. The person is now able to take action, engage in approach or avoidance behavior, content himself where he is, remaining intentionally inactive.

THE DIMENSION OF TIME

When the person tries to cope with a situation of arousal by resorting to action, emotion tends to become nonspecific, its quality reverting to a primitive pleasure-unpleasure dimension. As long as he remains inactive,

however, his experience is defined by the here and now — a present without future or past characterized by a certain emotion, which, although basically pleasant or unpleasant, is specific to this particular time orientation. But the more intent a person is toward using action, the less specific becomes the prevailing emotion, up to the point that it is experienced as tension or release, as mere pain or pleasure.

The fact that in most instances, at least with humans, an emotion is something more than positive (pleasurable) or negative (painful) — a specific emotion like hope, joy, anger, fear, or depression — is determined by a built-in readiness to experience success or failure in terms of a self-appraisal that equates the integrity of the self to the assessment of its capacity to cope with the prevailing organismic disequilibrium in a temporal perspective. As with the pleasure-unpleasure dimension, time is projected outward and felt like an objective attribute of the world. These two dimensions — pleasure-unpleasure and time — combine to determine specific or human emotions, which are further qualified by the availability of a familiar, "good" or "bad" object to include in the cortical image of action (neuronal model, program, or psychic structure) that underlies the emotional experience [5].

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3

Learning Theories: Operant Paradigm

James E. Barrett, Ph.D.

The distinctive features of operant behavior, including its frequency of occurrence, idiosyncratic form, and further modification, depend principally on the consequences of past behavior acting together with current environmental conditions. A focus on the consequences of behavior distinguishes the study of operant behavior from that of respondent or Pavlovian behavior, which instead emphasizes the role of antecedent events. Operant behaviors are perhaps best viewed as those that interact with and are subsequently changed by environmental consequences; respondent behaviors are essentially responses to the environment that do not undergo progressive differentiation. Although these and other formal distinctions between operant and respondent behaviors are easily made, the two types rarely exist in isolation. Growing evidence strongly suggests a less rigid dichotomy between operant and respondent behaviors than was once thought. For example, many events that modify behavior when they occur as a consequence will also produce or elicit behavior as antecedent

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events. Further, certain responses appear to have characteristics of both elicited and operant behavior; although initially engendered by the process of respondent conditioning, such responses may subsequently be modified by their consequences. A complete understanding of behavior demands a thorough understanding of both operant and respondent behaviors and the principles relevant to each.

HISTORICAL ANTECEDENTS

The study of operant behavior can be related historically to Darwinian evolutionary theory. In addition to advocating a continuity of species based on physical characteristics, Darwin suggested a continuity of mental processes as well. Early experiments often attempted to demonstrate the existence of reasoning processes in nonhuman animals and thereby provide support for mental evolution. Actually these experiments did support the belief in species continuity, but of behavioral processes, not of mind. The experimental work of E. L. Thorndike, conducted around 1898, was a significant advance toward the dissolution of early unfruitful notions about reasoning and alleged distinctions between human and non-human behavior [37,38]. Thorndike's experiments emphasized the role of behavioral consequences in determining future behavior in many different species, including the human; orderly, reproducible, and quantitative processes were observed that provided much of the initial information on learning. The scientific study of behavior was given great force in 1913 when J. B. Watson successfully argued for the adoption of behavior itself as the proper subject matter and focus of experimental attention.

These early efforts by Thorndike and Watson, along with those of Pavlov, culminated in the formulation of an analysis of behavior by B. F. Skinner that has received considerable theoretical and experimental attention. Skinner's experiments, begun in the 1930s, emphasized changes in the rate of occurrence of behavior by consequent events. Although these early experiments concentrated on the behavior of rats and pigeons, countless other species have been studied extensively, and the principles have found wide applicability in the treatment and modification of various human psychopathological disorders [1,2,16,24,41,42].

In contrast to Pavlov's research, which focused on behavior reflexively elicited by a specific stimulus, Skinner concentrated primarily on behavior that occurs in the absence of any identifiable eliciting stimuli. Instead such responses occur for reasons not always known and, depending on their consequences, are either more or less likely to be repeated in the future.

Skinner's experiments went well beyond those of Thorndike and included several significant technical developments as well. A typical arrangement for studying operant behavior consists of placing a food-deprived rat in an apparatus containing a food dispenser and a lever projecting from the wall. When the rat's depressions of the lever are followed by the presentation of food, the likelihood that similar responses will occur again is increased. The class of responses that results in the depression of the lever is termed an *operant* and is defined in terms of the common effect these responses have on the environment. The change in frequency with which subsequent behavior occurs represents the process of *operant conditioning*.

SHAPING

Many operant behaviors not already in an organism's repertoire can be made to occur through the process of shaping, where entirely novel and complex behaviors emerge from more basic undifferentiated responses [27,38]. In the process of shaping, behaviors that approximate a final desired form are selected and rendered more likely to occur by arranging a suitable consequence. It is not even essential that the final response already exist in the organism's repertoire; approximations of the terminal response, no matter how rudimentary, are successively modified until the end result is achieved. The technique of shaping has been used effectively in reinstating the verbal behavior of a psychotic who had not spoken for nineteen years and can serve to illustrate the principles involved [19]. Since the subject did not speak at the outset, a behavior only remotely related to speech — eye movements in the direction of the therapist — was initially selected and followed immediately by an effective consequence. Subsequently the behavior of lip movements, unstructured vocal emissions, and finally whole words were successively required over the next six weeks. Ultimately the subject used intact sentences, and his overall social behavior improved. Similar shaping techniques have been applied with behaviors as diverse as training an autistic child to wear glasses, reinstating natural breathing in infants dependent on a tracheostomy, and in developing a variety of other behaviors as well [4,31,42].

The technique of shaping vividly illustrates the continuity of behavior in time and the means by which already existing responses can be progressively modified by arranging effective consequent events. The final features of a behavior that has been differentially shaped may bear little or no resemblance to its embryonic form. Behavior that has evolved over time can be understood only in terms of the individual's history. Although the behavior may appear novel or unique to someone lacking es-

sential information, the final product emerged as a continuous process and is directly related to earlier forms.

A complete understanding of the process of shaping is critical for recognizing the manner in which behavior is changed by its consequences and for appreciating the profound relationship of existing behavior to that which has occurred previously. An emphasis of this type may appear to divest behavior of much of its mystique when highly complex and apparently new responses are seen to depend on a continual modification of earlier more basic forms. It has been unfortunate that attempts to understand behavior have often been more elaborate than necessary. The complexity of behavior seems to invite embellishment. At least part of the reason this appears so is that those interested in understanding behavior often focus on already well-established behaviors that have resulted from multiple interrelated factors. Although previous consequences may no longer exist, residual effects may nevertheless be apparent in current behavior. This presents special difficulties in attempting to identify factors responsible for current behavior. Knowledge of the techniques and principles involved in the shaping and differentiation of behavior is of both practical and theoretical significance in accounting for current as well as future behavior. A more complete understanding of the behavioral processes of reinforcement and punishment is of additional value in the analysis of operant behavior.

PROCESSES OF REINFORCEMENT AND PUNISHMENT

Operant behavior is developed, maintained, and changed by its consequences. When the presentation or termination of an event following a particular behavior subsequently increases that behavior, the process of reinforcement has occurred, and, under those circumstances, it is permissible to speak of that event as a reinforcer. When there is a decrease in behavior that either produced or terminated an event, however, the process of punishment has taken place, and the event is identified as a punisher. The defining characteristics of reinforcers and punishers depend on how behavior is changed, not on the characteristics of the events themselves. This point is often neglected in attempts to categorize events independently of the effects different events have on behavior. Reinforcement and punishment are empirical behavioral processes that are not restricted to particular classes of events. The presentation of an event under one condition may function as an effective reinforcer and under another as a punisher. Which of the effects an identical event may have depends on many factors, which include the person's prior experience and the conditions existing at the time the event occurs.

Although it has often been assumed that certain events such as food, water, and sex possess inherent consistent reinforcing effects, they will not always increase behavior and, under some conditions, may only suppress it. Premack's [32,33] work showed that a particular consequence can be either reinforcing or punishing depending on the initial relative probability of that behavior. In one experiment the relative probabilities of drinking and running by rats were manipulated by providing limited access to either water or to an activity wheel. When deprived of running but not water, the rats spent a larger amount of time running than drinking; when water deprived, however, the opposite existed. Premack was able to increase the relatively lower level of drinking in the nonwater-deprived rats by providing access to the running wheel only after drinking occurred (reinforcement). Conversely when drinking by water-deprived rats resulted in activation of the motorized wheel, hence forced running, drinking was suppressed (punishment). Thus the same event — operation of the activity wheel — functioned as a reinforcer or punisher depending on whether the initial relative probability of running was high or low. Based on this work, Premack has emphasized the relativity of events as reinforcers or punishers, a view consistent with a number of other experiments showing different behavioral effects of the same consequent event. Events as disparate as electrical stimulation of the brain, intravenous injections of a narcotic antagonist, the delivery of electric shock, or the specific behavioral effects of amphetamine can all serve as reinforcers or punishers depending on a variety of factors [26,28,29,30]. Among those factors that determine which of the different behavioral effects an event will have are the organism's prior experience and the conditions under which the events are presented. The latter is termed a *schedule* and is of paramount importance in understanding operant behavior and the processes of reinforcement and punishment.

SCHEDULES OF REINFORCEMENT

A schedule of reinforcement is the precise specification of the relationship between behavior and its consequences [12,17,18]. Operant behavior develops from and assumes distinctive features that depend overwhelmingly on the schedule under which events occur. Schedules of reinforcement act dynamically with existing behavior and prevailing environmental stimuli to modify further and maintain subsequent behavior. The topic of schedule-controlled behavior embraces many of the points mentioned earlier. For example, the processes of reinforcement and punishment depend to a large degree on the way events are scheduled, as do the effects of other interventions, such as drugs. An intensive study of schedules of reinforce-

ment has resulted in the revision or rejection of certain traditional areas of psychology. More recent treatments of customary subjects such as motivation, perception, and emotional behavior have been reformulated as a result of empirical findings based on research using schedules of reinforcement. Schedules of reinforcement create complex, highly integrated patterns of behavior. Much of the order, apparent purpose, and unyielding persistence of behavior comes not from inner resources but from a history of reinforcement under a particular schedule. Research with schedules has been of both practical and fundamental significance in understanding a wealth of behavioral phenomena. Dews has pointed out that scheduling procedures are of fundamental significance to the study of behavior:

This emphasis on the importance of schedules is not intended to imply that all of psychology should be reduced to a study of them. An influence can be all-pervading without being all-embracing. No one would maintain that all mechanisms of physiology can be reduced to the laws of osmosis; yet osmotic phenomena are ubiquitous in physiology; wherever they can operate, they do; and the student of any physiological mechanism ignores osmosis at his peril. Similarly, it is suggested that schedule influences operate generally in psychology; that when these influences can operate, they will; and that a student of any problem in psychology — motivation, generalization, discrimination or the functions of the frontal lobes — ignores the consequences of the precise scheduling arrangements of his experiments at his peril [6:148].

Basic Schedules

Except under highly unusual circumstances, the schedule under which events are presented or terminated will be intermittent; not every response produces an effective consequence. It is under conditions of intermittency that behavior assumes its most robust character and where the dynamic properties of reinforcers and punishers are most evident [27].

Most schedules of reinforcement are variations on conditions that arrange for the presentation of a consequent event after the emission of a specified number of responses (ratio schedules) or after the passage of a certain period of time (interval schedules). Under both of these schedules, reinforcement can occur according to either a fixed or variable number of responses or after a fixed or variable period of time. For example, a fixed-ratio schedule specifies that upon the completion of every n response, reinforcement will occur; although a variable-ratio schedule also requires a specific number of responses, the exact number varies about some average value. Under a fixed-interval schedule, only one response is required for reinforcement, but this response must occur after the fixed period of time,

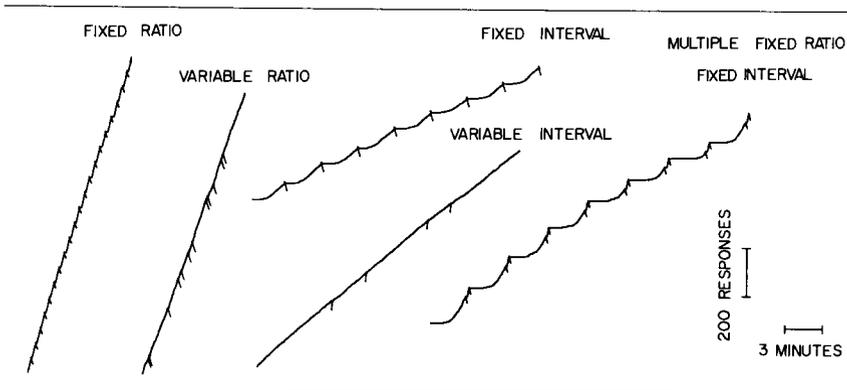


Figure 3.1

Cumulative records depicting characteristic performances maintained under various schedules of reinforcement. Abscissa: time; ordinate: cumulative responses. Diagonal marks on the record indicate reinforcement delivery. Under the fixed-ratio schedule, every fiftieth pecking response of a pigeon on an illuminated plastic response key resulted in four seconds access to grain. Note the brief pause after reinforcement followed by the abrupt initiation of a high, sustained response rate until food was delivered. Under the variable-ratio schedule, every fiftieth key-pecking (pigeon) response, on the average, resulted in food presentation; responding occurred at a relatively high steady rate, and pausing did not typically occur following reinforcement. The fixed-interval schedule arranged a 300 mg food pellet to follow the first lever-pressing response of a squirrel monkey after a three-minute period elapsed (fixed-interval three-minute schedule). Note the pause after each pellet delivery, followed by a gradual transition to a reasonably steady rate of responding until the next pellet is delivered. Under the variable-interval schedule, a lever press by a squirrel monkey produced a 7 mA electric shock on the average of every three minutes. Steady response rates typically occur under variable-interval schedules, with little or no pausing following reinforcement. The record on the extreme right shows performances of a pigeon under a multiple three-minute fixed-interval, thirty-response fixed-ratio schedule; these different schedules were associated respectively with red and blue lights, which transilluminated the response key. The schedules alternated following each reinforcement. Note that performances under the individual schedules are comparable to those maintained when studied in isolation and that the different key lights and associated schedules controlled entirely different rates and patterns of responding.

t, has elapsed. The variable-interval schedule also requires but one response; however, the time periods between reinforcement availability vary about an average interval.

Each schedule of reinforcement generates a characteristic reproducible pattern of behavior that holds for a wide variety of responses and a wide diversity of species. Figure 3.1 shows cumulative records representative of performances obtained under each of the schedules described above. Under the fixed-ratio schedule, responding typically follows an initial pause after each reinforcement and then occurs at a very high sustained and steady rate until the fixed-ratio is completed and reinforcement occurs. Under the fixed-interval schedule, there is a gradual transition from a period of no responding to a high, terminal rate as time elapses. The variable-interval and variable-ratio schedules both generate and maintain more constant response rates with very little pausing after reinforcement delivery. Figure 3.1 also shows that different schedules can be combined and studied in the same subject within a single experimental session. Under the multiple schedule shown, the first response after three minutes in the presence of a red light produced food (fixed-interval schedule); in the presence of a blue light, the thirtieth response produced food (fixed-ratio schedule). The red and blue lights alternated following food delivery, and each stimulus controlled rates and patterns of responding characteristic of the schedule in effect at that time. Schedules of this type have been employed extensively in behavioral research, particularly in studies of the behavioral effects of drugs where drug action can be assessed simultaneously on very different rates and patterns of responding.

Schedules of intermittent reinforcement typically maintain substantial amounts of behavior with only very infrequent presentations of the reinforcing event. For example, despite the fact that only one response produces reinforcement under the fixed-interval schedule, many more responses occur from interval to interval than the single one required. Even when reinforcement has been discontinued, responding that has been developed and maintained under conditions of intermittency may continue to occur unabated for an extended period of time before it ultimately declines (extinction). Skinner [39] has described experiments in which the schedule has become so powerful in controlling behavior that pigeons failed to stop responding to eat food when it became available. In this instance, as in the case of other behaviors that have long, complex histories, the schedule overrode biological factors (e.g., food deprivation) that were initially responsible in developing that behavior. This is only one example of how the study of schedules has tremendously expanded our understanding and appreciation of the powerful control of behavior exerted by schedules of reinforcement. With it has come a corresponding diminution of accounts based more on speculation than on empirical evidence.

The schedule under which an event is presented can be more important than the type of event. Figure 3.2 shows performances of squirrel monkeys under fixed-interval five-minute schedules where the consequences of responding were either the delivery of a food pellet, the presentation of an electric shock, or the termination of a visual stimulus associated with shock delivery. Despite these dramatically different consequences, performances were essentially identical. Similar patterns of responding could also be shown with maintaining events as disparate as brain stimulation and water, intravenous cocaine, amphetamine, or morphine when these events were arranged under comparable schedules. Schedule-controlled performances further emphasize the point that the schedule under which events occur can overshadow many other factors, including the nature of the event itself. The behavioral effects of environmental events are not inherently invariant properties of the event but of the conditions under which those events are scheduled and, in turn, mod-

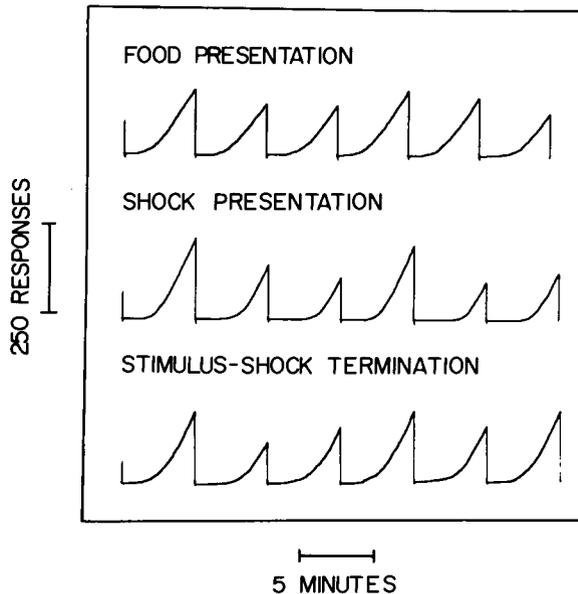


Figure 3.2
Cumulative records of performances of squirrel monkeys under five-minute fixed-interval schedules with different maintaining events. Recording is the same as in Figure 3.1 except the pens returned to the original position following the end of each fixed interval. The first response after five minutes either produced a 300 mg food pellet (*top*) or a 9 mA electric shock (*middle*) or terminated a stimulus in the presence of which shocks occurred (*bottom*). In each case patterns of responding were comparable regardless of the consequent event.

ify behavior. Indeed the schedule under which an event is presented can completely determine the status of an event as either a punisher or a reinforcer.

*Reinforcement and Punishment of Behavior
by the Same Consequent Event*

Figure 3.3 shows how the same event scheduled differently can produce two entirely different behavioral effects. Under certain conditions, which include a suitable behavioral history and an appropriately arranged environment, the presentation of a noxious, intense electric shock can maintain patterns of responding characteristic of those maintained by food (see Figure 3.2, *middle*, for one example) [26,28,29,30]. This effect seems to stand in contradiction to the more widely reported suppressive or punishing effects of shock presentation. Both the maintenance and suppression of responding by shock presentation and the dependence of these effects on the schedule are shown in Figure 3.3. In the top record the responding of squirrel monkeys was maintained under five-minute fixed-interval schedules either by food or electric shock presentation, depending on which of two visual stimuli was in effect. The rates and patterns of responding were comparable under each schedule, irrespective of whether food or shock served as the maintaining event. In subsequent sessions of this experiment, a thirty-response fixed-ratio schedule of shock delivery was instituted during the food-presentation component: each thirtieth response during that fixed-interval produced the same intensity shock that otherwise maintained responding under a fixed-interval schedule in the alternate stimulus condition. After the fixed-ratio shock schedule had been in effect for a short period of time, food-maintained responding declined considerably (punishment), as the second record shows. Significantly, however, the same shock continued to maintain responding under the alternate condition when presented according to a fixed-interval schedule. Thus the dual effects of shock exemplified both the processes of punishment and reinforcement in the same organism at about the same time depending on the schedule under which it was delivered. Results such as these forcefully illustrate the fact that reinforcement and punishment are behavioral processes that are independent of particular environmental events.

Superstitious Behavior

The discussion thus far has concentrated on events produced by or that literally depend on a particular response; in the absence of responding, no

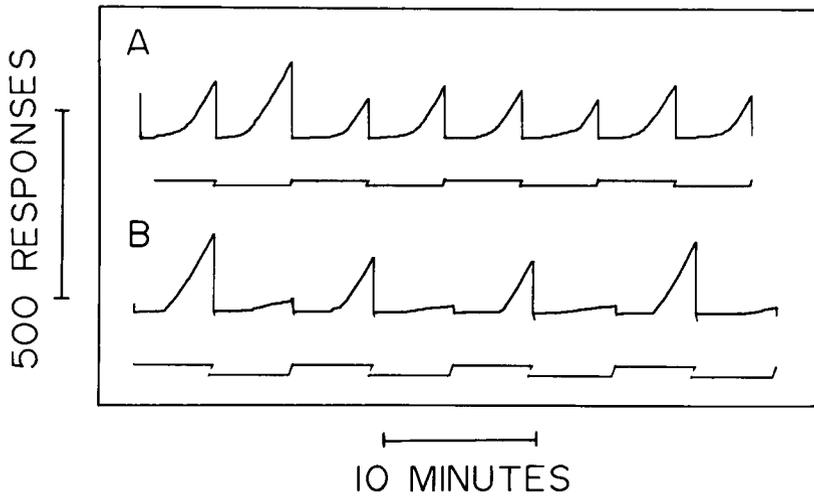


Figure 3.3

Cumulative records of squirrel monkeys showing the maintenance of comparable performances by the presentation of food or shock (*top record*) and the simultaneous maintenance and suppression of responding by shock presentation (*bottom record*). In the top record responding was maintained under five-minute fixed-interval schedules by the delivery of food or by a 7 mA shock; the lower line beneath the records was displaced during the food-presentation component. Performances were comparable despite the different maintenance events. The lower record shows stable performances that developed after a thirty-response fixed-ratio shock-presentation schedule (also 7 mA) had been concurrently in effect during the food-presentation component. Response rates were reduced markedly by shock delivered in this component under the fixed-ratio schedule (punishment), whereas characteristically patterned and high response rates were still maintained by shock under the fixed-interval schedule in the alternate component (reinforcement). Thus the same shock was both a reinforcer and a punisher with the same organism at about the same time depending on the schedule under which it occurred. The pens reset after the completion of each fixed interval; shocks delivered under the punishment schedule are indicated by a diagonal mark.

event would occur. This dependency is unquestionably responsible for many of the characteristics of behavior under response-dependent schedules. Under many conditions, however, events may occur quite independently of behavior and still have profound and lasting effects. Skinner termed these behaviors “superstitious” and, on the basis of experimental

evidence, concluded that they arose from coincidental or adventitious correlations between a particular response and a reinforcing event [38,39]. Events inevitably coincide with some ongoing behavior, and, even though a strict dependency between behavior and the event is absent, a subsequent behavior may be modified. In Skinner's original experiment, individual pigeons were given food every fifteen seconds, regardless of their behavior. In time different pigeons began to engage in distinctively different behaviors, which included turning movements, raising the head, bowing, and strutting. These behaviors were repetitive and idiosyncratic and were developed, strengthened, and maintained by the accidental relationship between their occurrence and the presentation of food. In humans behaviors that show a similar repetitive and stereotyped form are often termed *obsessive-compulsive*.

Many behaviors are undoubtedly susceptible to modification by coincidental events. Under certain circumstances some people may be especially vulnerable to a single reinforcing event which, even though accidental, can exert a substantial and lasting effect. As Skinner has noted, the superstitious behavior of humans often involves the additional assumption of causality even though no strictly functional relationship actually exists. In recent years a number of instances have been reported in which a range of disordered behaviors, including psychotic speech and unusual posturing, were apparently superstitiously maintained [4,24,42]. An exhaustive and accurate behavioral analysis must encompass the total effects that events have, when they depend on behavior and when they do not. A complete understanding of these principles will inevitably result in a deeper appreciation of the sensitivity of behavior to consequent environmental events.

Schedule-Induced Behavior

This section provides a brief introduction to and treatment of a class of behaviors that are as yet incompletely understood but which seem to have their origins in normal scheduling operations. They are discussed here because of their relation to the general topic of schedule-controlled behavior and because they represent fascinating material relevant to those interested in a comprehensive analysis of behavior.

A schedule of reinforcement specifies the relationship between the presentation of an event and the occurrence of certain responses. Schedules of reinforcement not only engender and maintain characteristic and reproducible patterns of responding, they also often induce other behaviors not formally specified by the schedule. Such schedule-induced behaviors emerge as an apparently separate class of responses typically occurring with a high probability in the period immediately following

reinforcement (i.e., during the pause; see Figure 3.1). Usually these behaviors are excessive relative to the frequency with which they would occur in the absence of the schedule of intermittent reinforcement. For example, when maintaining lever pressing under intermittent food schedules, rats deprived of food but not water drink excessively; water intake during a three-hour session far exceeded the amount normally consumed during an entire twenty-four-hour period [10,11]. During the three-hour session, rats ingested nearly one-half of their body weight in water. When the same amount of food was not scheduled intermittently but was given all at once, fluid consumption was normal. A large number of studies have demonstrated that this so-called polydipsia is related directly to the intermittent food schedule.

Although the schedule does not require such behaviors, it does seem to engender and instill them with both temporal and excessive characteristics. In this case the schedule appears to create a motivational condition not based directly on an altered physiological state (e.g., water deprivation). Nor is the phenomenon limited to the drinking of water; among other schedule-induced behaviors that have been reported are attack and aggression, pica, running, and drug ingestion. These behaviors typically occur when the probability of reinforcement is low, are excessive in nature, and are incompletely understood. At least with schedule-induced drinking, which has been studied most extensively, peripheral and central regulatory mechanisms do not appear to adequately account for the behavior; other lines of research based on physiological approaches have also not proven fruitful. This class of behaviors seems to be determined at the behavioral level by environmental factors that are intimately related to the prevailing schedule of reinforcement. Further research promises to yield important information concerning the genesis of schedule-induced behaviors and conditions responsible for its maintenance and modification. Whatever the outcome, it should be apparent that schedules of reinforcement are of crucial significance in generating and understanding an extremely wide range of behaviors under a wide variety of conditions.

BEHAVIOR CONTROLLED BY NOXIOUS STIMULI

Many situations exist where changes in behavior occur when an event is terminated or postponed. Traditionally these procedures have been called *escape* and *avoidance* schedules, respectively, and the events have typically been noxious stimuli, such as electric shock (circumstances where behavior can be maintained by noxious stimuli were described earlier). Recently, however, performances have also been maintained under schedules where responding by morphine-dependent monkeys terminated infusions of a narcotic antagonist or stimuli associated with the infusion

[9,15,43]. When the termination of a noxious event or of the stimuli associated with it are suitably scheduled, performances similar to those maintained by event presentation can occur (e.g., see Figure 3.2).

Under avoidance schedules, responses prevent or postpone some event. The most widely studied postponement schedule has been that initially reported by Sidman [36]. Under this schedule, termed *continuous* or *nondiscriminative*, brief shocks are delivered periodically in the absence of a response; each response postpones shock for a specified time period. In the less widely studied discriminated avoidance procedure, a distinctive stimulus (such as a tone or buzzer) precedes each shock, and a response during that period terminates the stimulus and prevents shock delivery.

Interest in behavior controlled by noxious stimuli has been extensive, partly because of the widespread belief that environmental events play a role in the genesis of pathological behavior. Consequently theories attempting to account for the acquisition and maintenance of avoidance and escape behavior abound, as have the use of such schedules in studying the behavioral effects of drugs believed to produce effects on emotional states underlying such behavior. Both theoretical and experimental efforts have yet to produce a consistent unified account supporting unique behaviorally disruptive effects of noxious stimuli or differential drug effects on behavior controlled by noxious stimuli. In fact current evidence appears to support the opposite view. Under suitable conditions, behavior controlled by noxious stimuli assumes the same orderly and integrated nature as when food or other appetitive events are used.

BEHAVIORAL EFFECTS OF DRUGS

The same variables that are important in controlling behavior also play a significant role in determining the effects of drugs on behavior. The development of chlorpromazine in the early 1950s and its almost immediate widespread use in the treatment of psychosis provided a great impetus for the experimental study of the behavioral effects of drugs. Behavioral techniques using animal subjects were required that could reveal pharmacological influences. Those techniques were already available in laboratories focusing on operant behavior, and it was not long before those studying operant conditioning also began to examine the effects of drugs on behavior. Schedule-controlled behavior was a particularly attractive technique because it was objective and quantifiable and because it provided reproducible patterns of responding within and across different animals for extended periods of time [28]. In addition entirely different rates and patterns could be brought under the momentary control of different discriminative stimuli (see Figure 3.1). In short schedule-controlled behavior was ideally suited for studying drug action.

The study of operant behavior and behavioral pharmacology are complementary endeavors, and each field has benefited immensely from reciprocal influences. Many traditional psychological theories of behavior have been either directly refuted or held deficient by the combined results of studies of operant behavior and of the behavioral effects of drugs. Many hypothetical intervening processes (e.g., emotional and motivational states) have necessarily yielded to the pervasive influence of schedules of reinforcement as a more direct explanation of behavior. Similarly early interpretations of the behavioral effects of drugs also often initially relied on the drug's alleged effects on underlying states. Despite years of research, there is no evidence that the behavioral effects of drugs depend on such intervening mechanisms. Instead the evidence overwhelmingly suggests that the effects of drugs depend on features of behavior that are objectively specifiable and related to the schedule of reinforcement [7,26,30].

Schedules as Determinants of the Behavioral Effects of Drugs

The dependence of the effects of drugs on schedule-controlled performances was shown in an early experiment by Dews [5] using the key pecking of food-deprived pigeons studied under either a fifty-response fixed-ratio or fifteen-minute fixed-interval schedule of food presentation. High response rates (about 1.7 responses per second) were maintained under the fixed-ratio schedule, and lower rates of responding (approximately 0.4 responses per second) were maintained under the fixed-interval schedule. Appropriate intramuscular doses of pentobarbital that increased the rates of responding under the fixed-ratio schedule markedly decreased the responding under the fixed-interval schedule. Thus the behavioral effects of pentobarbital depended on the different rates and patterns of schedule-controlled responding. The results of other experiments show that doses of amphetamine capable of increasing responding under fixed-interval schedules can produce decreases in responding under fixed-ratio schedules [22,23]. The classification of drugs as stimulants or depressants does not fully and accurately convey their effects on behavior. Both pentobarbital and amphetamine have been found repeatedly to depend on the prevailing schedule-controlled rates and patterns of responding. An effect of ethanol similar to that obtained with pentobarbital is shown in Figure 3.4. Under the conditions of this experiment, the responding of pigeons was maintained under a multiple thirty-response fixed-ratio and a five-minute fixed-interval schedule. Characteristically the fixed-ratio maintained high, steady rates of responding; the overall rates of responding under the fixed-interval schedule were lower and were positively accelerated as the interval elapsed (control performances). The administration of 1.5 g/kg

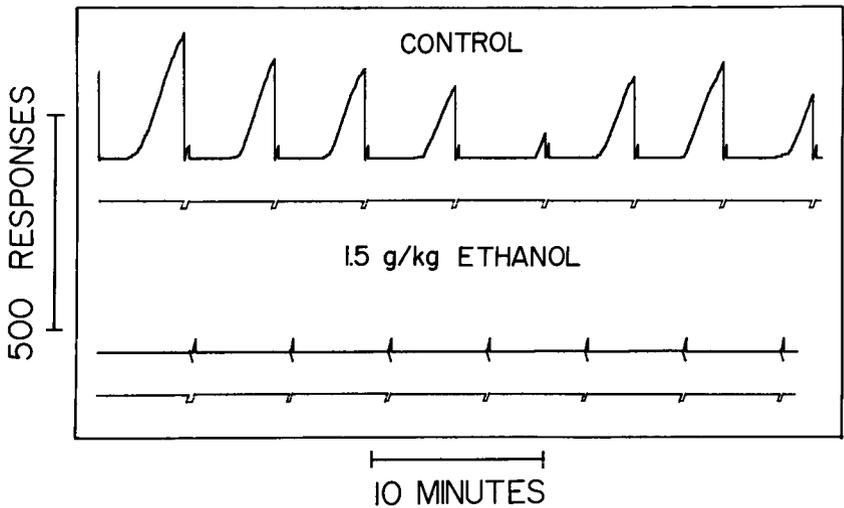


Figure 3.4

Effects of 1.5 g/kg ethanol on key pecking of a pigeon maintained under a multiple five-minute fixed-interval, thirty-response fixed-ratio schedule of food delivery. Control performance was characteristic of responding under this schedule; the fixed-ratio schedule (indicated by the displaced line beneath each tracing) maintained high steady response rates, whereas performances under the fixed-interval were positively accelerated. The recording pens reset after each food delivery. If the ratio was not completed within one minute or if a response did not occur between the fifth and sixth minutes of the fixed-interval schedule, the component alternated automatically, ensuring exposure to both schedules if responding declined during either component. The diagonal mark on the record indicates occasions on which the component schedule terminated independently of responding and food was not delivered. The administration of ethanol approximately thirty minutes prior to the experimental session eliminated responding under the fixed-interval schedule but increased response rates under the fixed-ratio schedule. This selective effect of ethanol is also characteristic of pentobarbital and is dependent on the schedule-controlled rates and patterns of responding maintained under nondrug conditions. From Dworkin, Katz, and Barrett, unpublished data.

ethanol almost completely eliminated the responding under the fixed-interval schedule but increased the response rates under the fixed-ratio schedule. Ethanol, like pentobarbital, does not produce effects that are independent of the particular behavior and environmental conditions surrounding it. These effects of ethanol and pentobarbital, along with those of amphetamine, make arbitrary classifications of these drugs as behavioral depressants or stimulants erroneous. The behavioral effects of drugs acting with biological tissue can be determined by environmental variables.

Since his initial work, Dews and others have emphasized the contribution of response rate to a determination of drug effects. Depending on the control rate of responding (the normal rate existing in the drug's absence), responding will be either increased or decreased; relatively high response rates are decreased, whereas lower response rates are increased. This inverse relation between control rates of responding and the direction of a drug effect has been obtained with a wide variety of species and drugs, using different responses and schedules, as well as different maintaining events. The generality of the phenomenon is impressive and is ample testimony to the significance of schedule-controlled rates and patterns of responding in determining the behavioral effects of drugs [8,34].

Current research in behavioral pharmacology is extensive, and a rather vast literature has accumulated [3,13,20,35,40]. This research has focused on other determinants of drug action, such as the environmental context in which the behavior occurs and the organism's previous behavioral history. Both of these variables also seem to play an important role in determining the effects of drugs. Future research concentrating on the effects of drugs on operant behavior will undoubtedly provide valuable information beneficial in elaborating the various effects drugs have on behavior and in understanding the bases for their therapeutic effects.

Behavior Controlled by Scheduled Drug Injections

In recent years, those interested in a behavioral analysis of drug dependence have focused on the use of drugs as consequent events for maintaining behavior. In these experiments animal subjects (usually monkeys) are typically surgically prepared with intravenous catheters that permit the automatic and instantaneous delivery of a particular drug following a response. A growing literature provides ample evidence that the consequent administration of drugs such as amphetamine, cocaine, methohexital, and morphine can engender and maintain schedule-appropriate rates and patterns of responding. Conversely other drugs, such as chlorpromazine or imipramine, have not yet been shown to maintain responding over long

periods of time. These findings are important because they permit an objective experimental analysis of drug-taking behavior and drug abuse, thereby placing such analyses in the domain of more familiar processes governing reinforcement and punishment [14,15,21].

One overriding characteristic of human drug dependence is the apparent compelling nature of the drug and the occurrence of persistent elaborate drug-seeking behavior. It is experimentally possible to establish and maintain long and orderly sequences of behavior in laboratory animals using scheduling techniques in which responding is maintained by stimuli occasionally associated with drug administration. As is the case with humans, environmental stimuli associated with drug-taking behavior play a powerful role in the control and maintenance of this behavior. Developments of this kind, as well as many other advances in behavioral pharmacology, can be traced directly to technical and conceptual progress in operant behavior. Further studies in both fields will unquestionably provide a further understanding of behavioral processes involved in drug abuse that will be of general relevance to behavior.

CONCLUSIONS

Operant behavior has a special status for those interested in the study and understanding of behavior. Since it is controlled by its consequences and since different consequences can be arranged in so many different ways, operant behavior assumes complex and fascinating forms. This complexity, however, poses formidable problems in attempting to arrive at scientifically accurate and objectively verifiable conclusions about behavior. Often, for example, the consequences responsible for maintaining behavior may be remote, erroneously suggesting that behavior occurs of its own volition and is self-sustaining. Other behaviors may appear striking because they are maintained by consequences usually considered noxious. In both instances, as in countless others, a completely adequate explanation could be found in a person's prior history and in the manner in which consequent events were scheduled to occur, thus bringing apparently purposive and highly complex behavior into the realm of scientific endeavor.

The study of operant behavior is synonymous with the study of schedules of reinforcement. A schedule both embraces and reveals the interaction between behavior and its environmental consequences. The extensive study of schedule-controlled operant behavior has resulted in dramatic revisions of traditional views concerning behavior that have both theoretical and practical significance. Concepts once elevated to a position where they purported to explain behavior have yielded to accounts emphasizing the influence of schedules as fundamental determinants of be-

havior. The basic processes of reinforcement and punishment, behavioral effects of drugs, aggression, eating and drinking — whether in moderation or excess, as in schedule-induced behaviors — can all be shown to depend on factors directly related to the schedule of reinforcement. To deny the influence of schedules is to erect an impenetrable barrier to an ultimate and complete understanding of behavior.

An emphasis on schedules is not meant to negate the importance of other factors but is intended to redress partly the existing imbalance and current tendency to rely on alternative and imprecise means of analyzing behavior. An appreciation of the influences of schedules draws attention away from speculative accounts and focuses it instead on the consequences of past behavior acting together with current environmental conditions. The origins, current maintenance, and further modification of operant behavior can be best understood by concentrating on the influence of schedules of reinforcement.

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4

Learning Theories: Pavlovian Paradigm

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The general field of behaviorism has been founded largely on the philosophy of John Locke, whose ideas contributed to a science relating human behavior almost exclusively to the external environment. Following Locke, reflexology considered the organism as a tabula rasa, a blank slate to be written upon by experiences relating to the external environment. The importance of the events surrounding the organism was given special impetus by the American behaviorists (particularly John B. Watson) around the turn of the century and later by B. F. Skinner and others. Their attention was devoted primarily to events that occur at the periphery of the organism where it comes in contact with its external environment. Until recently American behaviorists confined their measures primarily to skeletal muscle movements. In contrast other investigators have focused more on the internal state of the organism, following learning models developed from physiology.

Classical conditioning was first investigated in the early 1900s by the Russian physiologist I. P. Pavlov. A physiologist, Pavlov was interested in studying integrated physiology in healthy animals. He was disturbed by the methods other physiologists had been using prior to this time to study

bodily functions: acute experimental preparations, after which animals were sacrificed and the organ of interest extirpated and examined in isolation. Since one of Pavlov's interests was to understand the physiology of digestion, he was concerned that such methods were not adequate to allow a proper observation of this living system. He wanted to study normal, natural digestive processes in healthy animals. By developing a fistula system, and especially by the development of a preparation that would later be called the *Pavlov pouch*, he was able to begin observing various reflex stomach secretions involved in the ongoing digestive process. This brilliant method for studying normal physiological reflexes, however, quickly led Pavlov to observe a new and strange reflex physiology that had not previously been seen. If he regularly gave the same dog repeated trials of a food such as meat powder, the stomach would begin secreting acid with progressively shorter latencies. Eventually the stomach would begin secreting before the meat powder was given — even at the mere sight of the handler who had given the food previously. This response was clearly an unusual type of reflex secreting when it had not yet received food. Pavlov's studies led for the first time to an objective method for studying what he termed *higher cortical functions*, mental functions previously not readily accessible to study.

Pavlov's basic discoveries have been extended beyond the gastric secretions or salivary reflexes he studied, but the principles remain the same. In humans, for example, a puff of air blown at the eye will result in a blink of the eyelid, a protective reflex. This reflex can be elicited reliably in any number of situations and constitutes an unconditional reflex (UR). If a soft tone is presented to the person in this situation, the usual response is an orienting reflex, which disappears with repeated presentations of the tone, and is said thereby to habituate. If the tone, which constitutes a conditional stimulus (CS), is presented shortly before the puff of air is blown at the eye (the puff being the unconditional stimulus, US, the blink occurs sooner (with shorter latency) after the puff is released. Eventually the blink will occur even when no puff of air is released at all. This relationship established between the tone CS and the eye blink, which was not present before, constitutes a demonstration of the conditional reflex (CR).

The strength of the CR — the reliability with which it may be elicited or its magnitude — is usually a function of the number of paired presentations of the UR with the CR (the number of reinforced trials), among other things. When the CR is elicited without reinforcement by the UR, it gradually disappears. This process is known as *extinction*. Even when a CR has been extinguished, however, it can be elicited again if a novel or distracting stimulus (*disinhibition*) is presented or simply by allowing the subject to rest for a period of time (*spontaneous recovery*). The

CR can be produced to stimuli that are similar to the original CS — for example, a tone of a somewhat different pitch; this process is termed *stimulus generalization*. The conditioning process can also lead to discrimination between two stimuli, especially if one is reinforced by the UR and the other is not. Other stimuli, through association with established CRs, may become capable of eliciting the CR as well; such a process is called higher-order conditioning.

Pavlov's contribution to behavior through his work on the conditional reflex was based on precise measurement. With his positive and negative conditional reflexes, he made it possible to examine what he had called "psychical" phenomena in terms of quantifiable correlates, measured in cubic centimeters of saliva or gastric secretions. His development of the study of behavior from his study of gastric physiology retained the quantitative as well as the qualitative features of the latter; he measured both the quantity and composition of the saliva, for instance. He also recorded the intensity of the CS (he neglected to measure the US quantitatively) and the differences among various sensory modalities, and he deduced associated shifts in the cerebral cortex of the processes of excitation and inhibition and their interactions.

Pavlov's interest in the CR as a way of studying cortical function led him to propose a physiological theory of conditioning phenomena that involved the processes of cortical excitation and inhibition. He considered afferent stimulation as producing excitation at a particular focus, or point on the cortex, from which the excitation radiated with decreasing intensity. Such excitation he felt, was drawn from weaker to stronger areas of excitation. Thus when a CS was presented, the resulting excitation would be drawn to the stronger focus of the US, eventually resulting in a level of excitation sufficient to elicit the CR. Pavlov felt that the absence of excitation resulted in a state of relative inhibition, also radiating over the cortex, and giving rise to extinction with repeated nonreinforcement of the CR. His experiments erroneously led him to believe that sleep was produced by a spread of internal inhibition, and he attempted to describe the effects of contrasting areas of excitation and inhibition, or what he called *positive and negative induction*, on the patterns of behavior he observed. Using his concepts of excitatory and inhibitory conditional reflexes, he described the movement of conditioned excitation and conditioned inhibition over the cortex as slow processes, taking many minutes instead of fractions of a second, as had been seen with the passage of nerve impulses.

Pavlov also showed that in higher animals, the CR depended upon an intact cortex and was a function of the type, or as he called it, the temperament, of the animal. He did some work on experimental neurosis, and six years before his death in 1936 he attempted, unsuccessfully, to apply his laboratory findings to the treatment of the psychoses, especially schizo-

phrenia. His failure at this endeavor was, in retrospect, probably the result of his neglect of what is perhaps the most important element in human nervous disease: the social involvements and interpersonal relationships that have since been labeled *effect of person*. In this pioneering work Pavlov was important because he substituted objective measurements for subjective judgments in the study of behavior, and he worked for long periods with healthy, intact animals.

The original discoveries have been extended and modified by many others, both in the U.S.S.R. and elsewhere. Gantt (who worked with Pavlov during the 1920s) has continued to pursue this work using many of the methods first employed by Pavlov, supporting, modifying, and extending the original concepts; the work is referred to as *neo-Pavlovianism*.

THE RELATIONSHIP OF CR AND UR

One of the issues surrounding Pavlovian conditioning is the extent to which the CR mimics the UR. Some authors hold that there is a marked difference between the CR and UR; others claim an almost complete duplication of the UR by the CR [15].

In a study of the vestibular system, tilting was employed with blindfolded human subjects. The CR appeared after four to seven reinforcements and was in a direction opposite that of the tilt, i. e., compensatory. In this case the UR and CR were adjustive movements to maintain balance. When galvanic (electrical) stimuli were employed, the UR and CR were inadequate adjustments to inadequately perceived vestibular cues. Duplication of the UR by the CR occurred in both situations [19].

It has also been shown that vestibular balancing mechanisms can be evoked and conditioned in the pigeon, in normal and hemidecorticate dogs, and in normal and neurotic humans. Only in the reptiles (alligators) was there a failure in the evocation and conditioning of the vestibular responses. The CR formed differed from subject to subject in its ease of formation and its specificity and intensity, but in every case the CR was essentially a duplication of the UR. This similarity was found with both galvanic and tilting stimulation. The principle demonstrated here, as in other studies involving simple conditioning, is the simulation of the UR by the CR. It occurs regardless of whether the reaction is useful or harmful to the reacting organism. With more complex organisms and at more complicated levels of behavior, compensatory and delayed responses may occur as introspection and awareness allow the relay of the effects of an act into consciousness and consequent integration. The general rule of the duplication of the UR by the CR is not violated even in these cases. In the

dog, unilateral extirpation of the motor area or of the gyrus cingulus, or even of the whole cortex unilaterally with the opposite gyrus cingulus, did not completely abolish the ability to form vestibular CRs, but there was an impairment in response roughly proportional to the amount of tissue removed. The following points were observed when an attempt was made to condition vestibular reflexes to auditory signals denoting a loss of balance (the US employed were either galvanic currents passed through the head and vestibular apparatus or the mechanical tilting of the blindfolded subject):

- 1 Reptiles (iguanas and alligators) showed some loss of balance but no evidence of conditioning after four hundred repetitions.
- 2 Normal dogs and humans displayed a UR consisting of a rotation of the head about the cephalo-caudal axis with the cathode side uppermost, a lowering of the forepart of the body, often falling to the anode side and occasional vomiting. These responses were conditioned to the auditory signal after a variable number of reinforcements, and this CR persisted without practice for at least eight months. The CR was a duplication rather than a correction of the UR.
- 3 Normal dogs and humans were stimulated by a tilting of the base. The UR was a compensatory movement toward equilibration. Extinction and differentiation were possible. The CR was a duplication of the UR.
- 4 Conditioning was attempted with dogs having unilateral extirpation of the motor area, unilateral extirpation of the gyrus ectosylvius, and complete unilateral hemidecortication and removal of the contralateral gyrus cingulus. Vestibular CRs (loss of balance) could be formed but were highly generalized in form. There was a moderate impairment of the CR under the last of the three conditions [12].

THE CARDIOVASCULAR SYSTEM

Despite the age-old knowledge that changes in heart rate occur with various emotional and physical states and the enormous advances made by physiology and cardiac medicine in the modern era, almost nothing had been done on the question of its participation in the individually acquired habits of conditional reflexes until recent decades.

The cardiac reactions are delicately adjusted to learned excitation and inhibition, to the orienting response, to environmental stimuli, and to

definite time intervals (time reflex). They appear to be the most delicate measures of intensity of the learned response and of inhibition.

In 1939–1940, Hoffman and Gantt, using food as the US, demonstrated that there was not only a specific cardiac CR for conditional excitation and inhibition but that the magnitude of change in the heart rate was proportional to the amount of the UR (food); there was a quantitative relationship between the US and CR [11].

This response proved to be particularly sensitive. The manifold connections of the heart with nearly all other activities of the body often mask its participation in the CR unless specific measures are taken to exclude these influences [8]. The greatest interference is that occasioned by the presence of the experimenter, who is a potent accelerator or, under other circumstances, decelerator of the heart rate [13]. Another interference is the cardiac fluctuation accompanying the orienting reflex, which has to be eliminated before the initiation of the conditioning process [29]. This, of course, under nonexperimental conditions, is not eliminated and consequently can be expected to block such processes. It would be of interest to consider the biological role of such a blocking effect.

There is a parallel between the heart rate and other components of the CR — for example, salivation and movement — but this is only a general one, and there are important and fundamental exceptions. Like the salivary CR, the cardiac CR varies according to which analyzer (cortical sensory area) is used for the signal; it is larger with auditory signals than with visual stimulation under the experimental conditions. The cardiac CR also varies with the intensity of the US. To the signals for ten grams of food, for instance, the heart rate change is greater than to signals for only two grams of food. Additionally, as is true with most other functions, the change in heart rate is highly characteristic of each person.

One of the remarkable aspects of cardiovascular conditioning is the extent to which the emotional state of the animal is a factor in determining the nature and duration of the CR. Pathological tachycardia, as well as hypertension, can develop on this basis. A number of dogs have been noted in which response to a return to the experimental environment and conditions in the form of tachycardia has persisted for many years. In two dogs trained in 1951, whose heart rate and blood pressure were measured thirteen months later, the rise that developed during the conditioning was found to persist upon the return to the experimental milieu after a year's rest and freedom from experimentation. The rise took place immediately on returning the dogs to the environment, to the camera (experimental chamber) where they had been run. The heart rate rose to the signals for stress, twenty to fifty beats during the CS, even though the stressful shock stimulus was not presented [10].

Comparing the easy conditioning of the cardiovascular function with that of the motor system we see, as Pavlov had already shown, that conditioning is as readily accomplished with autonomic functions as it is through the somatic nerves. Consciousness is not always necessary to form a CR or its later expression, depending on the situation. Not all functions, however, can become CRs. The dividing line is not on the basis of consciousness, autonomic or somatic function, or the nature of the stimulus. Rather it seems to be related to the physiology of the system and the duty that it performs in the general body economy. We must examine the role of the system in preserving the homeostasis of the organism. This consideration led to the formulation of the concept of organ-system responsibility [9].

LIMITATIONS ON CONDITIONING

Evidence accumulated from a series of experiments indicates that limitations must be placed on conditioning as a result of the structure of the organism. In higher animals these are anatomic (damage to the brain, surgical procedures), organ-system responsibility (the role of the organ in the body economy), and whether the CR is part of a central state or only peripherally produced (termed *centrokinesis*). The following experiments illustrate these points.

Even though reports appeared in the early 1930s claiming the conditioning of antibody formation, the results were of low significance and questionable. This work, however, prompted a long series of experiments, extending over many years, comparing the conditionability of functions that did not involve the central nervous system (CNS) with those mediated by it. In no case could responses not involving the CNS become CRs. Stone and Gantt attempted to condition changes in leukocyte count caused by cold stress [31]. The US consisted of a plunge into iced water for one minute from the upper compartment of a sound-insulated box. The CS was an air blast (aural and tactile stimulation) for ten seconds preceding the US. The results showed either that there was no conditioned neutrophilia or that neutrophilia was formed during the early conditioning trials but disappeared with adaptation to the US. If, in fact, conditioned neutrophilia was never formed, there may be two possible explanations. The first is that neutrophilia cannot be conditioned because it is not mediated through the CNS. The second is that the UR may drop out too quickly through adaptation to cold to allow conditioning to take place. Similar failures to condition the rise of hyperglycemia from the injection of epinephrine indicate the necessary contribution of the CNS,

since the epinephrine, in producing hyperglycemia, acts directly on the tissues rather than through CNS processes.

The inability to condition an action that is not mediated through the CNS was called *centrokinesis*. It is not necessarily the action itself but how it is mediated that is the important element in conditioning. Thus when the heart rate is part of a central emotional state, it is readily conditioned; but when it is produced by acetylcholine chloride or epinephrine, both of which change the heart rate by acting on the peripheral nerve endings, such a heart rate does not become a CR [32,33].

After a decade of investigating the possibility of forming renal diuresis on the pattern of the salivary CR, there was a failure to confirm the reports of Bykov in the U.S.S.R. and from Neal Miller's laboratories in the United States that the kidney was susceptible to the conditioning process, as is the salivary gland [4,17,18,25]. There may, however, be a brief inhibitory conditioning of renal diuresis. Contraction of the bladder resulting in urination is, on the other hand, readily conditioned, as a number of investigators have reported. It is not possible to obtain a positive conditioned diuresis.

Interest has centered for many years on the specific elements of the internal environment basic to the establishment of the CR. The reflex arc consists of an external receptor organ, a sensory afferent nerve, the pathways and cellular junctions in the spinal cord leading to synapses in the cortex, and the motor or secretory areas of the brain, the efferent nerve and the executor organ, usually muscle or gland. Other elements are the ancillary pathways involving sense organs and the central cortical connections in the physiological or unconditional reflex arc. Studies have been carried out relative to which elements of this reflex arc are essential for the formation of the CR.

CR studies conventionally have involved the reaction of the individual to the external environment, emphasizing events at the periphery of the organism. In 1934 Light and Gantt began the analysis of the role played by the different divisions of the reflex arc: external sense organ, centripetal (sensory) nerve, spinal cord, cerebellum, cortex (sensory and motor areas) peripheral nerve, and executor organ (muscle or gland). By the successive elimination of these various structures, it became apparent that none of the structures outside the CNS was essential for CR formation and that probably only the brain of the higher animals was necessary [7,16].

Pavlov included the internal universe when he introduced the idea of temperaments, and in contradistinction to the extreme behaviorists, he theorized about the internal mechanisms, including both the internal and external universe. Investigations have shown the importance of the internal universe in the formation of the CR and in behavior. Prolonged stud-

ies of dogs have indicated that CRs are continually being formed entirely within the organism; stimuli arise within the brain without peripheral nerves, regardless of whether they were afferent, autonomic, or efferent (executor) nerves.

From these experiments showing that new CRs develop over time independently of the external environment, the concept of a CR formed entirely within the CNS, without the benefit of either sensory endings or of the peripheral executor nerves (either motor or secretory), could be deduced; this phenomenon is called *proflex*. Proflexes probably only occasionally involve consciousness.

The homeostasis of Cannon [5] the constancy of the *milieu intérieur* of the great Claude Bernard [1] have become the dogmas of mid-twentieth-century psychophysiology. That the living structure meets otherwise disrupting change, maintaining its equilibrium in a hostile outside world and a fluctuating internal world is evidence of the overall teleology of such homeostasis.

PAVLOVIAN CONDITIONING AND PROBLEMS IN HUMAN BEHAVIOR

The CR work begun by Pavlov has found clinical applications far beyond those ever thought possible by Pavlov himself. In his later life Pavlov attempted to apply his research findings to hospitalized psychiatric patients. He thought his observations on neuroses experimentally induced in animals would help him to understand and treat acutely disturbed psychiatric patients. His therapeutic attempts, however, met with little success. His failure stems from three sources. First, Pavlov's original observations were made on animals totally isolated from all social stimuli. Therefore Pavlov overlooked the entire realm of interpersonal relationships in the formation of neurotic and psychotic processes. Second, whether neuroses are strictly phenomena of conditioning (i.e., difficult discriminations) independent of emotional factors and genetic predisposition was opened to question. Third, and perhaps most important, is the question of whether schizophrenic processes are exclusively a human phenomenon.

One of the clinically relevant uses of Pavlov's techniques involves the assessment of cortical function in patients. Work with the CR has been applied by Gantt and others in determining the status of a patient with respect to his ability to learn, to establish rapport with those around him, to differentiate psychogenic from organic bases for mental disease, and to assess the damage of electroconvulsive treatment (ECT), leukotomies, and so forth. Some of the procedures used have involved an eye blink CR to a

tap at the root of the nose, avoidance responses to a faradic shock applied to the finger, and the psychogalvanic response. The procedure found most useful requests the patient to identify the various stimuli by name, tests the threshold for perception and pain in the hand, and then repeats each pair of signals five times before reinforcing one signal with an appropriate level of shock stimulation. The patient is then told to press a lever when he expects a shock. If the patient learns the difference between excitatory and inhibitory signals, he is graded *A*; some impairment is graded *B*, and marked impairment with an inability to differentiate the stimuli is graded *C*. In addition to the motor, respiratory, and cardiac recordings, the psychogalvanic response can be measured. It is generally parallel to the other measures but is usually grossly impaired in organic cases and less so in functional disorders [28].

Clinical approaches today that use Pavlovian techniques to treat behavioral disorders are generally encompassed in the field of behavior therapy. Beginning with the observations of Pavlov and John B. Watson, investigators Wolpe, Salter, Reyner, John Paul Brady, and many other investigators have been using both operant and Pavlovian conditioning techniques in successful attempts to alleviate a broad range of behavioral and psychosomatic problems [2,3,14,35,36]. They have been especially successful with disorders labeled as neurotic or psychosomatic in character and less so with more acutely disturbed types of disorders, such as schizophrenia.

It has been a general assumption of the behavioral approach that many of the pathological responses and symptoms seen in patients have been CRs reinforced by fear and anxiety. Such CRs do not extinguish because of the internal nature of the UR, which does not depend on external events for its elicitation. Through the concepts of reciprocal inhibition and systematic desensitization, competing responses that are not compatible with anxiety may be paired with repeated presentations or visualizations of a disturbing stimulus constellation, effecting an extinction of the symptomatic CR.

The clinical field of behavior therapy has become a highly refined discipline and is attempting to develop systematized research methods to evaluate the therapeutic efficacy of its techniques. Questions still remain, however, about the extent to which behavioral changes are brought about primarily by the presence of the therapist.

One of the areas Pavlov identified that needs further exploration in terms of understanding psychopathology is the question of the interaction of conditioning processes with genetic predisposition to produce abnormal behavior. In recent years the work of Scott and Fuller at Bar Harbor, Maine, as well as the work of Oddist Murphree, Newton, Dykman, and their colleagues at Little Rock, Arkansas, has suggested that both genetic

inheritance and conditioning are important in producing abnormal behavior [26,30,34]. Murphree and his colleagues, for example, have developed a strain of normal and severely abnormal dogs, bred from the same original litter, which showed markedly different patterns of behavior. Among the more interesting abnormal behavior patterns they have developed is an analog of catatonic stupor genetically bred in these dogs [27]. These scientists have also observed that the autonomic nervous system of these dogs is also quite different from that of normal dogs. Perhaps of greatest interest is the fact that the dogs' autonomic reactions to social contact are markedly disturbed [27].

Another aspect of work developed from Pavlov's model is the recognition of the biological significance of social contact. Pavlov isolated his animals from all social contact because he noted that the dog was responsive to all types of contact, especially to human contact. This was a serious empirical problem for Pavlov, and it initially prevented him from studying conditioning in dogs because they were always being distracted by the human. Consequently he developed sophisticated experimental chambers to isolate the animal from all uncontrolled environmental and social stimuli. This development was refined and rigidly adhered to by almost all psychologists and physiologists. Much current research continues to look upon social isolation as a necessary prerequisite; the Skinner box, for example, enables the rat to be placed in a box all alone.

Social contact was shown to be important in the Pavlovian conditioning paradigm when attempts were made to condition the cardiovascular system. It was observed in this research that the cardiovascular system of dogs was remarkably responsive to human contact, in fact, so remarkably reactive that it became difficult to ignore this biological phenomenon. Therefore, in an ironic fashion, Pavlov's isolation chamber was used to study the very thing it was developed to control: human contact. The observation that social contact is a powerful cardiovascular stimulus has led to the conviction that a great deal of physical illness, especially cardiovascular disease, may relate not only to early conditioning phenomena but, more importantly, to disruptions in social relationships both at an early age and in later life [20]. Even within clinical settings such as coronary care units and other intensive care units, human contact has clinically important effects on the human heart [22,24].

One final aspect of Pavlovian conditioning needs to be briefly described: the conditioning of drug reactions. This description could be accomplished by referring to drug addiction. In Pavlovian terminology, any stimulus that acts through the central nervous system will elicit physiological reactions that can be conditioned if certain preconditions are present. Like food, shock, or any other physiological reinforcer, pharmacological agents are also unconditional stimuli that elicit unconditional reactions. If

such reactions are evoked by the central nervous system, then they can be quickly conditioned. Such a process has more than empirical interest, however; it also has direct clinical ramifications. Alcohol, for example, is an unconditional stimulus that elicits unconditional physiological responses. The question then is, Can such alcohol reactions be classically conditioned? The evidence is overwhelmingly positive. Thus the next question becomes, How and under what circumstances will such reactions be extinguished once the alcohol is removed? It is our belief that for the alcoholic a blinking barroom light or a glass or a bottle can become conditional stimuli which can elicit conditional responses in the body. It has been our experience that such reactions, once conditioned, are quite difficult to extinguish and therefore potentially addictive. What then is conditioned? It is our belief that the bodily reactions (autonomic neurophysiological and biochemical) evoked by drugs such as alcohol and morphine can be elicited by conditional stimuli that are paired with these drugs. This entire area needs more study, but if indeed conditional reactions can duplicate unconditional reactions, then it is at least theoretically possible that the body manufactures its own addictive agents through conditional processes [21,23].

Assuming for the moment that such a situation does exist, then the question becomes, How does one help extinguish such addictive conditional reactions once they have become established? Since the conditional reactions are occurring at the autonomic and perhaps cellular level and therefore are out of the person's conscious awareness, then exclusively conscious attempts to control such reactions are not likely to meet with success. The control or extinction of such reactions will have to involve extinction that is also not entirely in one's consciousness.

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5

Perception

Aleeza Cerf-Beare, Ph.D.

Speculation about how we perceive the world around us is probably as old as the earliest cave drawings of our hominid ancestors, for in such drawings inhere some of the questions asked throughout centuries by artists, philosophers, and eventually biological and social scientists: How does the three-dimensional world become transformed into a two-dimensional image? This question, in turn, addresses all of the major areas of perception investigated by behavioral scientists: depth and distance perception, perceptual constancies, the perception of real and apparent motion, the discrimination and classification of colors and patterns, and perceptual illusions. As new knowledge becomes available about the nature of any of these functions or about the relationship between two or more of them, we move nearer to the solution of the overall question of how the information impinging upon our senses from the physical environment is transformed and integrated into behavior.

The bulk of our knowledge, data, and theoretical and methodological formulations have been amassed in the course of observations and research into the nature of visual perception. Of all the sensory modalities, this is the one about which we probably know the most, and this fact is reflected in virtually all texts on perception. The reasons for this uneven emphasis are several. Historically artists attacked the problem because of

their obvious interest in visual representation; the early philosophers were able to use demonstrations that frequently dovetailed with early discoveries on the physics of light and physiological optics; the most important one is that the eye represents an opening to the brain inasmuch as the retina is a piece of neural tissue which embryologically migrates outward and thus affords the physiologist a relatively simple access to observations on processes assumed to parallel those involved in central processing in the brain. Thus a large body of observations and data about visual perception had accumulated before the study of sensory processes and perception developed into the formal area of inquiry of today, which includes all other modalities. Inevitably the findings from vision and the methods of its study formed the main point of departure for the study of all sensory systems.

The term *sensory (or perceptual) systems* indicates that we have come a long way from the Aristotelian classification which decreed that people have five senses. Today we look at the overall information-processing functions served by our senses and then group them according to such functions. Table 5.1 presents one such scheme, resulting in an overall fourfold (or fivefold) classification (which is by no means exhaustive or final). The nature of the table indicates a number of problems still to be addressed in our fundamental thinking about perceptual systems. One of these deals with the question of whether there is in fact a sense of time (the fifth classification). Existing psychophysical data are sparse, yet suggestive; the limited findings on the influence of body temperature on time perception indicate an interesting and as yet underdeveloped area of research [64]. A genetic mechanism, postulated for the temporal regulation of circadian rhythms, provides an interesting new inquiry into possible interactions between light or temperature cycles with biochemical determinants — the Chronon genes [7].

Another problem concerns the perception of pain and whether it should be classified as a separate system or one keyed to other modalities. My preference for the latter position is inherent in the structure of Table 1.1. This position seems to me parsimonious and at the same time accommodating recent theoretical positions on the transmission of pain information and its assumed processing by higher centers [59]. Finally Table 1.1 demonstrates how extensive the scope of each system is. Each sense modality has at its most fundamental level two codes of transmission — one for quantitative and one for qualitative information from the environment. These separate codes are better known for vision and audition than for some of the other senses, but we can assume that such differential codes probably characterize all systems and have their counterparts in perceptual processing and thus in behavior.

Table 5.1

CLASSIFICATION OF SENSORY-PERCEPTUAL SYSTEMS

Adaptive demands to source of stimulation	Form of stimulating energy	Sense modality/receptor organ	Receptor code/Behavioral response	
			Quantitative	Qualitative
Response to objects in physical space	Electromagnetic radiation	Vision/eye	Intensity (brightness)	Achromatic-chromatic (scotopic-photopic), orientation, motion, depth
	Mechanical (pressure, vibration)	Audition/ear	Intensity (loudness)	Frequency (pitch), timbre(?)
Response to external somatic stimulation	Mechanical, thermal, electrical, chemical	Cutaneous/skin	Intensity	Pressure, hot, cold, pain(?)
Response to internal somatic stimulation	Mechanical (internal pressure, stretch-flex)	Kinesthetic/muscle, joint	Intensity	Limb position, limb coordination, pain(?)
	(external motion, gravity)	Vestibular/inner ear	Acceleration	Body position, motion direction
Response to chemical stimulation	Chemical (in given solution at given temperature)	Taste/tongue, lips, side and back of mouth	Intensity (concentration)	Salt, sweet, sour, bitter
			Intensity (concentration)	Flowerly, foul, fruity, spicy, burnt, resinous
Response to time duration change	Light/dark cycles or temperature changes	Smell/nasal cleft	Intensity (concentration)	Differs as a function of body temperature (?) eclosion and reproduction rhythms

PHILOSOPHICAL-HISTORICAL PERSPECTIVE

The modern era for the study of perception can properly be said to have opened in the sixteenth and seventeenth centuries and the philosophical debates regarding the nature of knowledge and knowledge acquisition. The nativist position of René Descartes suggested that since knowledge, and indeed all behavior, is innate, experience is irrelevant; the empiricist point of view held that nothing is known except through experience, and such experience begins with sensory input [67]. Thus began an examination of sensory input as related to the acquisition of knowledge. Nativist writers (Descartes and Malebranche) did not ignore sensory input. Indeed their writings show great sophistication about the anatomical details of the visual system and attest to the fact that their knowledge was based on extensive dissection. They viewed the system as independent, however, and parallel to, not interacting with, what we today consider the total processing of sensory input. The empiricist point of view developed in England in reaction to this position. Locke's treatise opened the debate by arguing that the mind at birth is a *tabula rasa* and that sensory impressions form the early elements of experience. These elements then combine or become associated with other elements and experiences, and thus knowledge gradually is formed and built up in the mind. The idea of such associations is so central to the empiricist theory of knowledge acquisition that the school of thought is also known as the associationist school of philosophy.

Berkeley, following in Locke's footsteps, developed this notion in greater detail. Associations are twofold in nature. In the first place, two sensory impressions become associated through frequency and simultaneity to form a single impression or idea. Thus we recognize, or know, an object because of our simultaneous experience of it through touch and vision, for instance. Berkeley, in fact, thought that touch is of primary impact as the most basic sense. In the second place, since sensory impressions occur in specific contexts, other events experienced in these contexts become associated with the sensory impressions, and thus ideas develop on the basis of these associations. The sound of an approaching coach changes as it draws near, and such experience, according to Berkeley, gradually leads us to develop the concept of distance as implied by our discrimination of differences in sound. In visual distance perception, subtle physiological cues from lens accommodation and eye convergence are unconsciously discriminated and thus become associated with the idea of size-distance differences.

A major touchstone of these theoretical formulations (Locke-Molyneux Letters) [67] would have been the case of an adult, born blind, who experiences sight for the first time and must learn to see. Such a case

was actually reported in 1728 (the Cheselden case), and the patient's report, though scant, was used by Berkeley to substantiate his theory of the association of touch and sight. Subsequent writers have taken issue with Berkeley, not only with regard to this particular association but also about the validity of invoking this brief case history to substantiate the theory. A less celebrated but more widely documented case history was published in 1826 by Wardrop; it did not substantiate Berkeley's assertions about touch, but it lent considerable credence to the original Locke-Molyneux prediction. Modern data further confirm that the processing of visual information is indeed not automatic but must be learned by the lately sighted [72]. Such learning, as we know now, is different, however, from that of the normal perceptual learning of a sighted developing infant [16].

The empiricist-associationist hypothesis that perception develops along with the developing child was further argued in the eighteenth century, particularly by the Scottish philosophers, of whom Reid was the first to define sensation and perception. Pastore, quoting from the 1901 edition of the *Dictionary of Philosophy and Psychology*, reproduced the definitions "Sensation: Subjective state produced by an external stimulus without implying an awareness of an object. To have a sensation is merely to have a certain kind of feeling due to an impression on the organs of sense. Perception: To be aware of an object by means of a present sensation" [67]. This distinction remains useful and usable today. It implies a separation between raw sense data, which are now studied in the neurophysiological laboratory, and perceptual data, which are studied in the behavioral laboratory. Above all it presupposes a linkage between the two forms of experience and the processing of sensation as yielding perception (behavior).

As often happens in the history of science, two initially opposing points of view began to converge as each was developed and elaborated. Thus the British associationist philosopher John Stuart Mill and the German nativist philosopher Immanuel Kant both developed the notion that perception is neither wholly learned nor completely innately determined. In stating that "the whole is more than the sum of the parts," Mill suggested that although we are aware of and affected by individual input elements to the sensory system, we respond by combining the elements and responding to them as a whole — an idea also used by the Austrian philosopher v. Ehrenfels and later elaborated by Wertheimer and his colleagues in Germany as Gestalt theory. Kant postulated a capacity of the mind to structure and restructure our perceptual world in accordance with a priori principles which are available to the mind and are independent of sensory elements or input.

Thus a picture emerged in eighteenth- and nineteenth-century philosophy of the mind as having specific sensory capabilities and determinants for perception (the doctrine of specific nerve energies) and,

beyond these, a special ability to combine incoming sensory stimulation and impose structure upon the stimulus elements. These ideas led to the study of perception *qua* perception, and no longer as an antecedent to a theory of knowledge acquisition. The most important cornerstones of this new era in the study of perception are the work of Helmholtz on vision and audition, which provided basic data and theories on sensory-perceptual functional relationships, and the work of Weber and Fechner, who developed the behavioral methods to study perceptual functions. The stage was now set for the study of the two basic areas of perception — neurophysiology and psychophysics. These increasingly modern methods of research led to an accumulation of data and new knowledge about receptor codes and behavioral response to specific sensory stimulus configurations and the intricate relationships between these.

BASIC RESPONSE FUNCTIONS

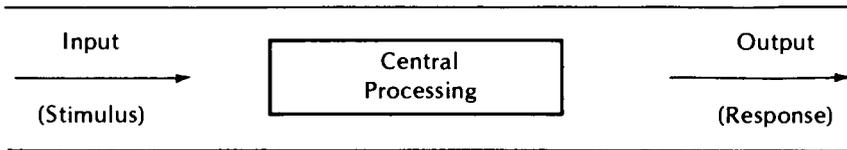
Perception serves as the most important mechanism in species survival and adaptation. The spatial modalities (Table 5.1) facilitate efficient navigation in space to obtain food, as well as to avoid becoming food for one's predators. Examples of highly specialized adaptational developments are the hawk's visual acuity, the bat's capacity for echolocation, and the motion detectors possessed by the eyes of many amphibians. The skin senses permit the organism to remain aware of more immediate stimulation from the environment and regulate its input, thus making it possible to maintain and monitor a "comfort zone" around one's body. By means of the kinesthetic and vestibular sense, the organism is equipped to monitor its internal environment by constant feedback from its own activities, as well as respond to special forces from the external environment which impinge directly on the body.

These latter modalities — the skin, kinesthetic, and vestibular senses — may also play an important role in the normal development of the young of the mammalian species, notably primates and man. Harlow's work [37] on infant monkeys reared with cloth and wire surrogate mothers demonstrated that animals so reared manifest abnormal social and emotional responses as adults. It can be argued that the constant sensory stimulation to the skin and the body senses (contact comfort) available to an infant who is being carried, handled, stroked, and touched plays a fundamental role in his normal emotional and social development.

The chemical senses enable organisms to select or reject nutrient materials and to track prey and evade predators. Territorial boundaries are chemically marked and sensed, and communication with species

members and mating are largely dependent on chemical sensing. These senses therefore are crucial to the survival of the individual and the species by affecting different behavioral functions.

While physiologists are trying to understand the mechanisms by which these sensory systems function, psychologists are interested in the behavior which attends the sensory functions and how such behavior varies (or can be made to vary) as a function of experimentally manipulated stimulation. The latter involves mapping the perceptual modalities in terms of the most fundamental information-processing paradigm,



where the input is defined as some specifiable form of physical energy, and the output as an operationally predetermined segment of behavior (e.g., a verbal report or the pressing of a key). This was the point of departure for Fechner in formulating and applying his psychophysical methods to perceptual functions, and it has fundamentally not changed [24]. These methods address the basic questions of how acute the sensory system is and what the total range of the system's sensitivity is. The problem of acuteness is concerned with the detection and discrimination of minimal energy, while the problem of range is concerned with the subjective scaling of energy ranges.

Detection and Discrimination

The acuteness of a perceptual system is indicated by two types of measures, the absolute threshold (AL) and the difference threshold (DL, or JND, just noticeable difference). The threshold concept is familiar from physiology but operationally somewhat different in psychophysics. In physiology it is defined as the minimal amount of energy required to change a cell's resting potential into an action potential. Since this change obeys the all-or-none law, threshold determinations for individual cell types are relatively reliable. With human observers we ask the subject to respond in one way to the presence, in a different way to the absence, of a stimulus presentation. Even though this is a simple task, experience has shown that there is a variability between and within individual observers in their responses on repeated trial runs. In other words, the totally func-

tioning in vivo observer is less reliable than the isolated in vitro neuron when it comes to the detection of the absence or presence of minimal amounts of stimulus energy. It has therefore become necessary, along with instituting rigid procedural (experimental) controls, to specify psychophysical threshold in terms of its statistical probability. Thus it is not enough to define it as the amount of energy that will evoke response x but the amount of energy that will evoke response x with a given probability (usually but not necessarily 50 percent).

Psychophysical analysis is interested in two types of sensitivity. In the first, the system detects the introduction of some minimal amount of stimulus energy where none was present before, leading to the determination of absolute threshold [32]. The second refers to the detection of the minimal amount of stimulus energy added to a specified amount of prevailing energy, leading to the determination of difference threshold (i.e., JND).

In all perceptual modalities the difference threshold is virtually constant for the middle portion of the total perceptible range (Weber's law). The amount of energy increment (or decrement) detectable at the lower and higher ends of the range are proportional to these differing energy levels. Thus any processing paradigm must take into account this nonuniformity in levels of processing which are determined by the prevailing state of adaptation of the sensory organ in question.

The response variability alluded to earlier also potentially affects the stimulus-response (S-R) paradigm. Early researchers in psychophysics attributed such variability to "psychological fluctuation" and assumed them to be distributed normally [48]. Modern perceptual research adopted a similar approach with the methodology of signal detection theory [34]. Within this conceptual framework the perceptual modality is regarded as a communication channel with the accompanying noise inherent in such a system. The stimulus is regarded as a signal which can be successfully transmitted only if the signal-to-noise ratio is favorable. In perceptual research this ratio is manipulated by manipulating the observer's response bias. The proportion of signal plus noise (versus noise-only trials) can be varied by introducing a special payoff matrix or by some combination of these as experimental variables. The observer's response strategy is assumed to shift to reflect these manipulations. To the extent that it does, as evidenced by the resulting receiver operating characteristic (ROC) curve, conclusions about his relative detection or discrimination sensitivity (d') are drawn. Thus instead of thresholds, we use the concept of sensitivity, which takes into account not only the stimulus-response relationship but the probability factors affecting the observer's decision processes [51].

Scaling

The question of how reliable the perceptual system is at subjectively evaluating given ranges of a stimulus dimension was addressed for over two decades by Stevens [80] in an effort to show that such functions are predictable and characteristic of particular perceptual functions. In the scaling task, the observer is asked to provide subjective estimates to several series of stimulus intensities by one of a number of different experimental strategies. When the estimates are combined for a range of stimulus intensities, they can be fitted by an exponential curve. Stevens' results provide a large number of such curves covering a wide variety of perceptual functions. He showed that each modality task could thus be characterized by the exponent obtained for the power function which could be fitted to the curve, and he felt that such data more validly describe perceptual function than do threshold data. Stevens' work has been widely applied and used as a basis for further research, as well as by using the exponents as industrial guidelines for setting tolerance levels for noise, for instance. Moreover his formulation permits a direct comparison between and within sensory modalities, as well as groups of observers, and therefore remains useful both for research and clinical application or diagnosis.

STIMULUS DIMENSIONS AND FUNDAMENTAL PROCESSING MECHANISMS

The stimulus-response relationships can demonstrate how the perceptual system exploits available amounts of energy that vary in spatial and temporal distribution. Initially this is best illustrated by showing how the visual system exploits minimal energy input.

Spatial and Temporal Integration

The total energy requirement for vision at threshold is composed of luminance (L), area (A), and duration (T), and a reciprocity principle between any two of these components can be demonstrated. In temporal integration (Bunsen-Roscoe law), with A held constant, L and T become reciprocal, that is, a subthreshold luminance can be rendered visible if the duration of exposure is increased. Thus there is a range of luminance and duration values for which threshold response is constant, up to a critical duration. The psychophysical functions, provided by describing these interchangeable relationships, were originally derived by Blondel and Rey

and by Karn [32]. They were also demonstrated by Hartline [70] in the activity of single nerve fibers of *Limulus*.

In spatial integration (Ricco's law) there is an analogous reciprocity between L and A (with T held constant). A subthreshold luminance can be rendered visible if its area is increased proportionally. That this capability of the system is based on spatial summation was originally shown by Adrian and Matthews [1]. Working with the eye of the conger eel, they obtained a response with four weak spots of light, not too widely separated, which was comparable to the response obtained with an increase in area. Psychophysically Graham, Brown, and Mote [33] showed that the relationship holds best in the dark-adapted eye and at rod intensity levels. By mapping thresholds for various size-luminance relationships, they suggested a model of retinal element interaction which largely predicted the center-surround organization of retinal units.

The perceptual system thus is constantly at work to maximize its own response probability, even when stimulus input is minimal. This applies also under conditions of binocular vision. Two weak stimuli presented to both eyes simultaneously will lead to a threshold response; each stimulus alone, presented monocularly, gives no response [32]. The time-intensity reciprocity has also been observed in experiments in auditory perception [27]. As tones of middle frequency become progressively briefer, the power of the tone must be increased to achieve threshold. Analogous findings for both temporal [57] and spatial [49] reciprocity have been obtained for cutaneous sensitivity.

Excitation and Inhibition

In addition to the sensory system's mechanism for capturing diffusely distributed energy by summation there is the mechanism of lateral inhibition. It was first demonstrated by Hartline in a series of experiments on *Limulus*, whose compound eye provides the kind of preparation most useful for experimentation with single receptor activity and for the inferences from it for mammalian retinal function [70].

When a single receptor is exposed to steady illumination, the frequency of its output is directly related to the intensity of the light, with high intensities producing high excitation frequencies and vice versa. Thus neural excitation, in the simplest paradigm, follows stimulation. On the other hand this same receptor will be inhibited from responding to stimulation if neighboring receptors are activated at the same time. This suppression of one fiber's activity by another's is caused by lateral inhibition. Lateral inhibition does not imply that activation of one receptor necessarily completely shuts down its neighbor (though this does occur).

Rather it has been shown that the relative difference in illuminating intensities, as well as the distance of the units from one another, will affect the frequency of the neural output of the inhibited unit. As the stimulating intensity is moved farther away, disinhibition will occur, and the unit will again act in terms of its initial excitation [71].

Lateral inhibition can be shown to be an all-pervasive neural mechanism for sensory and, as we shall see later, perceptual function and is probably responsible for the finding that sensory systems respond best to changes in stimulation, rather than to absolute or continuous levels of stimulation. Werblin [89] has shown that lateral inhibition works on at least two levels in the retina, one by horizontal cell processes and the other by amacrine cells. These provide a basis for neural spatial integration whereby each optic nerve fiber would connect to an area in the retina which excites the fiber while surrounding retinal regions inhibit it, or vice versa. This fits in well with the existence of center-surround units in the retina, i.e., cells with a concentric organization of their receptive field. A spot of light in the center of the field excites the cell; stimulation of the surround will inhibit it, or vice versa [53]. Such units are considered to be feature detectors. These are found in the retina; there are others in the cortical projection areas, with which the peripheral units interact.

The important feature is that perceptual processing begins, after the initial sensory input to the periphery, by the action of the specialized receptors, their particular spatial and temporal characteristics, and by the agonistic-antagonistic relationships which characterize their interconnectedness and their interaction.

Quantitative and Qualitative Mechanisms

Table 5.1 indicates that receptor codes and behavioral responses interact with stimuli on the basis of both quantitative and qualitative S-R relationships. The two modalities that we know the most about, vision and audition, have been shown to have well-defined qualitative response characteristics, based on the measurement of discrimination and other functions. In vision the first distinction, based on the duplicity theory, is between the scotopic (rod) and photopic (cone) system [13]. Rods and cones differ in morphology, function, location on the retina, functional connection, and visuotopic projection. Above all they differ in the molecular composition of their photopigment, which is assumed to be primarily responsible for their differential sensitivity to light as shown by the dark adaptation function in Figure 5.1. Rods, having low light thresholds, provide for vision at low light levels; cones, having a higher threshold, provide for daylight and hence also for color vision. Cones are densely

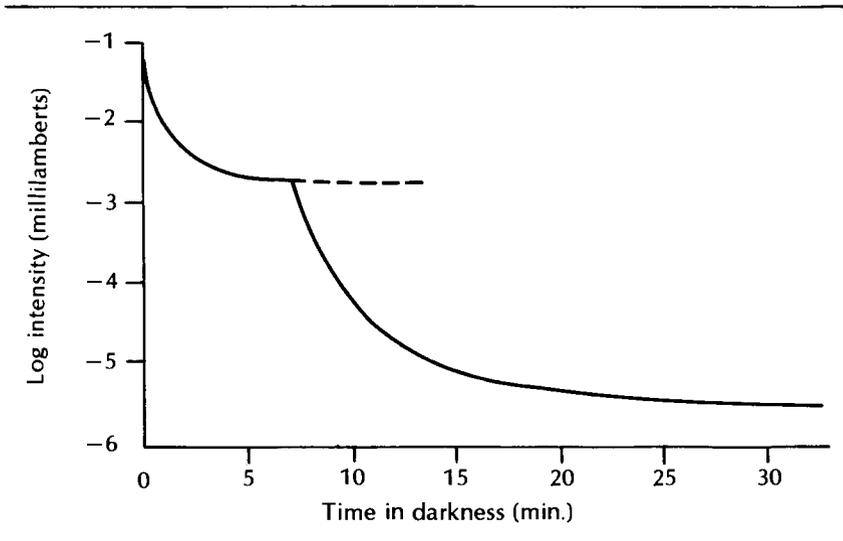


Figure 5.1

The time course of reduction in a light detection threshold during dark adaptation. The initial branch of the curve is associated with photopic vision and is attributed to cone function. The later branch is often called the *scotopic branch* and is associated with rod function. After J. L. Brown, *Sensory Systems*. Copyright © 1973 by Williams and Wilkins Co., Baltimore.

packed in the center of the retina — the fovea — while rods are less densely distributed and are located in the periphery. Each cone has its own direct connection to the first processing center in the brain, the lateral geniculate nucleus (LGN), where the first synapse occurs. For rods the connection is not as direct: several rods synapse on one common fiber, which then goes to the LGN. This relative difference in density, location, and connectedness is reflected, for instance, in the acuity function (Figure 5.2).

While rods can be distinguished from cones on the basis of the attributes mentioned above, there are no definitive clues by which to tell one type of cone from another or to determine exactly the basis for the differing response to different wavelengths of light. To quote Isaac Newton:

. . . For the Rays to speak properly are not coloured. In them there is nothing else than a certain Power and Disposition to stir up a Sensation of this or that Colour. For as Sound in a Bell or musical String, or other sounding Body, is nothing but a trembling Motion, and in the Air nothing but that Motion propagated from the Object, and in the Sensorium 'tis a Sense of that Motion under the Form of Sound; so Colours in the Object are nothing but a Dispo-

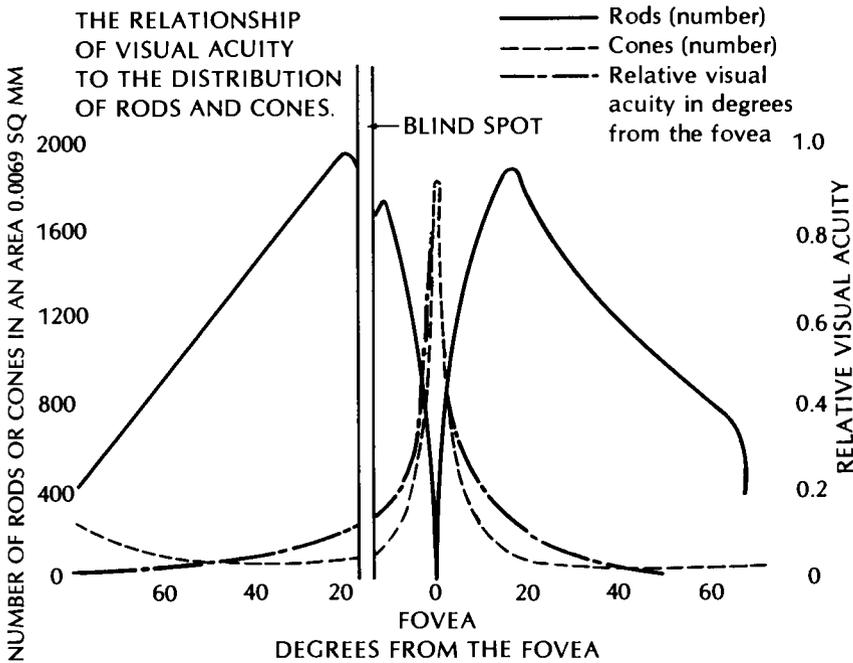


Figure 5.2
 Distribution of rods and cones along a horizontal meridian. Parallel vertical lines show the limits of the blind spot. Visual acuity for a high luminance as a function of retinal location is included for comparison. After J. L. Brown, *Sensory Systems*. Copyright © 1973 by Williams and Wilkins Co., Baltimore.

sition to reflect this or that sort of Rays more copiously than the rest; in the Rays they are nothing but their Dispositions to propagate this or that Motion into the Sensorium, and in the Sensorium they are Sensations of those Motions under the Forms of Colours [93:2].

The subjective qualitative experience of color has, since Newton's time, been evaluated in many laboratories and with a number of different techniques such as color matching, hue discrimination, and color naming. Research in color vision is based on two originally rival theories: the Young-Helmholtz Trichromatic theory [86] and Hering's opponent-colors theory [43]. The trichromatic theory proposed three separate types of cone (red, green, and blue), each endowed with a differentially sensitive pigment, and signals from each type of receptor carried by its own pathway to the brain. Our ability to experience colors of many shades were assumed

to be accomplished by a process akin to color mixture, with signals being added or subtracted, in accordance with incoming wavelength information being carried to the brain. The theory explained much of the empirical findings of color vision, but some problems such as that of complementary hue and of colored afterimages did not fit well. These were better accounted for by the opponent-colors theory, which also proposed three types of receptor but suggested that each has a dual function, i.e., white-black, red-green, yellow-blue, indicating that the cones for hue are separate from those for brightness. It also proposes that the process for red would cancel that for green (and vice versa), and the process for yellow would cancel that for blue (and vice versa), thus accounting for hue complementarity and possibly chromatic afterimages.

Since about 1950, major breakthroughs in research have provided data that indirectly confirmed the presence of the three pigments and showed evidence of an opponent process. Thus both theories gradually merge in accounting for how the perception of wavelength is processed. The technique of microspectrophotometry using the *in vitro* retina [56,87] made it possible to demonstrate three absorption distributions with peak sensitivities at approximately 445, 535, and 570 nm, corresponding to the postulated blue, green, and red (yellow-orange) cone. A second technique, using the *in vivo* retina, is retinal densitometry [74] which is based on bleaching the pigments with given wavelengths and then obtaining measurements of the amount of light reflected back. Such measurements over many wavelengths result in the action spectrum of a pigment. Although this does not yield the exact shape of the pigment sensitivity curves for each of the pigments, two peaks — one at 530 and one at about 580 nm — have been obtained that agree with the green and red peak of the microspectrophotometry curves above. Moreover Rushton's [74] work with protanopes (red-insensitive people) demonstrated a difference spectrum corresponding to that of the green pigment of normal observers. This is the first evidence that color defect (color blindness) is attributed to the differences in pigments.

Evidence for opponent processes began accumulating with micro-electrode recordings from the eye of fish and primate when it became apparent that the electrical sign of the response was sometimes found to be wavelength dependent. De Valois [19,20] recorded electrical activity from single LGN cells in *in vivo* primate preparations in response to wavelength stimulation and showed that such units carry two qualitatively different types of information. Short wavelengths produce a vigorous response ("on" response), lasting for the duration of the stimulus, and long wavelengths produce a decrease in the same cell's spontaneous firing rate but an increase in activity when the stimulus is terminated ("off" response). A sample record is shown in Figure 5.3. Responses of this type, especially to transition wavelengths between those evoking maximum on

and maximum off response, are analogous to the psychophysical functions which explore unique hue determinations and color naming [14].

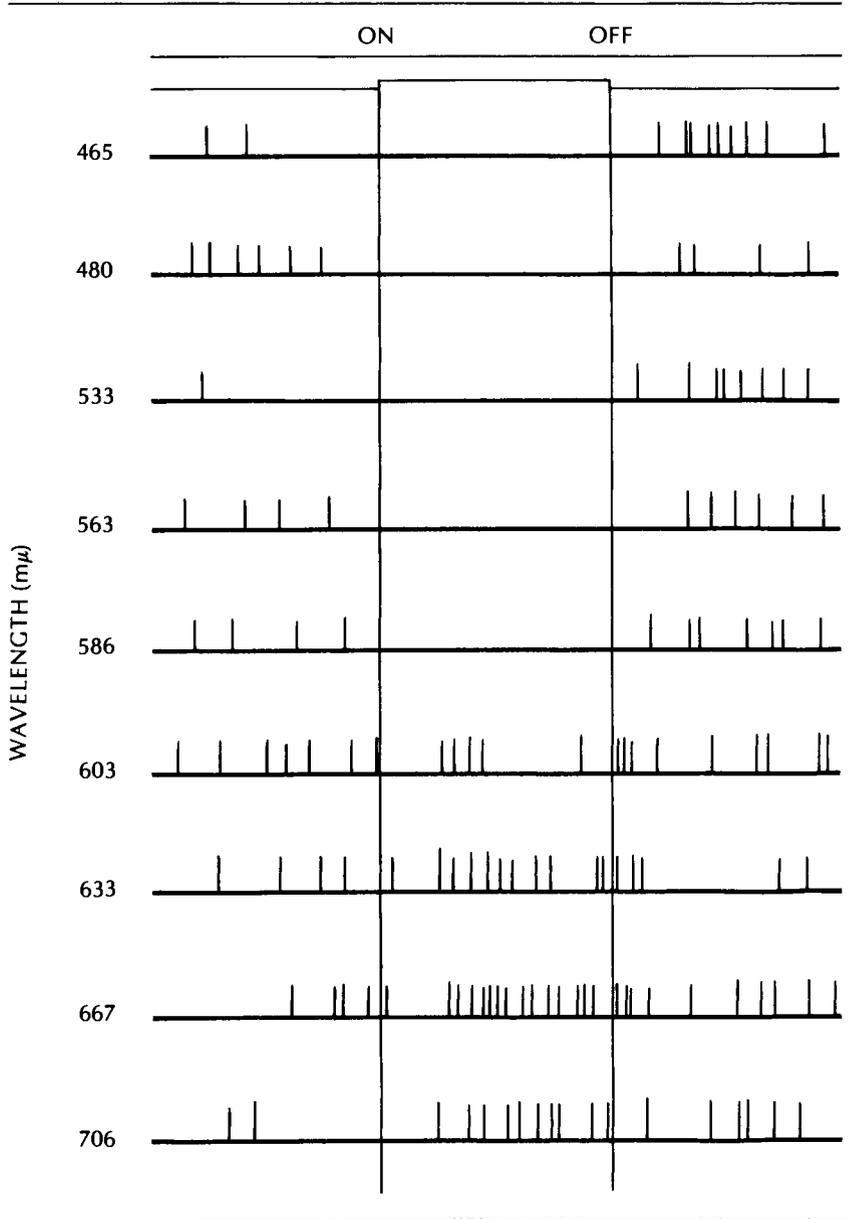
Systems of units have also been found which are nonopponent and seem to respond solely to brightness (quantitative) information. Such a system is assumed to coexist with the chromatic (qualitative) system. It is still premature to determine how these chromatic and achromatic systems may be anatomically and functionally related to provide for the range of hue and saturation discrimination of which the human visual system is capable. There is also no evidence for activity in the brain that differs as a function of hue differences of equal brightness [51].

It is important to reemphasize that the operating principle of the quantitative-qualitative relationship probably has its analogue in each of the other sensory systems. Data to support this statement are available for audition and are beginning to become available for the cutaneous and the chemical senses. Much of this available evidence can be found in the comprehensive treatments by Brown [13] and by Geldard [29].

Finally the special feature detectors demonstrated by Kuffler [53] in the retina and by Hubel and Wiesel [45,46] in the visual cortex must be discussed. These units serve those distinct perceptual functions determining our response to orientation (of lines and shapes) in space, motion, and depth. In short these units convert a stimulus array of light into the complex perception of pattern, form, or shape.

Data on the extensive mapping of the visual cortex in terms of the spatial-analysis units which has so far been accomplished come largely from cat but have lately also been shown for monkey. The major processing stages of the mammalian visual system after the retina are the LGN and the visual cortex in the occipital lobe. Receptor fields in these areas are located and mapped by monitoring cellular response following stimulus input to the stabilized retina. This makes possible the demonstration of the orderly retinotopic projections to these areas, as well as the operation and interaction of function specific units or feature detectors in visual cortex.

Frequency coding is used in the sensory system to convey information about stimulus intensity (i.e., quantitative information); other codes are available for qualitative differentiation. Such differentiation can be based on morphological uniqueness (i.e., rods versus cones) but is mainly based on the uniqueness of the sensory pathway and the interaction between the excitation-inhibition or on-off characteristics of the peripheral neuron with those of the central one onto which it terminates. By looking for optimal stimuli — those producing the highest-frequency response while tracing stimulus response relationships through the ordered layering of the retina to those of the cortex — Hubel and Wiesel have provided a comprehensive picture of the function-related cortical units and their interaction.



Neighboring regions of the retina are represented in neighboring regions of the LGN, along with corresponding layering. The same arrangement holds for the optic radiations into the visual cortex where functionally four types of cells can be distinguished by their response properties. These are the simple, complex, hypercomplex, and higher-order hypercomplex cells.

Simple cells respond to a bar of light of specified width, a specific angle of orientation, and filling a specific area of retina. Another group of simple cells can be activated by rotating the bar or by shifting its position. These cells therefore can be considered orientation specific. They have also been found to be highly responsive to moving edges, and, as with orientation and position, changing the location and/or direction of the moving stimulus will activate a different grouping of simple cells. (Analogous findings have been demonstrated in somatosensory cortex of monkeys for cells responding selectively to stroking the skin in one direction but not the other.)

Although complex cells also require specific orientation of a dark-light edge, their response is not restricted to a precise location. The cells will respond as soon as and as long as the stimulus falls within certain boundaries of the field, thus signaling the abstract information of orientation.

Hypercomplex cells require specific shapes along with orientation, such as an interrupted line or the addition of a corner. In addition they require, like the simple cell, a specific position within the receptive field, and with a moving stimulus, their response requirements become very specific indeed.

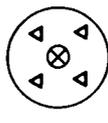
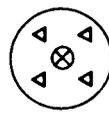
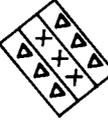
Hypercomplex units are assumed to be specialized to respond to stimulus discontinuity such as when a line stops or motion changes direction.

About 80 percent of all cortical neurons in the visual areas are driven by both eyes; however, more binocular specialization of receptive fields have been located specifically for depth perception [54]. Table 5.2 summarizes the information.

Figure 5.3

Superimposed records of the responses of a +R-G cell to various wavelengths taken from an equal-energy spectrum. The one-second stimulus interval is indicated by the displacement in the trace at the top. This cell was chosen for reproduction because its firing rate at the different wavelengths corresponds closely to the average response rates for cells of this type. After R. L. De Valois, I. Abramov, and G. H. Jacobs, *J. Opt. Soc. Am.* 56:966, 1966.

Table 5.2
CHARACTERISTICS OF RECEPTIVE FIELDS AT SUCCESSIVE LEVELS OF THE VISUAL SYSTEM

Type of cell	Shape of field	What is best stimulus?	How good is diffuse light as a stimulus?	Is orientation of stimulus important?	Is position of stimulus important?	Are there distinct "on" and "off" areas within receptor fields?	Are cells driven by both eyes?	Can cells respond selectively to movement in one direction?
Receptor		Light	Good	No	Yes	No	No	No
Ganglion		Small spot or narrow bar over center	Moderate	No	Yes	Yes	No	No
Geniculate		Small spot or narrow bar over center	Poor	No	Yes	Yes	No	No
Simple		Narrow bar or edge	Ineffective	Yes	Yes	Yes	Yes (except in monkey layer IV)	Some can
Complex		Bar or edge	Ineffective	Yes	No	No	Yes	Some can
Hypercomplex		Line or edge that stops; corner or angle	Ineffective	Yes	Yes	Yes	Yes	Some can

From Kuffler and Nicholls [54: 54-55].

PERCEPTION AND BEHAVIOR

Our new understanding of the peripheral and central processing strategies and codes permits us to look at theoretical formulations about perception in a new way. The modern versions of the old philosophical rivals — the associationist versus the nativist position — were best represented by the behaviorist versus the Gestalt model. The former suggested that perception, like all other behavior, is acquired according to a conditioning paradigm; the latter postulated specific innate principles.

Although Gestalt theory was formulated to explain behavior generally, its underlying principles particularly address visual perception. The word *Gestalt* means configuration or form. The theory states that we combine or structure stimulus elements into an overall configuration, or form, and thus perceive the world in terms of patterns, shapes, and forms. The structuring of the stimulus array is assumed to be an innately determined function of the central nervous system. The imposition of structure is accomplished along given structuring principles which are briefly reviewed below.

Proximity. Elements that are spatially or temporally close tend to be grouped together in perception.

Similarity. Elements with common stimulus attributes tend to be grouped together in perception.

Continuation and common fate. Elements that lie in the same plane or move in the same direction tend to be grouped together in perception.

Symmetry. Symmetrical figures are more likely to be grouped together than asymmetrical ones.

Closure. The perceptual process will tend to complete a form even in the face of objectively missing elements in the stimulus array.

Figure-ground relationship. Perception is structured so that part of the stimulus array will be perceived as the central figure while the rest is seen as background.

With the new knowledge about excitation and inhibition and the way these processes manifest themselves in the activity of the central feature detectors, let us reexamine these principles in terms of a more parsimonious hypothesis, involving perception as a function of contrast, contour, and edge detection.

Contrast and Contour

The sensory system integrates spatially and temporally in such a way as to capitalize on whatever stimulation — even subliminal — may be available; it is particularly geared to respond to change of input. One might even say that it will create change by exaggerating minimal input changes. This is the case with the so-called Mach bands, named after the Austrian physicist Ernst Mach, who first drew attention to the phenomenon. When observing a step pattern consisting of a series of uniform bands which are graded from black to white, each of the bands appears to have a lighter vertical edge which borders on the just-one-step-darker band, the whole array thus creates a scalloped effect. This scalloping, because of the added edge, is a wholly subjective phenomenon. Physical measurement shows that within each band brightness is, in fact, uniform. The subjectively lighter edges at the border with a darker surface are the Mach bands, and they have been shown to be the direct outcome of lateral inhibition. Using the eye of *Limulus*, Ratliff and Hartline used the light-dark band pattern, first with a single receptor which responded with frequency discharges paralleling the luminance pattern [70]. When the whole eye was exposed to the same stimulation, the response from the same receptor showed an increased frequency on the bright side of the step and a decrease near the dark side. This occurs because the stimulated cells nearest the border were inhibited by the excited cells on one side only. The decrease in frequency on the dim side is due to the fact that the dimly illuminated retinal area near the boundary is inhibited by neighboring dimly illuminated cells as well as by the brightly illuminated ones in the nearby brightly illuminated area. Thus the total discharge effect at the light-dark border is the net result of the total amount of inhibition and excitation of the receptors in a given area. The final outcome is one of increased frequency where the gradient of luminance decreases and a net decrease in frequency as the gradient is moved across the retina. The discharge curves from the two conditions are shown in Figure 5.4.

The outcome of such sensory interaction is to sharpen sensation and perception at stimulus discontinuities, which I referred to earlier as the sensory exaggeration of a minimal input. Von Békésy [85] who experimented widely with the effect in the auditory and cutaneous systems, refers to it as the *funneling effect*, in the sense that the action inhibits (or minimizes) the smaller stimulus effects and collects (or maximizes) the stronger effects into a common pathway.

People are ordinarily not aware of the presence of Mach bands, incorporating them into their overall response to light and dark or light and shadow. Artists do use them commonly, however, creating brightness contrast and shading effects by separating the relevant areas by brighter or darker lines [71].

This discussion of the lateral inhibition feature will have to serve here as the model for other types of contrast analysis. For instance, evidence has been provided for analogous mechanisms by which we discriminate texture gradients, involving special feature analyzers operating on the antagonistic principle of center-surround excitation and inhibition organization. Other types of contrast can be shown to involve the interaction principle along with a more direct effect of the stimulus properties. Apparently when the stimulus situation is explicit enough, funneling to create perceptual borders may be dispensed with.

In brightness contrast, the intensity of a background region can modify the perceived brightness of a smaller area enclosed in the background. A grey square of given brightness viewed with a dark surround will appear considerably brighter than the same square viewed by a light surround. Thus the subjectively perceived brightness of a stimulus is determined by the surround characteristics. These include size, intensity, viewing time, adapting conditions, and the relative luminances of the test and surround [32].

Color contrast presents additional complexities because of the nature of color adaptation and afterimages with successive contrast. With simultaneous contrast, however, a central patch of a color will be evaluated in terms of the surround color. In this case, something akin to color mixing occurs in the perceived area [32].

Except for closure the Gestalt principles for structuring perception can be considered special cases of some form of contrast processed by the perceptual system from the input. Proximity, similarity, and symmetry probably are part of a texture array providing for straightforward contrast imposition. Continuation and common fate play a role in stimulus arrays providing for spatial contrast imposition. Figure-ground relationships are perceived when adequate contrast of target and surround can be imposed by the system. In fact some of the demonstrations of fluctuating figures (figures that are seen in one way but then suddenly change and are seen in a different configuration) may give an indication of the system's inability to deal definitively with a situation in which the conditions for adequate contrast imposition are missing. Thus we can narrow down the numerous principles to the unique response to contrast and still retain the structuring principle: the imposition of contrast by means of lateral inhibition, or funneling action.

Perceptual Constancy

Perceptual constancy is almost the opposite of contrast, yet they are intimately related. Constancy refers to the perceptual system's ability to

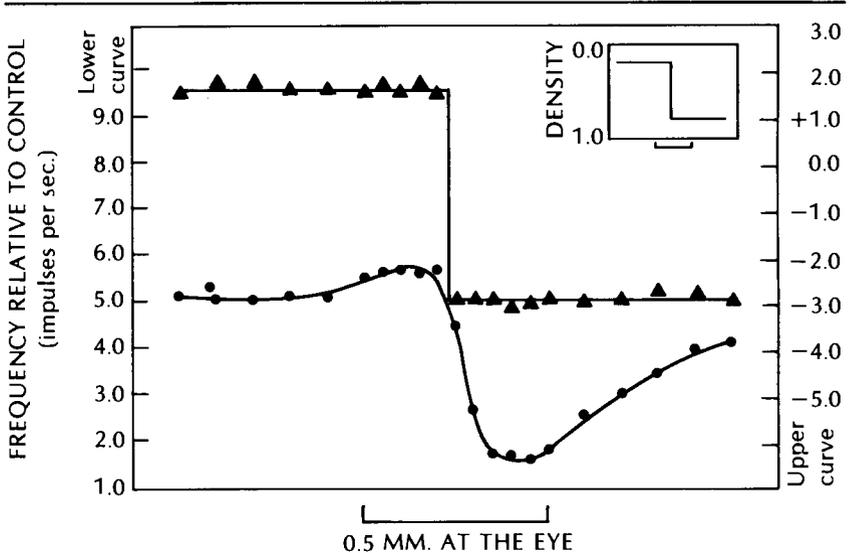


Figure 5.4

The discharge of impulses from a single receptor unit in response to a simple "step" pattern of illumination in various positions on the retinal mosaic. The pattern of illumination was rectangular, covering an area $1.65 \text{ mm} \times 1.65 \text{ mm}$ on the eye. It was obtained by projecting the demagnified image of a photographic plate on the surface of the eye. The insert shows the relative density of the plate along its length as measured, prior to the experiment, by means of a photomultiplier tube in the image plane where the eye was to be placed. The density of the plate was uniform across its entire width at every point. The measurements illustrated were made over the central 1.5 mm of the image on the eye.

The upper (rectilinear) graph shows the frequency of discharge of the test receptor, when the illumination was occluded from the rest of the eye by a mask with a small aperture, minus the frequency of discharge elicited by a small "control" spot of light of constant intensity also confined to the facet of the test receptor. Scale of ordinate on the right.

The lower (curvilinear) graph is the frequency of discharge from the same test receptor, when the mask was removed and the entire pattern of illumination was projected on the eye in various positions, minus the frequency of discharge elicited by a small "control" spot of light of constant intensity confined to the facet of the receptor. Scale of ordinate on the left.

The image on the eye of the fixed aperture in the mask was made much smaller (0.05 mm in diameter) than the facet of the

respond to stimuli in accordance with their proper dimensions even when these are distorted or degraded in some way. Size constancy will be used here as the most illustrative example since it has occupied a niche in perceptual research since the days of Berkeley. In size constancy our judgment of size remains relatively unaffected by the distance of the object judged, although an object at a distance subtends a visual angle on the retina which decreases in proportion to the increase in distance at which the object is located. The question of whether constancy is determined by the size of the retinal angle or by other factors was definitively addressed by Holway and Boring [51; 512–514]. Their work, and subsequent experiments, showed that retinal angle becomes the dominant factor determining apparent size settings in the absence of other inputs, such as depth cues and other contextual information. The contrast provided by contextual information supplies the perceptual system with the wherewithal to respond adaptively to changing size-distance information. These relationships are also used to explain the moon illusion — the finding that the full moon looks larger on the horizon than at the zenith. Depth and contextual cues are assumed to provide the contrast as the basis for this difference in judgment.

The retinal size of a stimulus and contrast cues probably operate together and are also affected by learned cues. Attempts at evaluating the

test receptor (approximately 0.2 mm in diameter) in order to insure that no light would reach adjacent receptors. Thus the absolute amount of light entering the receptor under this condition was considerably less than when the entire pattern was projected in the same position on the eye and the entire aperture of the test receptor was filled. (Use of the full aperture also produced a certain amount of “smoothing” of the lower curve.) In each case the intensity of the “control” spot of illumination was adjusted to produce a frequency of discharge in approximately the same range as the test measurements. The average control frequency for the upper curve was 12.8 impulses per second; for the lower curve, 9.0 impulses per second. The positions of the graphs on the ordinate were arbitrarily fixed by locating the point on the extreme right of the curvilinear graph one impulse per second below the corresponding point on the rectilinear graph. Such a displacement is in accordance with the common observation that, due to the inhibitory interaction, the frequency of discharge in a single optic nerve fiber is smaller when a large area of the eye is illuminated than when a small spot is used that just fills the entire aperture of that fiber’s ommatidium. The principal point of comparison is the *form* of the curves rather than the absolute magnitudes of the frequencies. From Ratliff, [70:324–325].

size constancy capacity with infants and young children indicate some rudimentary size constancy in very young infants, but it has also been shown that the function develops and improves during early childhood.

The principle of contrast cues also plays a role in brightness, shape, slant, and color constancy. A black square illuminated by a steady white light will be judged by the observer as white. When a white square is shown in juxtaposition with the black square, the observer will correct his judgment immediately. Investigations into shape constancy as a function of slant are reviewed by Kling and Riggs [51] and the subject of color constancy is extensively treated by Graham [32].

Perceptual Illusions

An illusion is defined as a percept that does not correspond to the stimulus. In this sense the relation between constancy and illusion can be said to be complementary. Illusions can affect the perception of space, motion, orientation, and depth, and they have also been demonstrated in modalities other than vision. The one illusion that perhaps everyone has experienced involves perspective (also frequently used by artists for distance-depth representation). Two horizontal lines of equal length spaced one above the other will be judged to be unequal in length if two vertical lines on either side are shown at a converging angle. In this configuration the top line will be perceived as longer than the bottom line. It is as if the perceptual mechanism attempts to maintain size constancy, but since the converging vertical lines lie closer to the ends of the top line than to the ends of the bottom line, the contrast effect is more pronounced for the top line than for the bottom line. Consequently something akin to a behavioral Mach band seems to be taking place. The conflicting information of this contrast on the one hand and the ambiguous relationship between the two horizontal lines on the other is believed to lead to the overestimation of the top line.

A similar explanation may be appropriate for an equally old and ubiquitous illusion: the horizontal vertical. Observers exposed to an inverted T-figure or an L-figure in which the horizontal and vertical lines are of equal length perceive the vertical line as the longer of the two. It is now believed that cortical orientation-specific units (and length-specific units) play a role in such judgments, with the contrast in orientation providing for the lateral inhibition processes underlying these judgments. It is also recognized that cognitive aspects, based on development and learning, may affect judgment [35].

The impression of depth can be simulated by a number of stimulus conditions. It is determined to a large extent by retinal disparity, which

varies with the magnitude of the difference in distance of the object from the eyes. The observer thus extracts information about the depth in his visual field. Single neural binocular units in cat and monkey cortex have been shown to be excited by specific magnitudes of retinal disparity. Hubel and Wiesel [45] have shown that the receptive fields of these units differ in position on the two retinas in such a way as to be maximally excited by edges that are either in front of or behind a frontal surface through the fixation point of the two eyes. Thus the illusion of depth can be created as long as the stimulus positional array meets the requirement that will satisfy the interaction requirements of binocular input. Reversible or ambiguous figures are the kind of stimuli that give rise to conflicting subjective experience. One of the reasons for this phenomenon may be conflicting or inadequate border contrast information for the appropriate cortical analyzers. Conflicting depth cues also tend to lead to reversals, such as in the well-known Necker cube. Familiarity with a figure or specific instructions may determine which aspect of the figure is the more likely to be seen. Sometimes figure anomalies may lead to reversals or to a locking in on one aspect of the figure. Obviously there are a number of central processing strategies in structuring a percept out of an initially chaotic situation which must call on a complex interaction of feature-specific functions. At least some of this processing may be based on previous cognitive learning. The laws explaining these phenomena in terms of familiarity or specific feature processing will undoubtedly combine aspects of both perceptual determinants, but up to now no explanation has emerged to account for all the features of ambiguity and reversal.

Cognitively contextual cues play an important role in the response to the ambiguous stimulus. Fisher's work [26] on the gradual evolution of form and Warren's [88] data on perceptual restoration of missing speech sounds show the tendency to fill in missing information. Another form of filling in takes place during experiments with stabilized retinal images (by attaching the target to be viewed to the eyeball itself, thus canceling out the effect of eye movements). In this situation images disappear and reappear. If the stimulus consists of letter groupings containing potentially meaningful letter sequences, subjects will extract whole words from the stimulus even under conditions of a disappearing image [69], but how this is accomplished is not yet known.

Another unsolved puzzle is that posed by how apparent motion is perceived. Real motion is based on the stimulation of successive loci on the retina and is subserved by directionally sensitive motion detectors in the cortex [54]. For some species, special motion detectors in the retina have been located [55]. Apparent motion, in its simplest form, is induced by two spatially separate stationary lights. Within specified conditions of spatial and temporal separation and luminance of the stimulus paramete-

ters, a luminous line will be seen moving in the direction from first to second onset flash. It is not clear what the underlying retinal or cortical mechanisms are, and the evidence remains controversial, pointing to the likelihood that a different type of processing underlies the two types of movement. These data, chiefly by Kolers and by Rock and Ebenholtz, are reviewed in detail in Kling and Riggs [51].

Aftereffects

An afterimage is a visual effect that persists after the stimulation has ceased. The effect is produced by exposing the eye to a primary stimulus — i.e., adapting it to a specific exposure of known duration, intensity, and spectral composition — and upon stimulus offset, directing the gaze at a neutral surface. Depending on the stimulus parameters, the afterimage will then appear, first resembling the stimulus and subsequently undergoing a series of phases during which the original appearance changes in brightness and/or spectral composition. With chromatic stimulation, the afterimage generally appears in the color complementary to that of the primary stimulus — a subjective experience for which the color-coded units discovered in the retina and LGN appear to provide the basis. An analogous process is also assumed for observed pattern aftereffects, such as line curvature, figure orientation, and figure displacement [32].

Considerable research on contingent aftereffects has been generated since McCollough [58] discovered an orientation-contingent color effect. The effect is produced by alternate exposure to horizontal and vertical striped grating. One grating consists of horizontal alternating black and blue bars, the other of vertical alternating black and orange bars. Observers are adapted to these gratings by viewing them alternately for about sixty seconds each for several cycles, and a test grating composed of horizontal and vertical black and white bars is then presented to the observer. Complementary color aftereffects specific to the orientation of the test gratings are generally reported; that is, the vertical portion of the test grating appears with a blue tinge, the horizontal portion has an orange tinge. Not all observers report the effect. I have been exposed to it over many sessions yet have never experienced it; but the majority of observers do report the effect, which lasts for an extremely long time. There have been reports that observers brought back to the laboratory days after original exposure reexperience the effect upon mere exposure to the test grating [83]. The underlying mechanism that produces the effect is still being debated, and the necessary and sufficient parameters are being investigated. McCollough's own hypothesis, that these effects can be understood

in terms of color adaptation of orientation-specific edge detectors in human visual cortex, has so far not been substantiated.

Some recent investigations have used the duration of the afterimage to simple line stimuli as indicative of the relative activity of cortical orientation specific units [4]. This approach was used to investigate the horizontal-vertical illusion by measuring afterimage duration for each component separately as well as for the figure combination [15]. While no difference was found in duration when the components were exposed separately, afterimage duration was found to be longer for the vertical when the whole figure was exposed. It may be that this effect is due to contrast inherent in the figure, and if orientation-specific units do indeed play a part in determining afterimage duration, the evidence may point to a possibly finer vertical than horizontal tuning in the human visual system, thus explaining the ubiquitous overestimation of the vertical.

PERCEPTUAL DEVELOPMENT AND LEARNING

It is difficult to separate perceptual from cognitive development and from the impressively rapid increase in behavioral repertoire in infants. Piagetian theory implicitly recognizes this problem when it postulates a sensory stage as the first and most basic in the hierarchy of cognitive development. During the sensory stage, the infant presumably learns to create boundaries between himself and the environment by means of his sensory interaction with it. Thus there is constant exercise of sensory functions, accompanied by whatever learning accompanies the sensory activities. Since such learning is extremely rapid, studying the perceptual capacity of neonates does not necessarily reveal what functions are innate, but it does at least indicate how early these are observable and to what degree they may be modifiable. Increasingly the data systematically point to developmental ordering and relative prepotency of different stimulus dimensions at given developmental stages [16].

Early Development and Plasticity

Undoubtedly some rudimentary ability to respond to spatial stimulation is present at birth. Wertheimer [90] succeeded in testing a three-minute old infant by stimulating either the left or the right ear with a click. He had an independent observer note the directionality of eye movements and found that these followed the direction of the click, suggesting the capability of directional response, as well as coordination between visual and auditory space to be present immediately upon birth.

Very young infants also respond to objects coming at them (*looming response*) and attempt to avoid them [6]. Gibson and Walk [31] demonstrated the perception of depth in crawling-age infants who refused to cross the divide which simulated a sharp drop ("visual cliff"), and Bower [11] described a series of experiments that demonstrated a rudimentary form of shape constancy. Fantz [22,23] demonstrated a very early interest in stimulation on the part of infants by the more complex of a pair of patterns and their preference over these for a human face or facelike pattern. More recent studies have shown a very early overall preference for curvilinear over rectilinear contours [6]. Peeples and Teller [68] and Bornstein et al. [10] showed that young infants have good brightness discrimination and respond to wavelength differences in terms of the regular hue categories.

All of these studies employed techniques involving observation of the infant and inferring preference (for pattern, color, etc.) from the behavior (head turning, amount of time fixated on stimulus, etc.). Riggs [73] suggests that such data can be obtained by objective recording techniques, combining electroretinography (ERG) with recording of visually evoked cortical potentials (VECP). This technique was successfully applied in his laboratory to obtain the spectral sensitivity function from a nine-week-old infant. Resulting data are in line with those of the adult function.

Although some functions are present at birth, if not innate, recent research has raised the question of the plasticity or modifiability of these functions during the early period of life. The question for humans emerges from the selective rearing studies with animals in which visual input during a specified period in the animal's development is restricted, as well as from the findings on imprinting and critical periods.

In the course of the experiments mapping cortical units [54], it was found that, by and large, newborn animals (cat, monkey) exhibited virtually all the functional and structural mechanisms also found in the adult response to visual stimulation. This finding prompted studies in which newborn animals were subjected to restricted visual input or selective exposure during the critical period. The picture that emerges is a very complex one indeed.

- 1 Occluding one eye only allows the animal to develop normally, using the unoccluded eye. When the occlusion is removed and the other eye is occluded, the animal is functionally blind. The cells from the formerly occluded eye cannot be driven. Furthermore when the occlusion of the first eye is removed and the second eye remains unoccluded, the animal responds with the seeing eye, but cortical records show that only that eye can

- drive the cells, binocular representation is lacking, and a pronounced shift in the relative ocular dominance (in both cat and monkey) from that observed in normal animals is apparent [47].
- 2 When both eyes are occluded at the same time and for the same duration, some loss in the cells is apparent, but no damage to binocular representation results [91].
 - 3 It is possible to produce an artificial squint by cutting an extraocular muscle and thus deflecting the optical axis of one eye. When this is done in cat and monkey, almost every cell is driven by only one eye, and, again, there is virtually no binocular representation [47,91].
 - 4 Blakemore and Cooper [9] dark-reared kittens, except for a daily period of exposure to stripes of fixed orientation (vertical or horizontal). When the kittens were tested with normal input, their behavior in the presence of orientations opposite from those of the rearing one was impaired, and their cortical orientation units showed a pronounced shift of response favoring the rearing orientation.

Kuffler and Nicholls [54] point out that although some morphological changes result from lid closure, primarily in LGN, and some slight changes in cortex, these are not sufficient to account for these findings, especially since no functional impairment accompanies closure of both eyes simultaneously. Obviously the congruity of input during the critical period is the crucial factor for normal perceptual development. Furthermore the time period during which interference occurs determines the effect; the fifth week after birth seems to be the most critical. Effects from extremely short periods of occlusion before that period may be reversible. Occlusion after this period has no effect. According to Kuffler and Nicholls, "The critical period in an animal's development may possibly represent a time during which a significant sharpening of senses or faculties occurs" [54:147]. Data from the psychological literature such as Harlow [37], as well as studies on early deprivation or handling, tend to confirm this notion.

The implications for human development are not easy to sort out. Is there a critical period in human development? Undoubtedly, but there is probably more than one, with a differing duration for different perceptual functions. Some studies indicate that perception of orientation may undergo changes during early development due to environmental or individual causes. Appelle [3] cites numerous studies that provide evidence for the fact that the human perceptual system shows an orientational preference for horizontal and vertical as against oblique (in contrast to animals who show equiprobable response to all orientations). This preference may

be a feature of early development as shown by the work of Cohen-Leehy et al. [17] with human neonates for whom an oblique effect was observed by the sixth week but a gradual acuity difference developed subsequently, favoring vertical and horizontal orientations.

An environmental hypothesis has suggested that human vertical and horizontal superiority are the result of early modification within "carpentered" environments [2]. In the light of the above data, such environmental influences would have to be active almost at birth. A more parsimonious assumption would implicate early visual modification as developing along with oculomotor development and size and body position of the developing infant [15]. This would also account for the finding that even those from "noncarpentered" environments exhibit the vertical overestimation when confronted with horizontal-vertical illusion test figures [77].

Finally there are implications from the clinical literature. Hohmann and Creutzfeldt [44] have evaluated binocular functions in children in whom early squint was corrected at different ages. Their findings suggest that the human critical period during which development of binocular function is still plastic may extend into the sixth year. A somewhat different estimate is suggested by Mitchell et al. [60]. It is doubtful that a definitive answer will be available soon; in fact, as more neurophysiological data emerge, it may become necessary to reevaluate our present stance vis-à-vis the influence of early experience and its durational milestones [36].

Modifiability and Perceptual Integration

It is fortunate, from an adaptational point of view, that the human visual system retains a degree of plasticity throughout the lifespan. This plasticity is responsible, for instance, for the fact that we are able to compensate for the permanent hole that the blind spot causes in the visual field. It also enables those wearing newly prescribed bifocals to adapt the horizontal line across the visual field and to the dichotomous correction.

Stratton [81,82] was the first to investigate this capability by experimenting with the wearing of prisms which displace the visual world. He found that gradually, the system adapts, and subjects can perform normally in an upside-down world. Kohler [52] performed many experiments involving lateral, up and down, and squint displacements. He found that with systematic spatial displacement, adaptation invariably occurred. Once normal conditions were reestablished with removal of the prisms, a period of readaptation was required; it was shorter, however, than the original adaptation to the displacement. The prisms that induce squint create a color-stereo effect — that is, they create illusory, and in most

cases incongruous, depth effects, and Kohler found that none of his subjects were able to adapt to this displacement. The reason for their failure is still not clear. It may be the same as for the inability to maintain normal speech under conditions of delayed auditory feedback. Seemingly the discrepancy between what is perceived and what was previously experienced is so great that feedback cannot be established.

Adaptation to visual displacement seems to vary along the phylogenetic scale and degree of anatomical fixedness. Amphibians never adapt to such changes; monkeys and humans are able to do so, given a reasonable amount of adaptation time.

A task as complex as visual adaptation to spatial displacement implicates more than just the visual system, it involves a complicated shift in perceptual-motor coordination. A series of experiments performed by Held and Hein [41] evaluated the functional relationship between sensory feedback resulting from self-initiated movement and normal perceptual development. Pairs of dark-reared kittens between eight and twelve weeks old were placed in an apparatus which provided identical motor and optical stimulation to both animals except that the movement was active and self-produced for one and passive for the second. The animals were then compared in their performance on the visual-placing test (extending paw at approaching surface), blinking to an approaching object, and depth perception on the visual cliff apparatus. On all tests the performance of the active animal was indistinguishable from that of normally reared kittens. The passive animals showed considerable visual-motor deficiencies, although these disappeared after about forty-eight hours of free unrestricted (postexperimental) movement in an illuminated room. In subsequent experiments Hein and Held [40] and Held and Bauer [42] reared cats and monkeys, respectively, without visual access to their limbs. Subsequent performance in perceptual-motor tasks requiring placing and reaching fell far short of that shown by normally reared subjects. It seems, then, that integrated perceptual-motor behavior involves early and continuous use of, and visual access to, the motor components in association with visual input, much along the lines that normal pattern and depth perception require activation of the appropriate units and pathways. The mechanism by which these functions become finely tuned and fully adaptive can be presumed to be analogous.

The findings that the visual and motor functions both develop and adapt to distortions in conjunction with one another raises the question of primacy of any one system. As I mentioned at the beginning of this chapter, the eighteenth-century philosopher George Berkeley was convinced that the primary sense is that of touch; it is the chief sense the infant uses to learn about the world's spatial relationships. The question then becomes, If incoming information from the visual and the motor system

provides conflicting messages, which will determine behavior? Harris [38] answered this question in a series of experiments in which writing, judgment of size, and other visuomotor tasks were performed under conditions of conflicting information. The results show that visual information dominates. In the case of the long-term adaptation effects with prism displacement, it is not the visual system alone which adapts but the body's as well. Similarly, in Harris' experiments adaptation was not achieved if the limbs involved in the motor tasks were blocked from view in the course of the experimental tasks.

Held and his colleagues [37] suggested a feedback model to account for these and the previously cited data (Figure 5.5). It is based on a combination of a perceptual template-matching comparator function receiving input from both efferent and reafferent signals by a correlation-storage or memory component and which would account for the gradual adaptational changes over time. Such a model can also be used to resolve the older, rather simplistic, arguments about whether vision by the newly sighted (the Cheselden case, for instance) is learned. Someone who spent most or all of his developmental period without the visual sense would probably have to go through several stages before being able to exploit the newly acquired capability. One would probably involve the activation

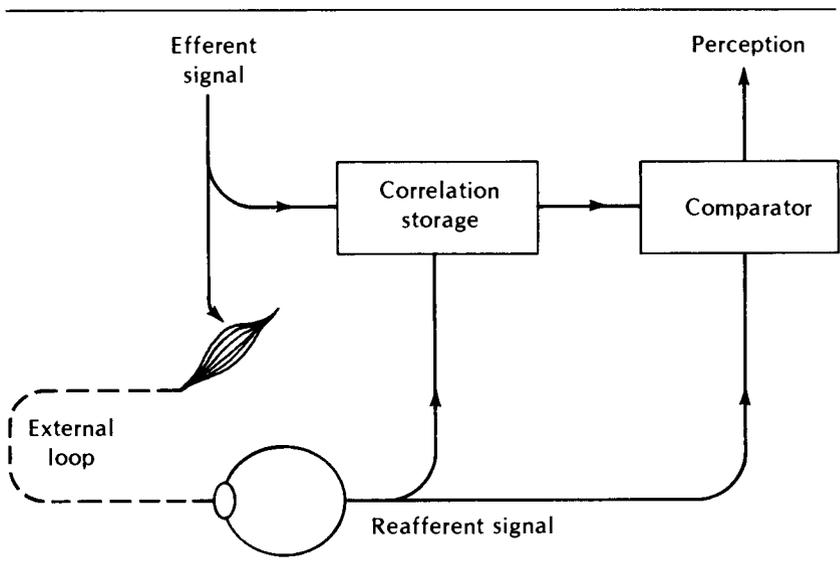


Figure 5.5
Schematized process assumed by Held to underlie the process of adaptation. From Hein and Held [39].

and entrainment of cortical units and pathways; another, cognitive learning (identification) of visual input; and still another, the integration of visual information with the other modalities, similar to the model cited above with the added problem that senses such as audition and touch would have been more finely tuned than in seeing people and would, for the newly sighted patient, probably cause considerable initial interference by competing with the acquired modality.

Learning, Attention, and Memory

Information from the environment is initially captured through the sensory system. In order to play a role in behavior, it must then interact with cognitive processes. Spatial and temporal relationships and patterns are identified as objects and stored in memory. New inputs are compared and matched to stored information. Previously appropriate (rewarded) responses are generalized to new informational inputs and demands. To the degree that these processes are integrated, perception can be regarded as the basis for adaptive behavior. Such response learning occurs within the social, and often emotional, context of our environment, which largely shapes the appropriateness of response. Thus we learn both to recognize and interpret stimulus input, but we learn the behavioral components to be emitted in order to transmit our response to the environment.

Melzack's findings [59] tend to confirm this process: He reared dogs in isolation, depriving them of the rough-and-tumble activity characterizing the interaction between littermates. Later testing of these animals' response to painful stimulation failed to elicit the reactions to pain ordinarily exhibited by normally reared animals. We cannot conclude that the animals were impervious to pain although it is possible that the central units had remained relatively untuned. A more reasonable assumption is that the animals had not acquired the response repertoire leading to the avoidance of noxious stimulation. Research on manifestation of pain in humans has generally shown that overt reaction to pain will vary as a function of sociocultural and sex conditioning.

Chapter 1 of this volume discusses the interconnectedness of perceptual pathways and processes with the limbic and reticular activating system. The latter particularly is involved in governing and monitoring attentional processes by selectively blocking some sensory inputs while permitting others to be attended to and processed. The physiological and biochemical relationship of these interrelated mechanisms is far from clear yet, but psychological research has tried to sort out the stimulus and behavioral variables that govern attention to perceptual input.

Broadbent [12] investigated the perception of speech sounds under conditions of multiple input and postulated the possibility of two mechanisms: selection on the basis of content (the “cocktail party” phenomenon) or selection on the basis of stimulus variables such as sound frequency or intensity. Certainly attention to perceptual stimuli is selective — infants spend more time fixating human faces than abstract patterns [23] — but the question remains whether this is a genetically adaptive response or whether the behavior is based on very early conditioning. Need, interest, or expectation have been shown to be a variable in determining what we see or hear. Food-deprived subjects will perceive food words when exposed to lists of words presented as subliminal or distorted visual or auditory stimuli. Thus far, the most accurate we can be about attention is that it governs perceptual selectivity based on social or organismic variables, but that these can be overridden by systematic changes in one or more of the stimulus dimensions. This latter paradigm fits in with my earlier discussion on contrast and context. It may be that the central role played by contrast for the sensory function becomes perpetuated as the attention-getting mechanism in the perceptual function.

Memory, which is crucial for cognitive functions, is based on experience acquired as development and learning process and is assumed to have its starting point with sensory input. The memory storage model proposed by Atkinson and Shiffrin [5] suggests two storage levels: short-term memory (STM) and long-term memory (LTM). STM is activated by sensory input (the sensory register). It is limited in channel capacity (7 ± 2 items) and storage duration so that transfer to the LTM will not be effective unless rehearsal and consolidation take place. The channel capacity is greatly enhanced by combining elements into larger units (*chunking*). Experiments with LTM have shown that both storage and retrieval can benefit from employing perceptual imagery as mnemonic devices, but presumably this active recruitment of perceptual features is only one of many strategies used to facilitate transfer and enhance storage. The use of imagery in memory does not seem to have anything in common with eidetic imagery, occasionally seen in children but usually lost after adolescence. This is the ability of recalling a visual scene in complete detail, as if going over a pictorial representation of the scene. The underlying mechanism in eidetic imagery has not been satisfactorily accounted for.

The nature of the sensory register (also called *iconic image*), the primary input to memory, was investigated by Sperling [79] using tachistoscopic presentations of 3×3 arrays of letters for 50 msec. After such a presentation, recall for the target letters was found to be generally poor even within one second after the flash. When a coded tone (indicating row 1, 2, or 3) sounded 150 or 300 msec after presentation, recall for that particular row was markedly improved. Subjects presumably retained a visual

image trace which they could scan if they needed to concentrate on only one row. In trials where the coded signal was sounded before stimulus presentation, the recall for the particular row signaled improved even further, presumably because subjects could focus (attend to) ahead of time on one row only. It seems that input to STM depends on conditions that enable us to make the most of the iconic image, either by being able to focus attention before the stimulus or by limiting recall to part of it. Either way this storage capacity is an extremely limited one unless the stimulus array contains elements that allow subjects to make combinations of these and treat the combinations as expanded units.

PERCEPTION AND PATHOLOGY

There is no systematic body of knowledge linking perception and pathology. There are, however, some pathological or aberrant behavioral manifestations of which perceptual processes are a part, and the manipulation of some perceptual inputs tend to affect behavior maladaptively. Systematic cause-and-effect linkages are difficult to demonstrate, but the material in this section should indicate areas of research and what kinds of hypotheses may be worthy of pursuit.

Hemispheric Interaction

Chapter 1 of this volume looked at the work Sperry and his collaborators pioneered on the effects of hemispheric disconnection on perception, as well as the inferences currently being drawn about the role of the corpus callosum in consciousness. Traditionally our knowledge about structure and function emerges to a large extent out of clinical practice. This was true also of visuotopic and tonotopic organization in the brain. The loss of function and subsequent surgery or autopsy taught us the nature of the cortical projections for perceptual and other processes. The surgical hemispheric deconnection necessitated by cases of intractable epilepsy have led to further discoveries about how perceptual functions are integrated across the two hemispheres. Most findings seem to indicate that the right hemisphere (in most people) serves to process nonverbal spatial and temporal input, the left hemisphere specializes in facilitating sequential processes, such as those involved in the perception of speech and verbal analysis. Integrated behavior involves orderly connections between centers in one hemisphere and those in the other via the corpus callosum, which has led Ornstein [65] to view this connection and the orderly integration between the two hemispheres as the locus of human consciousness, or awareness.

From the study of aphasia, resulting from injury or stroke, we have gradually learned that Wernicke's area is crucial for the perception and recognition of speech sounds and also plays a part in the formulation of sentences, while Broca's area serves a primarily motor function in carrying on and out messages from Wernicke's area [30]. These areas, located in the left hemisphere, receive input from both the left and the right ear. Information that comes in through the visual system must also be transferred to these regions when it is to be reacted to in terms of symbolic decoding (reading, verbal identification of colors and shapes) or by way of speech. Thus the verbal response one obtains to visual stimuli from commissurectomy patients may differ from the tactile response. The patient cannot identify verbally an object flashed on a slide to the right side of the visual field, for instance. When the patient is asked to place a hand under a screen (to hide the hand and objects from view) and tactually pick out the object seen on the slide from a group of others, the correct object is selected. Many of the findings from the study of postcommissurectomy patients as well as from surgical experiments on cats and monkeys are described in detail by Gazzaniga. [28].

A technique for evaluating interhemispheric transfer and cerebral dominance has developed out of these experiments, which have been used in research with both the visual and the auditory response mechanism. In vision it involves the controlled exposure of briefly flashed stimuli while fixation is controlled, to only one side of the visual field, either monocularly or binocularly, and measuring the reaction time as a function of the hemifield stimulated. Filbey and Gazzaniga [25] obtained results in such an experiment which showed that when the stimulus is delivered to the left hemifield, verbal reaction time is longer (by about 30 msec) than when the right is stimulated, there is no difference in reaction time when the response is manual.

In auditory experiments, the technique of dichotic listening is used to investigate auditory asymmetries in the brain. Contrary to popular belief, handedness is not necessarily indicative of hemispheric dominance [63]. Those who are left-handed may still have their speech center in the left hemisphere. The location can be tested by injecting sodium amytal into the carotid artery of one side of the neck or the other. For a few minutes the functioning of the cerebral hemisphere on the injected side will be disrupted; if during that time the subject's speech is disturbed, one may infer that speech is located in that hemisphere. Kimura [50] compared this method with that of dichotic listening and found the latter technique just as reliable: different signals are fed simultaneously into both ears through headsets. Each of the signals is then replayed to both ears successively, and the subject picks out the signal that had been exposed earlier.

Processing time for the right ear is generally shorter where the left hemisphere is dominant and vice versa. But Kimura found that this relationship is complicated by the type of material fed in. For melodies left ear (i.e., right hemisphere) processing was more efficient; for anything resembling speech sounds, the right ear was more efficient, again indicating the dichotomous nature of the two hemispheres' perceptual specialization. Kimura and her colleagues [21] then investigated visual processing efficiency as a function of stimulating left or right visual hemifield with either verbal or nonverbal stimuli. In contrast to Filbey and Gazzaniga [25] they found the nonverbal material to be processed more efficiently by the right hemisphere and the verbal material by the left. For simple depth localization of a rod in space—i.e., pure spatial information in the third dimension—the right hemisphere again was the more efficient but only when viewing was binocular. Monocular information was processed by each hemisphere equally.

Clearly there is a great deal more to be learned about the relationship between perceptual processing, hemispheric specialization, and hemispheric transfer, and this area of research probably holds the greatest potential for major breakthroughs in the near future.

Inherited Perceptual Disabilities

Perhaps the best-known inherited sensory defect is color-blindness. Transmitted through the female line, it is manifest in about 4 percent of the population, virtually always in males (there are rare cases of female color defect). The solution to the problem of sensory defects holds many answers about how the normal system operates, and this is one reason why color-blindness research is such an inseparable part of color vision research. The eye of the color-blind subject looks no different from that of the normal, even at autopsy. Moreover there is no good way to distinguish acquired color anomalies from those with a genetic basis.

Color vision is based on the presence of three different cone-pigment systems. Normal color vision therefore is trichromatic. Color defect is assumed to be caused by an inferred absence of one of these systems, hence we refer to such color-defective people as dichromats. There are cases where one of the three systems is merely weaker than in normals, and these are termed anomalous trichromats. Dichromats differ from trichromats in the parts of the spectrum they use to match another part. Trichromats need three primaries (i.e., red, green, blue) in given proportions to make a mixture that will match a given color. The dichromat needs only two, and this defines his condition. The two most common forms of

dichromatism are protanopia and deuteranopia, denoting a relative insensitivity to red and to green, respectively. However, when the protanope makes his match, the brightness he needs is far more than that used by the trichromat. The deuteranope has a brightness function not very different from that of the trichromat. Tritanopia, which is rare, involves a relative insensitivity to blue. Table 5.3 summarizes the properties of color defective vision [51].

Rushton [74] plotted response curves for separate cone pigments by selective bleaching of the retina for both normal and color-defective eyes and found that these curves match the spectral sensitivity curves for the same eyes. Thus the findings from the defective function provide another piece toward solving the puzzle of the nature and presence of wavelength-specific pigments in visual receptors.

A defect analogous to that of color-blindness is tone (or tune) deafness, also genetic in origin, and occurring in the population with about the same frequency as color defect. The precise nature of the defect is, however, much less well known than that of color defect.

One problem increasingly gaining the attention of sensory psychologists is that of reading disability or the behavioral manifestations generally collected under the heading *specific reading (learning) disabilities* or *developmental dyslexia*. There are indications that at least one category of this disorder also involves heritability. The case for heritability is made by family histories that include at least one dyslexic in each of two or three generations. Those affected had, until recently, been assumed to be only males, but with changing educational demands made upon females, coupled with increasingly astute testing methods, it has been found that the disorder afflicts females as well, though it is found with greater frequency in the male population.

Dyslexia poses a unique problem. As a disorder of reading and writing ability, it seriously affects school performance. The kind of testing that contributes to diagnosis relies heavily on the child's performance on these tasks, so that by the time a diagnosis is made, a child may have been in school for two to three years and may have built up a repertoire of behavior based on strategies to compensate cognitively for the disability and/or a repertoire of emotional coping behaviors to compensate for continuous failure. Such behavior generally becomes progressively undesirable and maladaptive, especially as the cognitive strategies no longer meet the demands for adequate performance. The difficulty then becomes to sort out the behavior problems from those of the underlying disability [61].

That the disorder may be neural in origin was originally suggested by Orton [66] who implicated abnormal cerebral dominance, or functional asymmetry of the two hemispheres. This hypothesis continues to generate a considerable amount of research in terms of lateralization of functions

Table 5.3
SALIENT PROPERTIES OF COLOR DEFECTIVES

Characteristic	Protanomalous	Deuteranomalous	Protanope	Deuteranope	Tritanope	Rod-Monochromat
Chromaticness discrimination through the spectrum	Materially reduced from red to yellowish-green but to a varying degree in different cases	Absent from the red to about 520 nm	Absent from the red to about 530 nm	Absent in the greenish-blue to blue (445 to 480 nm)	No chromaticness discrimination	
Neutral point, that is, wavelength of spectral stimulus that matches white	None	None	494 nm	499 nm	(a) 570 nm (b) 400 nm	All wavelengths
Shortening of the red, that is, reduced luminous efficiency of long wavelengths	Yes	No	Yes	No	No	Yes
Wavelength of the maximum of the relative luminous efficiency curve	540 nm	560 nm	540 nm	560 nm	555 nm	507 nm
CIE chromaticity of the confusion point (dichromats only)			$x_{pc} = 0.747$ $y_{pc} = 0.253$	$x_{dc} = 1.080$ $y_{dc} = -0.080$	$x_{tc} = 0.171$ $y_{tc} = 0$	
Percentage frequency of occurrence						
among males	1.0	4.9	1.0	1.1	0.002	0.003
among females	0.02	0.38	0.02	0.01	0.001	0.002

From Kling and Riggs [51: 366].

and implications for early training. With the techniques employed by Sperry, and by Gazzaniga and their collaborators, and by Kimura and her coworkers, it has become possible to test this hypothesis more widely with dyslexic subjects. Witelson suggests that in dyslexics "spatial functions are represented in both hemispheres in contrast to the specialization of the right hemisphere in normal children. In addition, and consistent with the previous studies, dyslexics have the typical pattern of left-hemisphere representation of linguistic functions. Although the left hemisphere may mediate the typical cognitive functions, the results suggest that left hemisphere processing may be deficient in dyslexics" [92:309]. This approach is prototypical for those who regard dyslexia as a disorder resulting from inadequate information processing in the brain. This defect is assumed to be caused by abnormal functional lateralization.

Another approach is based on a developmental model. Satz and his collaborators [75] suggest that the disorder results from a lag in brain maturation that differentially affects delays in the consolidation of skills emerging at different chronological stages of development. Normally perceptual-spatial abilities reveal an earlier ontogenetic development than verbal cognitive abilities, and the earlier-acquired skills are necessary for, and must be incorporated into, the later ones. Thus if the earlier skill is maturationally delayed, it will inevitably affect the development of the later one and the eventual integration of both.

Both models rely heavily on perceptual processing and carry important implications for diagnosis and treatment. A third approach, such as that by Morrison and colleagues [62], considers the main bottleneck in the information-processing disability of the dyslexic to be a major deficiency in the memory skills for visual information. One can argue, however, that this problem may be inseparable from that of faulty interhemispheric transfer, as Witelson suggested [92].

It is important to develop a diagnostic tool that will detect the condition during the preschool years so as to intervene before a child develops the cognitive and emotional strategies to meet his failure in school. This would demand (in Satz's model) tests involving perceptual-spatial tasks that are independent of letter and number symbols. Some with predictive accuracy have already been developed [76]. Preschool diagnosis may detect the condition while the child is presumably still within the critical period of cortical plasticity. Either hemispheric specialization and/or crossover mechanism could thus still be affected by specialized training. We do not know what the mechanisms underlying these hypothetical constructs are, but the findings in recent years have shown that special training, involving multiple sensory learning of spatial perceptual input, is successful in helping dyslexic children to overcome their handicap. The

earlier such training is initiated, the greater its chance for success; training not initiated until the teenage level has shown a lesser success rate.

Sensory Deprivation

Sensory deprivation can be total or partial, early or late, experimental or real. In each case there are behavioral outcomes; as yet there is no uniform principle of sensory function that would predict resulting behavior. We have already seen evidence for plasticity in young organisms during the critical periods. Behavioral perceptual deficits result from the absence of or selectively restricted stimulation. These results are assumed to be based on the failure of cortical perceptual units to develop their appropriate function or on the restriction of associative learning, but will not affect the organism's behavior once normal development has been completed. Thus the following discussion will deal only with experimental deprivation with adult subjects.

A form of partial visual deprivation has been demonstrated in experiments in which input to one of the sensory systems is severely restricted. Bexton et al. [8] had subjects wear translucent goggles so light could reach the retina, but there was no pattern stimulation. Subjects were confined and restricted in movement and personal contact for a period of two to three days. All subjects reported some form of imagery — usually, but not exclusively, visual — which they were unable to control. They experienced hallucinations that included elements from the auditory, kinesthetic, and somesthetic senses, as well as body-dissociation phenomena. Thus continuous stimulation with diffuse light seems to be giving rise to hallucinatory phenomena. Vernon et al. [84] evaluated these findings by comparing hallucinatory experiences between groups of subjects with diffuse light input and those with complete darkness. It appears that nonpatterned visual input seemed to evoke more and a greater variety of hallucinatory activity than total darkness, but these results may be due to interaction with personality variables of the subjects rather than solely to the light conditions. However, the perceptual deprivation literature, extensively reviewed by Zubek, clearly shows that perceptual hallucinations are associated with perceptual isolation [94]. The qualitative and quantitative aspects of hallucinations associated with confinement in a tank-type respirator are summarized in Table 5.4 [78]. These show a predominance of visual imagery in isolation hallucinations.

There is as yet no adequate theoretical account for the behavioral effects of sensory deprivation. I noted earlier that in the presence of ambiguities, the visual system will create contrast or borders (Mach bands,

Table 5.4
 THE QUALITY OF HALLUCINATIONS AND THEIR TEMPORAL ONSET, DURATION, AND TERMINATION AS A
 FUNCTION OF 36 HOURS OF CONFINEMENT IN A TANK-TYPE RESPIRATOR

Subject	2	73	16	C	E	F	K		
Type	Visual	Visual	Somesthetic	Visual	Somesthetic	Visual	Somesthetic		
Imagery V — vivid C — color 3D — three- dimensional	VC3D, rapidly changing organized people, animals, and so on	VC3D, figures not organized	Crushed in football pile-up	VC3D, horrendous moving animal	VC3D, bathysphere scenes	Body displaced 90° in space; feeling of leaning of on table	VC3D, flat geometric forms	VC3D, people and geo- metric forms	Sudden explosive pressure over face
Onset (hr)	1.25	?	1.5	16	?	3.0	?	?	
Duration (min)	45	?	10	2	?	30	?	?	
Spontaneous remission	x	x	x	x	x	x	x	x	
Terminated experiment			x					x	

From P. Solomon and J. Mendelson. "Hallucinations in sensory deprivation". In *Hallucinations*. New York: Grune and Stratton, 1962.

for instance), and one could argue that hallucinations are a form of imposing an analogous kind of structure. Such a hypothesis, however, even if confirmed, would still not account for the vast qualitative differences in hallucinations and dissociation phenomena across several sense modalities. There is also the question of the relationship between perception, arousal, and stress. A prolonged absence of arousal may, paradoxically, cause a form of stress which may produce these hallucinations in an effort to cope with this unusual situation.

Another paradox concerns the findings that schizophrenics with a history of hallucinations are able to tolerate sensory isolation without increasing their level of hallucinations or without hallucinating at all. In general schizophrenics seem to tolerate perceptual isolation better than nonpatient subjects. Some classes of schizophrenia, as well as autism, are characterized by behavior seemingly directed at avoiding all environmental stimulation, i. e., a form of self-imposed sensory isolation. This has led some to argue that these disorders are primarily caused by an organic inability to regulate perceptual input.

CONCLUSION

The basic phenomenon of sensory processing underlies the broader perceptual functions and leads to perceptual behavior. The hierarchical processing that governs normal perception and the principles along which perceptual functions are organized, are in summary:

- 1 Perceptual response is achieved by minimal input, determined by specific energy relations as they apply to a particular sensory system.
- 2 Each system has its unique acuity and discriminatory capacity.
- 3 Perceptual response has both qualitative and quantitative dimensions.
- 4 These are governed by appropriate peripheral and central receptor mechanisms, connected by specific connections. The degree of fixedness of these connections varies phylogenetically.
- 5 Qualitative and quantitative information is transmitted by special identifiable codes of a binary nature.
- 6 The manner in which the code is activated depends on the interaction between the pattern of stimulation and the neural organizational network, with the availability of perceptual contrast being of principal importance.
- 7 In the cortex, perception is served by specialized units which will serve the organism adaptively if they have had appro-

- priate stimulation and activation during the critical period of development.
- 8 Within limits of appropriate stimulation, the mammalian perceptual system shows sufficient plasticity and adaptability to be able to function even when perceptual inputs are radically altered. The system responds erratically (nonadaptively), however, with a prolonged absence of stimulation.
 - 9 Perceptual behavior depends on the integrated interaction of input from the two cerebral hemispheres by the callosal connections.
 - 10 Adaptive behavior depends on the smooth integration and interaction of all perceptual systems, especially during critical developmental periods.

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6

The Psychodynamic View of Human Behavior

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HISTORICAL BACKGROUND

Psychodynamic psychiatry evolved as a uniquely North American blend of clinical theory and practice with roots in psychoanalysis [5]. The first major transplant of psychoanalysis to the United States from its subcultural matrix in late nineteenth-century Vienna occurred in 1909 with the lectures of Sigmund Freud and his disciple, Carl Jung, at Clark University in Massachusetts. Adolph Meyer [29] wrote that he found Freud's 1898 paper on the "defense-neurophychooses" more enlightening than Emil Kraepelin's textbook, which was also published in 1898. Freud himself, however, expressed distrust of his enthusiastic reception in the New World, fearing a dilution of his theory, and to some degree succeeding events have proved him correct. Although the new context provided a uniquely receptive environment in which psychoanalysis could flourish, it also included strong pressures to modify it. The desired modifications, consonant with a progress-oriented and egalitarian society, were in the interest of a broader, more rapid and effective application. They were congruent with John Dewey's pervasive educational theories which combined with an open class mobility system and a prevailing Protestant

work ethic to support any belief system regarding human beings as capable of positive change: to become more effective, productive, and creative and less anxious, peculiar, or deviant. Freud, however, was concerned less with change than with understanding. But he could not escape the social pressures and in time recognized the need for briefer therapeutic alternatives to long-term psychoanalysis [23].

A major stimulus to the development of both psychoanalysis and psychodynamic psychiatry in the United States was World War II, which intensified the flow of immigrant European psychoanalysts, many of whom had begun to arrive in the late 1920s and early 1930s. The first training center, the New York Psychoanalytic Institute, was incorporated in 1931, and by 1938 the American Psychoanalytic Association had established its own training regulations and standards apart from those of the International. During the war a large number of American doctors learned that Freud's general ideas could be translated into brief psychotherapeutically effective procedures. This experience gave rise to an unprecedented demand for psychiatric training, usually including work in psychoanalysis. One long-term consequence was the gradual incorporation into psychiatric education programs, under the heading of *psychodynamics*, of a great deal that was once considered uniquely psychoanalytic [5]. Another consequence was the development of various neo-Freudian schools still called psychoanalytic — for example, those influenced by Karen Horney and Harry Stack Sullivan. Some critics class these as schools of psychodynamic psychiatry, since their practitioners have less frequent patient contact and are more concerned with the patient's social and cultural reality than are members of the more Freudian institutes, now often referred to as "classical."

Dynamic has a special semantic meaning for some clinicians, as it has come to connote personal growth or progress in a dynamic, rapidly changing society. Gitelson [25], who along with Menninger [30], regarded *dynamic psychiatry* as an American idiom, defined it as "concerned with the whole man, in his genetic, somatic, behavioral, affective, intrapsychic, motivational, and social aspects, as seen from the viewpoint of psychoanalysis."

The term *dynamic* also continues to be used as part of Freudian psychoanalytic theory. In this sense it refers to one of four aspects of the mental apparatus: the other three are structural, economic, and genetic. *Dynamic* refers to the prevailing unconscious conflicts, their tensional and defensive consequences, and the relations between conscious and unconscious life. *Structural* refers to the three developmental mental organizations that exert major influences on psychodynamics: the id, ego, and superego. *Economic* refers to the distribution, saving, and expense of psychic energy during mental functioning as well as to whether it is free or

bound to a particular complex of thoughts or feelings. *Genetic* refers to the processes of personality development, especially with regard to psychosexual maturation. The acceptance of the concept of a psychodynamic view of behavior does not require the acceptance of the division of personality into three structures or the idea that mental functioning reflects the economy of a type of psychological energy (usually called *libido*).

Both dynamic psychiatrists and neo-Freudian analysts are less concerned than the classical Freudians with the theory of a relatively unvarying sequence of psychosexual development and its vicissitudes as a central basis for ordered or disordered adult behavior. Some give equal weight to aggressive impulses or to the impact of socioeconomic forces. Most are not as concerned as the Freudians with working through in treatment of a fully developed transference neurosis or the reconstruction of infantile amnesia. Neither use therapeutic contexts and procedures (such as four or five sessions weekly, with the relatively silent analyst seated behind the reclining patient) that maximize the development of transference and resistance. The theoretical interests of both emphasize Freud's ego psychology rather than his earlier formulations about instinct theory and infantile sexuality.

THE PSYCHODYNAMIC SYSTEM

The term *psychodynamic* has expanded to refer to a particular way of formulating as well as labeling (diagnosing) and modifying (through psychotherapy) behavior. Psychodynamics as a system of behavior interpretation can illuminate normal, as well as the sick or disordered, behavior. The psychoanalytic base of the system rests in a series of interlocking concepts Freud developed long before the concepts of ego psychology were systematically enunciated. In *The Interpretation of Dreams* (1900), *The Psychopathology of Everyday Life* (1901), and *Jokes and Their Relation to the Unconscious* (1905), he delineated a basic theory of public behavior reflecting private meanings of which the concerned person was not aware. Dreams, slips of the tongue, inexplicable forgetting, jokes, and other phenomena were shown to contain messages that could be discovered by unraveling what were taken to be condensations, distortions, and other disguises, systematically and regularly produced. Many of these distortions and disguises were assumed to defend the subject from confronting feelings, wishes, or memories within himself which threatened uncontrollable anxiety, guilt, or other feelings; hence they were regarded as reflecting the operation of defense mechanisms. These ideas, summarized and revised to fit new knowledge from clinical psychoanalysis, were reviewed in *Inhibition, Symptom, and Anxiety* (1926), and a definitive listing and descrip-

tion of defense mechanisms was provided in Anna Freud's *The Ego and the Mechanisms of Defense* (1936).

Central to the psychodynamic concept is the idea of unconscious conflict. The existence of unconscious wishes, feelings, memories, and other behavioral determinants is inferred on the basis of subjectively experienced or publicly observed phenomena, which are called derivatives (of the unconscious). These include sleeping dreams, daydreams, directed fantasy, and all the illusory, hypnotic, hypnagogic, and hypnopompic phenomena associated with falling asleep, awakening, and altered states of consciousness. They also include neurotic and psychotic symptoms and other behavior designated as symptomatic. The word *dynamic* here refers to an unstable equilibrium which is a function of conflicting, opposing forces. In medicine the notion is regularly encountered with regard to body fluids and air in hemodynamics and pulmonary dynamics. The forces involved in these dynamic tensions can be measured; those involved in the production of psychological tension cannot. The tendency persists, however, to apply inappropriately quantitative thinking to these hypothetical constructs.

The unconscious psychological conflict central to the psychodynamic system generates unconscious tension (conceptualized as anxiety, guilt, shame, or disgust), which serves as a signal to activate one or more of a series of unconscious defense mechanisms [14]. These ward off the unacceptable wish, impulse, or idea, which forms one vector of the conflict, and help keep the tension at a manageable level. They are major shapers of the behavior being emitted by the person. The behavior is also shaped, however, by the continuing influence of the warded-off impulses. It is also to an important degree a function of a continuing process of adaptation. Adaptation recognizes that behavior, including subjectively experienced thoughts and feelings and objectively observable acts (such as verbal reports of inner states), is influenced by a person's participation in an ongoing social process, as well as the way in which he is programmed by developmental and earlier life experience. Ego-defensive activities maintain intrapsychic equilibrium. Adaptive activities, including those called coping, which may result in changing the environment rather than adjusting to it, help maintain an equilibrium between the person and the world around him. Both are included in a psychodynamic view of behavior and are in a constant process of evolution and, in many cases, of repetition.

Although some conflicting wishes or impulses are specific to the person and his situation, they may be reduced in almost every instance to generally occurring conflicts present in most people socialized and enculturated in Western industrial societies. These include, for example, those involving wishes to be independent and autonomous and those to be dependent and cared for, even though the latter may result in a loss of

freedom and self-determination. These conflicts are perhaps more intense in cultures emphasizing the Anglo-Saxon values of self-sufficiency and emotional control (especially upon entering adolescence) than in those of Latin heritage, in which greater value is placed on family and affectively reciprocal interpersonal relationships and less on adolescence as a time for severing dependent relationships with family. Related is the conflict between wishes to be passive, submissive, or compliant and those to be active, dominant, or aggressive. The former carry the promise of security, recapturing the situation of child and parent or gaining approval for conformity. But because they embody a variety of threats, they may also stimulate anxiety, depending upon the person's specific life situation. For some men, for example, the temptation of passivity is threatening because it implies homosexual surrender to more active, competing males. For others the wish to be dominant or aggressive is threatening; it may imply the possibility of destroying parent figures, or exploding one's self, or, having eliminated the significant others, being left alone in the world. Subtle variations may occur among social classes or ethnic groups within the same country. Upper-middle-class boys in traditional Brazilian families, for example, appear to find hostile impulses directed against their fathers more anxiety or guilt provoking and thus keep them under more rigid control (i.e., out of consciousness) than American boys [11]. The detailed study of individual life histories, by the process of dynamic psychotherapy, yields data permitting identification of individual variations on these major themes and provides therapeutically and theoretically useful insights about the sources of individual behavioral variance. They also indicate the themes associated with affective arousal around which symptomatic or maladaptive self-protective or compensatory behavior tends to be organized, and thus offer guides for interpretation or counseling.

Another type of conflict involves a socially unacceptable wish or drive, usually sexual or aggressive, versus an inhibiting force. This last, referring primarily to inner standards against which one measures his own behavior and that of others, is often summarized in psychoanalytic structural terms such as the superego.

The nature of the tension produced by the unconscious conflict may be a function of the specific vectors involved [14]. If the central issue is the expression in action or conscious awareness of a personally unacceptable wish which transgresses inner standards, the signal tension is assumed to be unconscious guilt. If it is one that stimulates the fear of being discovered, the tension is assumed to be unconscious shame. Disgust implies a warded-off impulse difficult to assimilate, or "swallow," one which in its infantile roots is associated with nausea or distrust of the food being offered by presumably trusted parents. Clearly it is difficult to differentiate among these forms of tension. The differentiation is often retrospective,

on the basis of the symptomatic final common pathway. Most commonly the tension, regarded as nonspecific, is called anxiety, designating not an affective state but rather a signal of intrapsychic danger. Its differentiation into more complex forms is also based at times on consciously experienced and publicly observable states of arousal. Confusion of the state of overt arousal with the inferred unconscious signal is frequent because of the nature of the psychodynamic conceptual system. Thus conscious or symptomatic anxiety may be considered in part a consequence of the inadequacy of the defensive warding off. If the dangerous impulse does emerge into consciousness, it is logical to assume that it is accompanied by a state of alarm or arousal.

PSYCHODYNAMIC THERAPY

Despite significant common features, there are differences in the ways in which psychiatrists who consider themselves psychodynamic conceive and conduct their practices. The differences range from the use of drugs in conjunction with psychotherapy to varying criteria for the selection of patients to theoretical and practical issues regarding work with individuals, family systems, or other human groups. Many differences surround the psychotherapeutic situation itself, such as the use of the reclining position for the patient or the degree of self-disclosure in which a therapist may engage. Some variations in the amount and nature of therapist activity seem to reflect the therapist's own past experience and personality more than they do a particular system of psychological diagnosis and treatment. There is also considerable variance among individual styles of psychodynamic formulation according to developmental or current life events. These variations within the general framework of a psychology of unconscious conflict and motivation underscore the degree to which psychodynamics, like psychoanalysis, is a system of individual interpretation rather than statistical prediction. The psychodynamic task, like that of psychoanalysis, is essentially the interpretative tracing of the meaning for a person, with a particular life history in a particular sociocultural context, of his particular pattern of behavior. In this sense psychodynamics provides one frame of reference or set of guidelines that a psychiatrist can use to interpret his patient's behavior. The variations of the interpretative conclusions among individual practitioners depend largely on the degree to which their psychoanalytically derived views are modified by sociocultural knowledge, the approaches if such therapeutically oriented philosophies as existentialism or phenomenology, interest in families or other groups, or psychophysiological and pharmacological studies, including those on altered states of consciousness.

THE DEFENSE MECHANISMS

The defense mechanisms activated by signal tension are psychological constructs, aspects of ego functioning. The ego is conceived as an organization of functions operating to maintain intrapsychic stability by mediating between the claims of internal drives, needs, and constraints and the requirements of reality, i.e., the environment. Within this group of functions, those concerned with psychological defense are central. Their nature is inferred from the kinds of behavior observed in consequence of particular events.

Although defensive operations are universal aspects of normal psychological functioning, their nature is most clearly seen in abnormal functioning. For example, some people display inappropriately cheerful, distractible, even grandiose behavior after bereavement, job loss, or other events that might be expected to result in diminished self-esteem, sadness, withdrawal, or feelings of worthlessness. They seem to be protecting themselves from appreciating the affective significance of their loss and apparently experience less mental pain in consequence. This behavior pattern is partly explained by assuming a mechanism of defense termed *denial*. Denial is assumed to operate outside of awareness, i.e., at an unconscious level and automatically, since those concerned do not appear to have deliberately decided to ignore the bad news. When confronted with the information, they may acknowledge what has happened but, apparently driven by forces over which they have no control, continue to behave as though the events had not happened. Their behavior is the opposite of what one might expect — elation rather than sadness, activity rather than withdrawal, grandiosity rather than diminution. The regular practice of denial is also assumed to permit concentration in the face of distracting stimuli and equanimity in the regularly encountered and potentially overwhelming information of everyday life. Among these the messages of annihilation associated with death and of helplessness associated with illness are most prominent. Clinicians who see evidence of denial in their patients with cancer or other serious disease or injury must sometimes decide whether to let the defense stand or whether to deprive their patients of the comfort it offers in the interest of more effective treatment. This can be true for other defensive operations as well.

Behavior patterns explained by postulating a defense mechanism such as denial may of course be understood as reflecting shifts in cerebral biochemistry, the early reinforcement of patterns of avoidance behavior, identification with a parental figure who behaved similarly in the face of loss, or in other ways. The psychoanalytic and psychodynamic systems offer explanations that are not necessarily incompatible with these alternatives.

Ego functions other than defense are concerned with making decisions, controlling motor acts, paying attention, and integrating whole complexes of thoughts, attitudes, and feelings in the interest of harmony and effective synthesis. Dysfunction in one aspect of the system is reflected in changes in other parts of the system. The defensive functions operate in concert with integrative, executive, and other functions conceived as part of this system of interrelated processes, all of which are influenced by a person's talent, intelligence, basic sensorimotor equipment, acquired skills, and knowledge.

The defense mechanisms automatically exclude anxiety-laden, guilt-laden, and other unacceptable mental contents from conscious awareness. In so doing they keep unpleasant conscious tensions at a manageable level. It is possible, however, to engage in such exclusion deliberately. The process of intentionally ignoring something is called *suppression*. Some people are better able to do this than others; furthermore, the ease of suppression appears to increase with practice. It may be aided by the use of alcohol or other drugs or by engaging in distracting activities that will so occupy one's mind that the undesired material is at least temporarily forgotten.

It is clear, then, that the conscious act of suppression has something in common with denial and is inferred as central in the production of hypomanic states. An everyday example of the adaptive deliberate exclusion of unwanted, though not always anxiety-provoking, information is that of concentrating upon a task despite intrusive thoughts or background noise, such as that of traffic. If the subject is confronted by that which he is trying to exclude or forget, he may acknowledge the information in question or may engage in more intense efforts to avoid it. In the case of suppression, acknowledgment is usual but reluctant, and increased counterefforts are less intense. In the case of denial, acknowledgment is often only partial and usually temporary except in instances in which the hypomanic state is in the process of transition to a depressed one. The counterresponse, furthermore, may be significantly angry or even paranoid as especially vital and disturbing matters are touched. These differences may be related in part to the nature of the information being excluded. The sequelae of intensely traumatic experience, for example, may be impossible to handle by ordinary suppressive efforts. More important in this respect is the person's repertory of defending, coping, and adaptive mechanisms, as well as his social support system. It is logical to conceive of a hierarchy of responses to stress ranging from the most adaptive and accessible to conscious control to those least accessible to conscious control and with the most maladaptive consequences. These last include the defense mechanisms considered to be of primitive developmental origin, especially those such as *projection*, which can impair a person's capacity to appreciate and act upon reality and isolate him from

other people who might provide needed social support. Even here, though, there are instances in which a defense maneuver may have specific interpersonal value as well. A person who tends to project may also be exceptionally sensitive to the usually subliminal indications of anger, sexuality, or fear present in the behavior of others. Social responses to these ordinarily unperceived cues are generally maladaptive, but they can be useful.

The adaptive value of a defense mechanism depends upon the context and circumstances. For example, the suppressive elements maintaining a behavior pattern that also reflects denial are most obvious when they have adaptive value as well. Thus within the closed wards of a traditional mental hospital, inappropriately cheerful and mildly grandiose behavior in a patient is usually more acceptable to the staff than retarded, withdrawn, or agitated behavior. Without knowing it, they tend to reinforce such behavior in patients by laughter, approval, and the granting of small favors. In an instance in which the patient is deserted by his family and has few of life's amenities, behavior that evokes this kind of staff response is, in fact, adaptive. A visiting social worker who is not part of the staff system or the ongoing social process in which the patient is a participant may elicit appropriate tears, a sense of isolation, and even some reactive anger against both relatives and staff.

The problem of the unconscious viewed as a system constitutes an issue in the relation between suppression and repression. When suppression becomes habitual and therefore only partly deliberate, it may be viewed as repression, an automatic means of selectively forgetting unacceptable information. The information is selected in part because it is linked to infantile sources of anxiety, which may become conscious in the form of wishes, memories, feelings, fantasies, or other mental contents. It thus becomes apparent that repression is central in the concept of defense, necessary even for the operation of denial. Freud's concept of a dynamic unconscious views repression as the mechanism that keeps information which has never reached awareness from ever doing so. In the process of therapy or analysis, being close to or having touched unconscious material is usually inferred on the basis of the patient's avoidance behavior — failing to free associate, appearing "blank," changing the topic, arriving late, or canceling therapeutic hours. These behaviors are referred to collectively as *resistance*. On the other hand, the inference may also be made on the basis of an outpouring of fresh or not previously offered material. Although the variations in therapeutic resistance or collaboration are explained on the basis of unconscious factors, the existence of the latter is predicated on the former.

The most parsimonious and operational definition, one implied although not explicated in much dynamic psychotherapeutic practice, designates as unconscious whatever motivates poorly understood behavior

i. e., with determinants out of awareness. Understanding in this instance cannot be achieved by unaided introspection; it requires the assistance of a professionally trained helper, a guide in the process of interpreting the unknown who is particularly skilled in investigating symbolic forms that designate or refer to hidden meanings. Repression, then, becomes the cornerstone of the defense system, and denial is closely related. Projection, isolation, undoing, displacement, turning against the self, and reaction formation all operate in conjunction with repression to keep unacceptable impulses out of consciousness or effective action.

Regression, although similar, has a more generic significance since the employment of any defense mechanism may be said (depending upon circumstances) to be regressive (i. e., going back) in nature. *Reaction formation* is also unique in that it is most often invoked to explain a relatively unchanging character trait rather than an acute neurotic or psychotic reaction. Similarly *identification* may be understood in developmental as well as defensive terms. It is one of a cluster with *incorporation* and *introjection*. Finally *sublimation* differs from the others since its behavioral reflection is usually regarded as a sign of health rather than neurosis.

The most commonly invoked, and presumably most primitive, defense mechanism since it appears in early life and is analogous to externalization (a regularly encountered means of explanation by adults in preliterate societies) is projection. This mechanism, postulated by Freud as a partial explanation for paranoid behavior [20], involves the attribution of one's unconscious impulse to another person. Freud's original theory of paranoia included the idea that unconscious homosexual impulses are dealt with by attributing them to someone else, who is then perceived as a persecutor. Bak [1,2] has described paranoia as delusional masochism; it results from the projection of a wish to be hurt and sometimes to hurt others. It has been noted that litigious people who suspect others of wishing to injure them may in fact evoke such injury; they make the fantasy come true, in consequence of their own offensive and threatening behavior, which they themselves experience as defensive [4].

Dynamically projection may be related to *displacement* to the degree that it represents the attribution of a feeling originated in one source to another. A person is said to have displaced anger, for example, if it is generated in relation to one person, it is expressed inappropriately against another with whom the first has something in common. In this way the fact of hostility against the original source is kept out of consciousness. Cross-sectionally this may be seen, for example, in a man's irritation with his secretary after having repressed anger directed to his wife. As in the case of the other defense mechanisms, however, some infantile root for the feeling is usually considered essential insofar as the defended-against

material is part of the dynamic unconscious. Immediately context-related anger against the wife might not, therefore, qualify as a reason for displacement. The reason for employing the mechanism could, rather, stem from unresolved hostility toward mother unconsciously perceived as having abandoned him. This could lead to an unusual need for expressions of love and nurturance in adulthood, making him hypersensitive to variations in the behavior of his spouse.

Displacement is one of the elements, according to Freudian theory, of dreamwork, the process of creating a manifest dream from unconscious infantile elements utilizing day residue. Manifest dream construction reflects a defensive process in that it disguises the more fundamental feelings, wishes, or memories striving for direct conscious expression. Another process involved in dreamwork is called *condensation*. This too might be considered a mechanism of defense, helping to produce the distortions of wishes and memories necessary for their emergence in the form of an unconscious night dream or waking fantasy. It refers mainly to visual image formation but may be involved in the development of non-imagic fantasies which can serve as the basis for action or the precursor of reality-oriented planning. Defensive processes involved in fantasy production, then, may have ultimate adaptive value.

Turning-against-the-self is another type of displacement. It refers to a way of dealing with unacceptable, unconscious destructive impulses. Instead of being admitted to consciousness and discharged against the person in respect to whom they were generated, they are directed against their own author, producing a symptom picture of depression. This has been understood in other defense-related ways, such as expiating a sense of guilt or gratifying a need for punishment. In the case of bereavement or the loss of an ambivalently loved person, the hostility with no external target is said to be directed inward against the introject of the other individual. *Introjection*, then, is another defense mechanism with the function of protecting one against the threat of loss.

Isolation, splitting the affective from the cognitive component of a perception, may make the perception more tolerable. This may be coupled with a perceptual narrowing so that a single aspect of a situation is viewed out of context. In both of these ways, isolation, like denial and repression, keeps crucial aspects of a thought or a feeling out of the consciousness. This mechanism is thought to contribute to the kind of behavior called *obsessive-compulsive*.

Such behavior is also believed to reflect the operation of a mechanism called *undoing*. Obsessive concern with whether a gas jet has been turned off, for example, may suggest the need to undo a wish to leave it on. Behind the wish may be a more specific motivation, such as to destroy someone or to soil the environment symbolically. *Substitution* is some-

times linked with undoing, and the particular behavior exhibited may also be regarded as a form of displacement.

Repeatedly engaging in seemingly senseless thoughts or actions can be seen either as a defense mechanism (i.e., turning passive into active and thus gaining mastery) or as an overriding principle of psychic functioning called *repetition-compulsion*. This may cover a wide range of obligatory behavior patterns serving a variety of functions. Repeated and obsessional thinking, for example, although it is uncomfortable and maladaptive, may represent a rehearsal of a feared situation and thus be narrowly understood as anxiety reducing. It may distract attention from other matters, especially since it represents them symbolically, and thus aid the repressive process in keeping them out of consciousness. Compulsive forgetting, for example, or criticism of one's superiors, which results in failure or expulsion from a job, may protect one against unconsciously feared success, which carries the threat of destroying an ambivalently regarded parent upon whom one is dependent.

Reaction formation refers to behaving in a manner opposite to that which would take place if the assumed unconscious wish were to be translated into action. A constantly cheerful person who does not show anger even when it is socially warranted is thus assumed to be dealing with chronically repressed and intense hostile wishes.

Finally the process of *rationalizing* one's behavior — adducing evidence to justify it — has been identified as a defense mechanism. To the degree that this is mainly cognitive, it may serve the function of avoiding unpleasant feelings and in such cases is sometimes called *intellectualization*. An elaborate intellectualizing effort to rationalize behavior may also function to avoid confronting personal motives that are out of the consciousness. In its most extreme forms, rationalization and intellectualization can lead to quasi-delusional thinking.

Identification refers to the unconscious process of acquiring the ways of thinking, feeling, and acting of another person, almost invariably one in some type of nurturing or controlling relationship over a long period of time. This may be seen in adult psychoanalytic patients when, as an aspect of the transference process, they begin to exhibit some of their therapist's social or linguistic mannerisms. It has been identified in concentration camp prisoners in relation to their jailers. It is a regular aspect of the child's learning how to get along with others and acquiring the values, symbols, and belief systems of society. These processes of socialization and enculturation always involve a degree of modeling. The development, for example, of gender-role behavior takes place within a nurturing relationship with a same-sex parent or surrogate and is continued through culturally ritualized rites of passage and peer group relationships.

Just as habitual suppression is related to the process of repression, so imitation, which may be intentional or habitual, is related to identification. Prior to the developmental stage when a child can be aware of the fact that he is imitating, infants engage in copying behavior (such as smiling), which apparently takes place without an accompanying conscious awareness. During this preverbal phase of development, precursors of identification, called *incorporation* and *introjection*, are postulated. Incorporation as a developmental process is conceived in relation to the oral phase of psychosexual development. In adulthood it is sometimes postulated as a way of defending against the painful or guilt-laden infantile components of loss. One behavioral reflection of this may be transient multiple relationships formed during manic episodes following loss and depression. Elation has been interpreted as an unconsciously attempted recapture, via the mechanism of incorporation, of the blissful infantile experience of nursing at the breast [28].

The distinction between incorporation and introjection is unclear, but the latter is often considered to occur at a somewhat later developmental period. Like identification, it may have both defensive and maturational functions. Identification with the aggressor, for example, is a way of dealing with the fear of being destroyed [15]. Similarly the introjection of a punitive or psychotic parent may be a means of controlling the potentially uncontrollable by one self becoming the threatening person or absorbing parts of him or her. Developmentally these processes may be understood as ways of dealing with the tasks of environmental mastery. A need for defensive identification in adulthood, on the other hand, may reflect some maturational failure. More often it is understood as an aspect of regression that occurs under circumstances in which ordinary ways of adapting and coping are useless, i. e., situations of utter helplessness as in the case of concentration camp prisoners. The adaptive value of such identification is clear insofar as it facilitates the acceptance of an unbearable situation and may even result in some favors from the authority figures. The defended-against unconscious impulses may include a range of rebellious behaviors from soiling to patricide.

For *regression and fixation* Freud's original analogy was to an advancing army which, meeting an opposing force, retreats to regroup on previously captured territory. Psychological regression, then, was thought to involve a retreat to a developmental point where significant frustration had been overcome or where, at least, a significant pause had occurred. The nature of the going back was not always clear. It could be chronological, in terms of age level. It could be topographic, in the sense of ordinarily unconscious or preconscious material entering awareness, as in the case of schizophrenic psychoses; here a decreased efficacy of repressive

processes is sometimes assumed. Or it might be a move from more to less complex ways of perceiving and information processing, a type of dedifferentiation [9]. In this last instance, a shift from the rational, logical thinking of the waking state, labeled by Freud as *secondary process*, to the nonlogical or paralogical more imagic processes characteristic of dreaming and fantasy, Freud's primary process, may also be postulated.

Regression, then, involves a withdrawal from confronting overwhelming reality to wish fulfilment in fantasy, which makes continued adaptive or coping efforts unnecessary. Unlike most other defense mechanisms, it does not prevent the conscious expression of unacceptable mental contents; to the contrary, it permits them. In regressed states, therefore, patients may experience extreme terror or discomfort, as well as the opposite. This leads to some question as to whether all regression (e.g., in consequence of brain injury, fatigue, or alcohol or other drugs) may be considered even partial reflections of a defensive process or whether they might be understood more accurately as consequences of the loss of integrative capacity.

The adaptive side of regression is that labeled "in the service of the ego" [27]. This refers to the intentional temporary relinquishing of reality to facilitate free floating fantasy, or the use of one's dreams or other paralogical experiences as sources of creative inspiration. This is assumed to require relative accessibility of the usually inaccessible reservoir of pre-conscious or primary process fantasies, images, and memories, and a relatively low degree of anxiety about being overwhelmed by normally repressed impulses. Freud had earlier hypothesized artists as characterized by a "flexibility of regression" [23].

Classically *sublimation* has referred to the process of harnessing sexual or more broadly defined libidinal energy for socially useful and approved activities. More broadly it may be conceived as the process of channeling instinctual drives within a structured, socially approved framework. It has required the assumption of shifts in psychic energy, the libidinization or delibidinization of particular perceptions, or action tendencies. Defining this mechanism cross-sectionally on the basis of its positive consequences has been difficult since there is no evidence that suppression or repression of sexual wishes or activity, whether genital or pregenital, is necessarily associated with increased creativity or productivity. The fact that unhappy or tormented persons deprived of affectional contact may, if they are talented, express themselves in artistic form does not constitute evidence for this mechanism. It may, however, be a useful way of differentiating adaptation or coping through productive work from that involving other activities or from disorganization in consequence of stress. If the concept is used developmentally, it becomes more useful. The capacity for reciprocal friendship and same-sex peer-group membership,

for example, may be regarded as the consequence of a successful sublimation of early homosexual tendencies. The term has also been widely used to explain inappropriate or destructive consequences of the perversion of certain socially approved behavior patterns. Thus a surgeon who regularly frightens his patients or carries out unnecessary operations may be said to exhibit a breakdown in the sublimation of his sadistic impulses necessary as prerequisites for his choice and successful conduct of a career.

SYMPTOMS AND ADAPTATION

Symptomatic behavior is considered an unsatisfactory compromise between unconscious and defended-against wishes, unconscious and defended-against superego demands, and reality requirements. It is shaped by the leading defense mechanisms noted above. It also reflects the "return of the repressed," i.e., the disguised representation or gratification of the warded-off impulse. For example, an agitated, depressed person whose behavior reflects that he is turning his hostile impulses against himself may through his complaints and demands for care and reassurance express his hostility, although in disguised form, against spouse, parents, or children.

Symptoms are also symbolic communications or expressions of other sorts: cries for help or attention, unresolved conflict identifications, culturally shaped expressive or instrumental acts. To the degree that they evoke environmental responses, they result in secondary as well as primary gain. The latter is the immediate intrapsychic consequence of the defensive process — anxiety and impulse control. The former includes a variety of rewards ranging from control over or care from important others, to those such as temporary freedom from work demands inherent in the socially defined sick role [31].

The final behavioral outcome of the psychodynamic process also reflects the continuing operation of an adaptive process which may make the thoughts, feelings, or acts in question less obviously symptomatic [12]. Sullivan's concept of security operations, including maneuvers aimed at interpersonal as well as intrapsychic factors, combines adaptive and defensive functions [32]. Hartmann [26] suggests a broad concept of adaptation, not including defense: psychological adaptation is the process of establishing and maintaining a reciprocal relationship with the environment. The unaware therapist may label adaptive behavior that reflects the struggle to survive in particular environments as defensive [12]. An emergency room physician, for example, may label a wary, suspicious ghetto adolescent as paranoid, forgetting that his immediately inappropriate behavior had been necessary for survival in a threatening environ-

ment. On the other hand, when originally adaptive behavior persists outside of the environment in which it was functional, it may be regarded as symptomatic. This kind of continuing behavior pattern which now evokes negative social repercussions or useless energy expense may continue as a reflection of repetition-compulsion or serve some primary anxiety-reducing or impulse-controlling function. The central point for the psychodynamically educated observer is that the interpretation of any behavior as defensive or adaptive requires as thorough an understanding of its current sociocultural context as of its historical antecedents and the personality structure of the actor.

CONCLUSION

The psychodynamic view understands human behavior in terms of unconscious or out-of-awareness aims, motives, and intentions in conflict with each other. Much behavior reflects attempts to reconcile these conflicts and to deal with the unpleasant tensions (anxiety, guilt, shame) associated with them. But behavior from this standpoint also reflects a continuous process of social adaptation and coping. Thus the therapist must understand the nature of the society and culture in which the patient was reared and in which he and his patient work together.

Psychodynamics is derived from psychoanalysis, and the therapeutic interventions of its practitioners, like those of psychoanalysts, are mainly interpretive. The psychodynamic system does not, however, require attention to the psychoanalytic concepts of psychic energy and structure (id, ego, superego). It is an essentially North America adaptation of Freud's ideas aiming at a more rapid treatment process with the relatively limited goals of adequate social functioning.

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7

Communicational Aspects of Behavior

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To communicate is to be joined to another, to transfer a part of oneself, to inform and to converse, to have intercourse and to infect, to get in touch, to say, and to correspond. People share experience and accomplishment in a myriad of ways [5]. We wink and blink, nod and turn toward and away; hug and give a cold shoulder. We preen and dress, pick lint that is not there, and straighten ties that are already straight. We speak and listen, write and read. Our feelings are at times obvious and at other times hidden to others. All this and much more comprise the data challenging those who study human communication. Although much is known about the patterns of human communication, there is much more that is not. The most important statement about human communication is that "everyone does it better than anyone can understand." Just as one does not need to know how an automobile works to drive it, humans do not need, and indeed, many do not seem to want a theory of communication in order to communicate.

Although there is no unified theory of human communication, there are many useful approaches to the study of communication that are relevant to clinical practice. This chapter will serve as an introduction to the study of human communication: nonverbal communication and language.

The study of the spoken language provides a convenient point of departure because the data, spoken words, seem more discrete and therefore more explicitly in awareness than other aspects of communication, nonverbal movements. The most important principle involves the attribution of meaning. The meaning of any particular unit of communication is derived from the relationship of that unit — syllables or words — to the context in which the unit or sound occurs. A New Yorker may say, "Say Oil, you need tree qwawts of earl" ("Say Earl, you need three quarts of oil"). A non-New Yorker could understand the meaning of the sentence but not the three words pronounced differently (*Oil, earl, tree*) out of context. Linguists examining a sequence of sounds ask questions about the relation of any particular sound to its context. They wonder whether substituting another sound in that location makes a difference. Hearing the word *skit* a linguist might ask, whether *skit* is different from *spit*. Because the sound sequences are considered by informants (native speakers) to have different meanings, he concludes that in the context, *s—it*, the sounds *k* and *p* contrast. If he considers the *p* sound in *spit* and the *p* sound in *pit*, he finds that they are pronounced differently. Placing your hand over your mouth and saying those two words will reveal the difference. You will feel your breath as you emit the *p* in *pit* more than you will the *p* in *spit*. The linguist will discover that ordinary native speakers of English do not consider these two *p* sounds to have different meanings in a variety of contexts. He will conclude that the two *p* sounds do not contrast, that they are free variants (or are in complementary distribution). He means by this that one could substitute one sound for the other without changing the meaning of the sound sequence. This principle of isolating a unit in a communication sequence and substituting another to see if it makes a difference is a most important technique in the study of communication. [16].

This technique is applied to units of varying size and is implicit in clinical history taking. Clinicians often set up a particular context for a patient with a question such as, "Is the pain sharp or dull?" In that context the patient's reply is important. When a psychiatrist evaluates the quality of a patient's judgment, he asks, "What would you do if you were in a theater and smelled smoke?" In that context shouting *fire* demonstrates poor judgment, for the audience might panic. During one interview a patient said that she had been depressed ever since her husband's *book was hit*. In that context those three words had no meaning for the psychiatrist; he replied, "Book was hit?" with a rising inflection and with his face screwed up in a perplexed fashion. She replied that her husband was a bookie and that *book was hit* referred to a raid by the police. Meaning is conveyed by informational units in particular contexts. How we define a unit and de-

marcate the relevant context are tasks that will concern us throughout this chapter.

We are all students of communication, for we automatically examine the relation of words to the context every time we listen and plan speech. Some jokes depend on inducing a set in a listener; that is, the listener is led to expect one thing and is surprised with another. The title of a recent pornographic movie, *A Hard Man Is Good to Find* serves as an example. We are led to expect certain sequences by our past encounters. Learning how to communicate is learning the relation of any particular unit to the range of contexts in which it appears. This is true of nonverbal as well as verbal communication. We would not notice a sequence of units that we had never encountered before, that included no words, audible sounds, or recognizable letters. All the attempts to communicate by radio signal with intelligent beings in other worlds assume that these hypothetical beings are in some way like ourselves and use somewhat similar techniques to communicate.

There are two divergent sets of explanations for our ability to communicate. One theory assumes that we learn everything we need to know in the course of growth and development; nurture has the predominant influence. Based on the tabula rasa theory of Locke and the school of philosophy known as logical positivism, proponents assume that we order our universe according to experience and the principles of inductive reasoning; things that occur together often enough are inferred to be causally related. This approach has led to much experimentation and a renunciation of armchair speculation. The structuralists reject the tabula rasa concept of the brain and believe in innate concepts. The behaviors that we observe are called *surface structures* and the relations between these surface structures cannot be explained without reference to so-called deep structures that generate surface behaviors. It is the discovery of these deep structures that is the goal of science [21].

The pendulum swings back and forth between logical positivism and structuralism. Clinicians who continue to be students of communication throughout their career should learn to recognize that within all of us there are two opposing biases that liken us to these two schools of philosophy. When we take it for granted that we are expert in our native languages, that we know what a message (surface structure) really means, our unconscious bias has swung toward the structuralists. When we approach a person from another ethnic or cultural group with the assumption that we cannot take anything for granted, that we have to be suspicious of the meaning of each message, our unconscious bias has swung toward logical positivism. As an example, it is not uncommon for people to take a swipe at the end of their noses during the course of a conversation. Studies of the

context in which this occurs has revealed that the nose swipe is correlated with receiving a message that is judged suspicious or offensive in some way. It is not polite to turn away in the midst of conversation. What does one do with a tickling nose? We take a swipe at it. The nose includes erectile mucosa that serves as a structural basis for the nose swipe. In the course of development, this structure acquires a learned communicative function. Thus humans are born with certain innate structures that permit certain functions to be learned and used. In the continuing study of human communication, both structuralism and positivism have led to important advances. The play between these two approaches, between that which is best explained by *nurture* (positivism) and that which is best explained by *nature* (structuralism) will be evident as we trace how children learn to speak.

The approach to communication taken in this chapter is developmental. It is assumed that the foundation for communication skills and the attribution of meaning is derived from childhood experiences, which furnish contexts within which the child's communication skills develop. The child is considered to be a student of his mother tongue using a biologically endowed aptitude and experienced communication. Nature provides the equipment, and nurture provides the data for communication development.

A unit of speech is set in the larger context of spoken language — sounds in a word, words in a sentence, sentences in paragraphs, and so on, and the linguistic context is set in turn in a nonlinguistic reality, the purpose of the talk. My approach is not as theoretical as it is descriptive. I will describe the events of language learning and relate them to the process of human communication.

LANGUAGE LEARNING

The neonatal cry is a powerful stimulus, as one colleague discovered while playing recordings of such cries in his office. People knocked on his door to find out what was going on. What was going on was a study of how the neonatal cry becomes "tamed" over the course of the first weeks of life. During this period the reflex cry of the neonate signals the caretaker to respond to the needs of the neonate. Ordinarily the neonate is either hungry, cold, wet, has a pin sticking, or has defecated. These needs are well within the caretaker's capabilities. As the neonate learns that his cry leads to need satisfaction in the context of loving attention provided by the caretaker, the cry becomes tamed. There is some evidence that the cry does not become tamed when the caretaking is inadequate. This relationship between need satisfaction and the maturation of communicative

skill as evident in the taming of the cry has fundamental implications in individual development and serves as a limit beyond which our knowing of another cannot proceed. In human development the first several weeks of life are crucial; the foundation of basic trust in another is formed during this time. The neonate is equipped with reflex indicators of success signaling that he is obtaining physiologic relief from hunger, the cold, the pin sticking, the soiled diaper. When these needs are met, the infant falls asleep. A communication cycle has been completed.

The meaning of the communication to the neonate and the meaning of the communication to the caretaker is anchored in a very private evaluation. The caretaker cannot know with certainty that the neonate is satisfied. Some mothers who breastfeed their infants may be anxious about the amount of milk provided their child and would like proof. In some measure this need for proof is linked to a need for self-esteem on the part of the mother. For the experienced mother the fact that her breasts have been emptied and that the neonate falls off to sleep is enough evidence. Even for this experienced mother when she feels down, and especially for a mother who is insecure about her self-esteem, there is the possibility that the sleeping neonate is still hungry. Perhaps the infant fell off to sleep prematurely. From this very first communication cycle we can derive another important concept about human communication: in most instances we can only privately acknowledge the experiential consequences of human communication; we can have no proof. There is a level of uncertainty about the private meaning of messages that we learn to tolerate.

The capacity to be satisfied by mutual acknowledgment rather than by proof is defined as basic trust. This capacity is fostered by the pragmatic success that is signaled by the neonate's reflex satisfaction as the first communication cycles are completed. The pragmatic meaning of a communication — the significance of a message to a particular person — cannot be studied in pure objectivity. Coming to terms with this limit to knowing another is a critical issue. Even if we have the baby wired, could see into the stomach, and monitored other physiologic processes, any conclusion that the infant is satisfied would be inferential. The part of the infant's brain that sums up experience and triggers another sleep episode is private and beyond the frame of communication as we know it at present.

The pragmatic consequences of the first communication cycles are physiologic. The cry is at first primarily a reflex. As it becomes tamed, message sending seems more in the control of the infant. Innate structure or nature has a predominating influence in the neonatal capacity for reflexive crying and the capacity to experience both hunger and satiety. The position of the positivists seems supported by the evidence that neonates who are more effectively mothered develop mastery over the cry sooner.

The Babbling Phase

As an infant approaches three months, sounds other than crying become more frequent. The infant begins to babble. Babbling babies make the same sounds the world over, and these sounds are the building blocks of all languages. North American babies babble sounds that come from back in the throat that their parents cannot make but that adults on the Indian subcontinent can. The infant is experimenting with the inborn capacity to make sounds and practicing to master the vocal apparatus. Some evolutionists believe that the inability to make sounds caused some early humanoids to become extinct. Even deaf babies pass through this babbling phase. Congenitally deaf babies, however, stop babbling; babies who can hear themselves and others continue.

One cross-cultural study that compared North American babies to Japanese babies found that North American babies babbled more and the Japanese babies cried more [4]. These differences were correlated with differences in the attention that mothers paid to each of these messages. The North American mothers played with their babies when they were awake and babbling, paid little attention to their babies when they were asleep, and permitted their babies to cry themselves to sleep alone. The Japanese mothers would stay with their babies on a mat as they fell off to sleep, would wake them up during sleep to see if they were all right, and paid little attention to them when they were awake.

During the second half of a baby's first year, the sounds made begin to approximate the phonetic building blocks of the native language. The interplay between the constitutional capacity to make the sounds of all languages (nature) and the reinforcement by the adult caretakers of the phonetic elements of the native language (nurture) seems clear to anyone who observes it. At some point toward the end of the first year and the first few months of the second, the baby will babble a recognizable word, for example *dada*. Parents get quite excited at events like this and begin to notice other discernible words in the stream of sound coming from their infant. The words will be repeated, the baby will be asked to say them on demand, and the words will come with increasing frequency.

The influences of the baby's biologic endowment and environment are joined in language learning. The innate capacity to make sounds clearly distinguishes human babies from other primate young. The influence of the environment is to reduce the variety of sounds. The range is constrained to the phonetic building blocks of particular languages. Language consists of finite sets of sounds that are used in combination to form larger units that native speakers recognize as words. The kinds of sounds that form the building blocks of languages can be described by the combinations of the parts of the vocal apparatus that is used to make them. For

example, the position of the lips is different when *p* and *t* are emitted. The universal sounds that make up all the elements of language the world over can be plotted on a graph using the anatomical combinations to form the rows and columns. When this is done, certain gaps in particular languages appear; that is, there are certain combinations that would be predicted by the anatomical chart that do not occur in that language. For example, such a chart would predict that the word *zing* should occur in conventional English. But it did not until advertisers began selling cola with the phrase, "Zing what a feeling." Languages evolve new words by filling up the gaps in this fashion. Each language uses only some of the sounds that are anatomically possible, arbitrarily constraining speakers to a selected set.

These constraints seem to be applied by the adult caretakers who have the responsibility to introduce children to their native culture, in particular to the native language. The baby's first words are heard by adults more than said by the baby. The words in a sense are formed by the adult out of the stream of the baby's babble. The relation of the child's autonomy to the arbitrary constraints imposed by culture is more evident in the next phase of language learning as the child begins to combine words into sentences.

Sentence Development

Children begin saying single words spontaneously during the second half of their second year (fifteen to twenty months). Sometimes the word is used to refer to a single object, and at other times it refers to a general class. One child's first word was *Nancy*. The child's parents thought that the word referred to a neighbor girl by that name. However, the neighbor was wearing her Girl Scout uniform the day the word *Nancy* first appeared. From then on all girls wearing a girl scout uniform were called *Nancy*. This mistake is interesting in several respects. The semantic relation between the uniform and the word seems to have been learned more than it was taught. Second, normal children naturally prefer to refer to things by name. Third, the names for things are rather arbitrary. There is no reason other than convention to refer to Girl Scouts as Girl Scouts rather than as *Nancys*. The Hatter in Carroll's *Alice in Wonderland* is sensitive to this point when he says that he wants the freedom to have a word mean anything he chooses. Families are often sensitive to the struggle of their two-year-olds with syntactic and semantic problems. Often the adults will adopt one of the two-year-old's neologisms. In one family *hamburger* became *hangerburger* and *elevator* became *alligator*.

The capacity to remember sound sequences and relate those sequences with objects is no doubt innate. Once again the play between

the capacity endowed by nature and the effect of nurture is evident. In learning semantic relationships, nurture, or experience, exerts a constraining influence and limits the possible words a thing may be called. Just as the first universal sounds of babble later become restricted to the phonetic elements of a native language, so do semantic relations become conformed to those in the culture at large.

It is important to remember that the first communications of children are set in a pragmatic context. The child evaluates the communicative effort on a pragmatic basis; success is good and failure is bad. Repeated communicative success is set in the context of physiologic satisfaction from the beginning. Such success enhances learning communication skills. Later in the first and second year, the approval of adults is an additional criterion of communicative success. Repeated failure — that is, an inability to get the adult to provide physiologic satisfaction and approval — retards the acquisition of communication skills. This pragmatic context forms a foundation for all subsequent communicative behavior. Students of clinical medicine needs to keep this in the foreground as they interview patients. The care of a patient with a chronic disease is especially relevant here, for the clinician will not be able to provide the patient with a cure. The patient expecting a cure will therefore tend to devalue communication in the clinical situation. This devaluation spreads to the patient's self-concept as well as to his trust in the clinician.

Sometime between eighteen and twenty-six months, the child begins to combine single words into sentence-like constructions. The word combinations are set in a pragmatic context; the child will combine words that yield an advantage. For example, one child used the word *uponya* to refer to objects that were out of reach. This child would say *its uponya*, *book uponya* to tell an adult to procure the named objects. The pragmatic context in which these combinations begin to occur is familiar to most parents. There is, however, a deep structure that underlies these initial word combinations (surface structures) that has been studied by linguists. They have discovered that children use grammatical rules of their own as they experiment with these word combinations. These rules are not imitations of the adult grammar. One convention describes such grammars as pivot grammars [2]. There are two classes of words, pivot words and words that occur singly. *Uponya* is a final pivot. Single words such as *book* and *its* occur before the pivot. An example of an initial pivot word is *allgone*. One child used *allgone* in combination such as *allgone milk*. Another child expresses the same idea with the initial pivot *byebye* when he says *byebye milk*, and *byebye dada*. The consequence of these discoveries that children the world over create their own grammars is the dispelling of the notion that language is learned solely by imitation. Rather children seem to use an innate capacity for organizing speech according to rules.

Some strict structuralists believe that the rules themselves are innate. The following game that one can play with children during a fleeting period between the ages of twenty-four and thirty-six months of age is both amusing and illustrative. One can ask the child, *Say Momma*, and the child will reply *momma*. *Say ball* will elicit *ball*. Many such words can be played with in similar fashion. However, when one asks the child, *say me*, the reply is *you*; *say you* elicits *me*. This phenomenon illustrates that these pronouns form a special word class, that the child's answers are governed by rules rather than rote imitation, and that the child of this age is preoccupied with pragmatic tasks that override the game. The child is concerned with the issue of separating himself from others, and that pragmatic task, his developing autonomy, defines the second phase of communication development.

In this phase the child sends messages that are constructed according to self-defined rules. The grammar is constructed by the child and in a special sense is the child's property. Although this linguistic phase is transient, it should not be deemphasized. The development of a coherent sense of self is marked by the child's linguistic creativity that sets him apart from the adults around him. If the child and the adults around him are flexible about the rules for sentence structure in the second phase of communication development, communicating becomes an esteemed autonomous act. To this end the adults must respect the child's unique grammar as a creation. Should the grammar be regarded as merely deviant, the child could emerge from this age doubting his communicative skills and be ashamed of his creative capacity.

The linguistic role of the adult with the language-learning child has been recently studied. The result is a description of a baby-talk style of speaking that differs from both adult-adult conversation and the grammars that children create. The sentences in baby-talk style are shorter, words are repeated more often, and there are variations in pitch tone and stress that seem designed to direct the baby's attention to key words. Baby-talk style is an adult's notion of what simplified speech ought to be. An example is the following sequence taped as a mother played with her fifteen-month-old. "Where is your dolly — find the dolly — hold the dolly — oh, there's your dolly — there's your other dolly — oh, you love the dolly." How do parents learn how to simplify speech to their children? One preliminary answer is that there is an absence of nonverbal feedback from the child that characterizes ordinary conversation. The child fails to provide the nonverbal cues, such as head nods, that signal understanding. In the absence of such signals, the adult progressively simplifies the speech.

The average child begins to abandon his idiosyncratic grammar during the third year, and by the age of five or six most of the rules of the adult grammar have been mastered and adopted.

An understanding of language development serves to anchor the clinician in doctor-patient communication. In life-death situations patients all too easily develop a dependent attitude toward the physician, which often includes a diminished sense of obligation to communicate to the doctor with the clarity and accuracy that may ordinarily obtain in the patient's life. Patients may say, "It hurts here," and become mildly offended when asked to qualify and quantify the pain. The physician may inadvertently foster poor communication by misreading the patient's anxious look. The physician may interpret this look to mean that the patient does not understand and will progressively simplify speech, even to a condescending degree. This progressive simplification is mistakenly likened to the feedback given the adult that prompts the adult to adopt a baby-talk style. The patient hopes that the doctor will relieve the pain (and feels pragmatically entitled to a cure) much as a neonate expects a response from a parent as a consequence of the first communications. Indeed the first communication cycle, the matters of trust and mistrust (and a pragmatic attitude toward the relationship), is fundamental to every clinical situation. Individual patients who are asked about their own physicians profess a genuine degree of trust. But when these same patients are asked about all doctors or organized medicine, they may manifest an attitude of mistrust. Most physicians enter the profession with a conscious or unconscious expectation that they will be depended upon by their patients much as the parent is depended upon by the neonate.

LEVELS OF HUMAN COMMUNICATION

Children learn to speak because speech is useful. Adults speak for the same reason. The utility of a speech act is the first level of meaning and that which a speaker wishes to bring about as a consequence of speaking [17,18]. This first level of communication is referred to as the *pragmatic level*, the practical consequences of a message. A woman feeling somewhat lonely asks her lover for a kiss. He responds affectionately, and she feels less alone. The lover has responded to the pragmatic meaning of her communication. An advertising company may measure the pragmatic consequence of a commercial in the volume of sales, as does the manufacturer that pays the advertising company.

The second level is the *semantic level*, which refers to the relations among words and the relation of words to objects. Objects may be either concrete (chairs and tables) or abstract concepts (beauty, good, evil). A friend needed to renew his driver's license. He arrived at the motor vehicle agency shortly before closing time and told a clerk of his dilemma. She responded by pointing to the clock and said there was not enough time.

The next day he arrived at about the same time and asked for form DMV 251. The clerk's response was different. She procured the form, seemingly oblivious of the time. My friend was responded to as "one of us" because of his use of jargon. There is a continuing controversy about the origin of the relation of words to things. Some semanticists hold that onomatopoeia served as the origin for the first words. These language historians believe that words such as the *buzzing of the bees* came first. Others believe that the relation of all words to their referents is arbitrary. There really is no well-developed scientific understanding of the semantic level. A dictionary and a thesaurus describe the meanings and the relations of words according to conventional usage as the compilers understand convention. No one has been able to record enough spontaneous speech that would form a data base for a scientific dictionary or thesaurus of natural language. Philosophers, mathematicians, and linguists have wrestled with the problem of developing a scientific approach to semantics. All of them had to adopt certain assumptions that limited the domain of their study as compared to natural language. Many communication problems derive from semantic misunderstanding. Everyone has heard someone say in the midst of a heated argument, "We're only having a semantic disagreement," implying that there is basic agreement. The semantic level of communication should not be taken so lightly. A physician may tell a patient to take one pill three times a day; the patient may take the three pills at five-minute intervals and become fatally intoxicated.

The third level is the *syntactic level*; this refers to the rules for combining sounds into words and sentences. This level is the one most worked out by linguists and probably the least crucial as a source of misunderstanding in clinical communication. It is highly unlikely that a patient will interpret "take one pill for pain" as meaning that the pill will cause pain. There are, however, certain concepts from the work done at the syntactic level that are relevant to clinical communication. The first is based on the understanding of why this level has attracted so much study. It is possible to isolate a sequence of words from its nonlinguistic context and study just that sequence. For example, it is possible to tape record speech and study the taped sequence over and over. It is not possible to study the pragmatic meaning of a particular sentence said on a particular occasion because the pragmatic meaning cannot be recorded. The words, however, are recorded and may be studied forever. It is important to remember that human communication as it occurs especially in clinical situations is a multilevel phenomenon. Taping an interview in which the clinician shows how to distinguish the pain of a stomach ulcer from cardiac pain may not include the part of the interaction that permitted both parties to become at ease enough to talk about pain. Nevertheless linguists have made brilliant strides in developing scientific approaches to gram-

mar [6]. It is from such scientific grammars that we discover that children do not learn to combine words by rote imitation. There was a time when it was believed that computers could be programmed using such scientific grammars and that machine translation of one language into another would be possible. The translations that were done were semantically unwieldy and therefore too difficult to read. The attempt to extend from a scientific grammar and develop a scientific semantics has thus far eluded us.

Another scientific approach to communication that has a mathematical basis and is therefore compatible with computers is referred to as *information theory* [20]. The approach here is to attempt to measure the information transmitted in particular messages. Messages are considered as if they were a series of yes/no alternatives with each alternative defined as a *unit* or *bit* of information. The word *bit* is a combination of two words, *binary* and *digit*, which in turn refers to the yes/no alternative. Machines can be taught to read series of yes/no alternatives that are presented as holes or no holes in punched cards. Complex information-processing techniques based on number systems with the base 2 have been devised. An increasingly vast amount of information that can be processed this way is currently raising serious ethical issues. Attempts to measure the information in ordinary human communication based on these techniques do not succeed, however.

We earlier considered the two antithetical philosophic approaches of structuralism and logical positivism. Structuralism, which holds that there are innate structures that determine behavior, emphasizes nature, the hereditary component. Positivism emphasizes nurture and holds that the mind is blank at the beginning. Experience accumulates and determines subsequent experience. Techniques that use information theory represent an extreme example of the positivist approach in action. A message is broken down into a series of yes/no alternatives as if nothing like that message had ever been experienced before. A computer, which is the epitome of the blank mind, is programmed to receive only the information that is to be transmitted. The technology of information processing by machine has accounted for some astounding successes. Machines can transmit pictures of distant planets, electrocardiograms, and words with incredible speed and accuracy. The problem with the relevance of information theory for person-to-person communication is negotiating the man-machine interface. Everyone brings more than a blank slate to a conversation, and it is beyond technologic competence to discover just how particular people are programmed. Information theory becomes less relevant in situations where a person's prior experiences are crucial to the task at hand. The same problem that hinders the development of a scientific dictionary and thesaurus has kept mathematical theories of information from becoming the foundation of a unified theory of human com-

munication. The techniques of information theory have led to advances in our knowledge about human communication in controlled experiments. The knowledge so gleaned has not, however, become generally useful.

The efficiency, accuracy, and complexity of data-processing techniques in the biomedical sciences have fostered the hope that doctors and patients could, in principle, match the machines as they communicate in ordinary clinical contexts. The belief in what could be called the machine model of medical practice intrudes on actual clinical practice with unrealistic expectations. Doctors treat patients one at a time, and patients expect their individuality to be highly regarded. This reality of clinical practice resoundingly argues that the pragmatic level of communication should have top priority. The machine model of medicine gives the pragmatic level of communication in individual cases the lowest priority. Policies and guidelines are set according to statistical norms that the particular episodes of health and illness are expected to fit. Patients worry, machines do not; a token overall percentage of fatality becomes 100 percent for a particular patient.

PROBLEMS IN HUMAN COMMUNICATION

Most of the interest in human communication centers around problems, for people tend to take effective communication for granted. If there was a unified theory of human communication, it would be possible to derive from it a classification of communication problems. Most commonly the detection of a communication problem is on a per-case basis, designed for each occasion with little carryover from problem to problem. The study of communication problems is often confused with the search for solutions. The solution of particular problems is rarely scientific and often may not be a solution at all. When the Mafia Godfather makes an offer that cannot be refused, he has in a sense solved a communication problem by threatening the life of a recalcitrant soldier. From one point of view, the job gets done; from another point of view, the means to the end may be open to question. The end justifying the means is an approach that emphasizes the pragmatic level of communication. *In truth there can be no solution to any communication problem that omits the pragmatic meaning, but the converse is not ordinarily judged to be true and proper.* If one asks a salesman for a ten-speed bike, and he does not comply, there is a communication problem. The problem cannot be considered solved until the buyer gets the ten-speed bike, fulfilling the pragmatic meaning, e.g., the need or want. Hitting the salesman over the head and taking the bike is not ordinarily judged to be proper, although the pragmatic requirements are fulfilled. The end-justifying-the-means attitude toward communica-

tion may be considered an intrusion of a very early attitude appropriate to the first communication cycle. The transfer of such attitudes from childhood into adult communication underlies the end-justifying-the-means approach. The neonate has very simple needs, which he advertises to a caretaker by crying. Ordinarily the caretaker acts to fulfill the pragmatic requirements of the neonate, thereby inducing in the child the attitude of trust and entitlement. Getting the ten-speed bike may be equated with getting milk at the pragmatic level, but asking for the ten-speed bike is not properly considered a synonym of the cry. Ordinarily the adult requesting the ten-speed bike would have the money to pay for it, and communication would be taken for granted. The salesman and the buyer would each have overlapping assumptions about the other's proper role. Their ordinary sense of trust and entitlement to these assumptions could, in principle, be traced back to their respective childhoods. Should the buyer hit the salesman on the head and take the bike, the salesman's sense of trust would be greatly jarred.

In clinical situations it is safe to assume that every patient feels entitled to a life without sickness and to a permanent cure in the event of illness. The physician may be in touch with his wishes to prevent all illness and provide permanent cures, but he is quick to realize that these wishes cannot be attained. These differing expectations in the clinical situation at times puts the physician in the role of the salesman who is hit on the head. The physician may be hit instead, with a nuisance malpractice suit by a patient who feels entitled to more than was received. There is no question that the stakes are high for the patient; the pragmatic consequences are life or death, health or illness.

Although all communication problems include a failure to attain pragmatic goals, the block to effective communication may be at another level. Two Job Corps counselors brought two of their trainees to a psychiatric emergency room convinced that the trainees were seriously disturbed. Examination revealed no evidence of serious psychiatric disorder in the trainees. The counselors were asked if they thought that their trainees knew the meanings of rather elementary English words, such as *Valley*. The counselors replied that they were certain, but they were wrong. In reality the trainees did not understand the instructions given them, but they were too embarrassed to admit their ignorance. They would try to do the assigned tasks with only a third of the instructions understood. The tasks did not get done, and the trainees and the counselors were becoming ever more fed up with each other and themselves. This is a serious example of miscarriage of communication because of a semantic problem. Mathematics teachers are painfully aware of communication problems at the semantic level because mathematics includes its own special semantics. One of them taught the ethical distinction between asking "Do you understand

me?" versus "Am I making myself clear enough?" The person assumed to have the higher status who is explaining something to someone of lower status ought to ask, "Am I making myself clear enough?" This form puts the burden on the speaker rather than on the listener and might minimize problems at the semantic level. Problems of semantics often characterize communication across cultural and subcultural groups. Thus semantic problems may be correlated with other communication problems, such as the perception of role, status, and power. This is the domain of sociology and anthropology.

Not many subtle problems in communication are caused by problems at the syntactic level, the level that concerns itself with grammar, the rules for combining sounds into words and sentences. If, however, we include as part of the syntactic level the physiologic capacity of each person to speak and hear, many communication problems arise at this level. Stuttering, deafness, the consequences of a stroke, and altered states of consciousness are serious and most always readily apparent. These problems require special management, and I will not cover them here.

The frame in which communication is set is an important source of communication problems [10]. We come to associate certain forms of behavior as appropriate to a given frame and others as inappropriate. These expectations give rise to the newsworthiness of "man-bites-dog" stories. In recent times artists and playwrights have experimented with breaking the frame in which the action or art is set. The audience may be invited to become active participants in the play or to move a mobile art form. Certain events provide keys to a frame. Consider the frame of a respected guest's visit to a house. The family notes the mother busily cleaning the last specks of dust even as the visitor rings the bell. One mother keyed a visit of the physician differently from that of a clergyman. The clergyman hung up his own coat, whereas the physician's coat was taken from him and his bag was carried by a member of the family to the sickroom. The subtlety of such keyings seems inversely proportional to their effect. Both sons of that mother became physicians. We key certain frames by the style of speech we adopt. An eight-year-old child can tell from his mother's tone of voice whether she is speaking on the phone to a relative. The child is able to gauge the status of the person on the other end. Husbands and wives quickly learn these keyings.

Frames provide both a set of expectations and constraints. The clinical interview is designed to elicit a history of problems that patients suffer. Patients do not ordinarily expect to be asked about their accomplishments, although they are often a significant source of stress, about which a physician should know. The inquiry into the area of a patient's success is often greeted by the patient as a break in frame.

Important problems arise as a result of discrepancies in power and

status between two communicants. In languages with two forms of address (*tu* and *vous* in French), it has been found that the higher-status person keys the frame of solidarity by initiating the use of the familiar form [3]. In clinical situations the physician is perceived by the patient to have a higher status and a frightening amount of power. It is common for a patient to forget to tell the physician the very complaint for which he came. The key to the problem — fear of the physician's power and status — is implicit in the transaction. It would be awkward indeed for a patient to call back the next day to report that he had omitted his chief complaint. People are not trained to expect the extremely awkward moments, to accept them gracefully and acknowledge explicitly such moments in later communication.

NONVERBAL COMMUNICATION

In the mid-1950s the gestures that routinely accompany face-to-face human communication became the subject of systematic study. The principles that underlie the method of elaborating the meaning of a gesture have already been presented. The meaning of a gesture is inferred from its occurrence in particular contexts. Unlike the meaning of words, which is relatively more conscious, the meaning of gesture is most often out of awareness. A nose swiper, for example, is automatically signaling that something suspicious or offensive has been experienced. A lecturer was giving a seminar on dreams to a group of psychiatric residents, and one of the residents who had just learned the meaning of the nose swipe purposefully swiped his nose after each long pause in the presentation. At the end of the seminar when the lecturer was asked how he thought the resident would evaluate the seminar, he said he thought that the resident did not like his presentation. The nature of the resident's experiment was then made public, and the seminar leader's hurt feelings were somewhat soothed by good-natured anger.

The fact that the meaning of gestures is relatively out of awareness heightens the impact on the one hand and on the other makes systematic study exceedingly difficult. We may ask an informant if certain sounds make a difference in certain contexts, but it is more difficult to ask an informant about the meaning of gestures, which are much more out of awareness. The study of gestures is accomplished by filming people in face-to-face communication and reviewing the film or videotape in detail. Notation systems to describe gestures have been developed, but none has gained universal acceptance or made the study of nonverbal communication less arduous.

Gestures are not the only form of nonverbal communication. We communicate by adopting particular styles of dress, furnishing our homes and offices in particular modes, variously posturing our bodies, selecting certain people as friends, driving different kinds of cars, and so forth. All of these communicate something about us as individuals, as members of particular groups, as members of a culture, and as members of a biologic species. They form a context for the more discrete verbal messages that we use to convey specific information. The power of nonverbal communication seems in part derived from the rather obvious fact that we never stop sending certain messages. A brightly colored jacket or dress put on in the morning conveys something to others all day. Another element in the power of nonverbal communication seems to be its link to the very origin of communicative experience with caretakers when the neonate was both dependent and without words. The nonverbal signals that we receive let us know that we are accompanied; the signals we send let another know that we accompany him. In short nonverbal communication reduces loneliness by providing a larger matrix within which more discrete and focused communication is set.

Prior to the systematic study of gestures and other nonverbal communicative signals, it was held that our biologic heritage determined these behaviors. Darwin showed the evolutionary nature of the way we use our faces to communicate grief, rage, joy, and fear. His study is still a classic, for which support is still forthcoming from contemporary research [3]. Although innate biologic structure must account for the capacity and some of the constraints that apply to the range of nonverbal communication, culture and experience or nurture also plays a significant role. A southerner working as a physician in rural Maine would quickly realize that there are acquired differences in nonverbal communicative styles.

It is convenient to consider nonverbal communication in several broad classifications [8]. There are gestures that seem to convey semantic information along with or instead of words. For example, someone may say, "We Americans [points to self] drive bigger cars than you Europeans [points to companion]." The pointing is redundant, because the information that is accentuated by the nonverbal gesture is already encoded in verbal form. These could be called *semantic gestures*. Other gestures could be called *syntactic markers*. They vary with certain nonlexical variations in speech, such as changes in pitch, tone, and stress. Some of the syntactic markers are emitted not by the speaker but by the listener as his head nods and posture shifts with the ebb and flow of speech. Some nonverbal acts communicate emotion. One may alter the vector of the body to give someone a cold shoulder or fold the hands across the chest to signal hostility. Medical students will recognize that this is a frequent posture of both professors and students during teaching rounds on the wards. The non-

verbal acts that communicate emotion include some that signal the presence of anxiety (picking lint from one's clothes is one); still others add a sexual dimension (touching one's hair or lifting the edge of a dress). It seems convenient to call this third class *affective signals*. A fourth class consists of *rhythmic motions* — jiggling a leg up and down or drumming one's fingers. Some workers liken these rhythmic gestures to masturbation on the one hand and the rocking of the retarded on the other. Evidence for the former is that the body parts moved rhythmically include those that stimulate the sexually sensitive areas. It seems possible that these rhythmic acts are related to preconscious attempts to affect the level of attention so that scanning from the particular to the general and back to the particular is enhanced. People who are studying often make these rhythmic gestures.

The four classes of gestures — the semantic, the syntactic, the affective signals, and the rhythmic — are not mutually exclusive; overlap occurs. The gesture that may accompany an angry command would be considered both a syntactic gesture and an affect signal. Nor is this classification anything but a preliminary guide. There is no dictionary of gestures that is at all comparable to a dictionary of words.

Gestures are hard to classify because they are not explicitly encoded. This has given rise to a related notion that gestures provide a form of intelligence about the meaning of a message or the true intent of a person. One author sold many copies of a book that purported to show how one could find a willing sex partner using nonverbal cues [9]. The view that nonverbal behavior provides intelligence about another that the person may not be aware of sending is supported by several studies. However, the notion that intelligence gathering by observing nonverbal behavior is more efficient over the long run than the more traditional straightforward query is certainly unwarranted.

Nonverbal behavior, however, does provide an important channel that is an integral part of communication. Whereas it is exceedingly difficult to elaborate the specific meaning of gestures, the global impact of nonverbal cues does register on every participant in face-to-face communication.

When all the cues available to humans engaged in communication are considered, it is apparent that multiple channels are used. The range of behaviors in each channel is determined by both physiologic capacity and acquired acculturation. Questions arise. Is the information sent in these multiple channels equivalent? Does it all add up to the same message? Are words sometimes louder than actions? Are actions sometimes louder than words? Does one channel accompany the other like the left hand accompanies the right on the piano or the instrument accompanies the singer? The answers to all of the above are both yes and no. For example, it has

been shown that the families of schizophrenics send conflicting messages in separate channels. This, in principle, has been related to the confusion experienced by the schizophrenic. In contrast the information conveyed by the families of normals is not as often contradictory from channel to channel.

The question of which channel predominates must be answered in each situation. A patient who falls silent is obviously sending the more important message nonverbally. The meaning of an anxious grin on the face of one child as a sibling comes to grief has perplexed many parents. Many garrulous people send the more revealing messages nonverbally.

Some messages indicate to a listener in just what sense a communication is to be taken. Bateson has called these messages *metacommunications* [1]. For example, in the midst of a long and arduous psychiatric interview, which in turn was set in the midst of a long and arduous analysis, a patient was complaining about the length of the treatment and the meager progress made. The analyst replied rather matter of factly, "It takes a long time to make a bitch like you into a nice person." Stunned, the patient replied, "That wasn't a cruel remark." The analyst replied, "It wasn't meant to be." His rather risky remark was calmly uttered with no change in the ordinary nonverbal cuing. The analyst was greatly surprised and relieved that the patient understood the remark as he intended it.

The problem of meaning in general is properly the subject of philosophy, but it is apparent that we need a theoretical base to serve as a guide. There is a practical reason for considering meaning in the section dealing with nonverbal communication. The discovery that gestures might have meaning is relatively recent and what is happening as a consequence of this discovery in the world at large happens afresh to each person. The sense of power over an unsuspecting other that comes from the intelligence gathered by observing nonverbal behavior is in part real, and there is potential for abuse. One student physician was presenting at a seminar the results of an interview that included his reflecting back to a patient that the patient's gestures indicated that he was angry. Indeed the patient was angry, but he was also very anxious. The patient was aware of the anxiety but not the anger. The student had succeeded in making the patient more anxious by supplying him more information than he could assimilate. To make the point about the necessity of tact in clinical communication, the instructor calmly told the student that his fly was open. The student was shocked; he blushed and looked down, to discover that his fly was not open. It was then a simple matter to link the jarring effect of the instructor's remark on the student to the effect of the student's remark on the patient, and the need for tact was made more clear. The instructor's gambit did include a controlled use of tactlessness. The teaching task provided the context in which tactlessness could be risked to demonstrate

the need for tact. What does this have to do with meaning? The practical meaning of any message is its utility in the total context in which the message is sent.

One can excerpt a message from its context and determine one kind of meaning but such excerpting does violence to the total meaning of the message. Even if the excerpted message is shown to a thousand observers and all but two agree on the definition of the gesture or the words, they are not elaborating the actual meaning of the gesture or words in the context in which that gesture or sentence was emitted. For example, a woman who hears an off-color joke takes a swipe at her nose. An observer could hypothesize that the woman has been offended. He cannot be sure that she is aware of the meaning of her nose swipe or that she is even aware that she swiped her nose. Furthermore the observer does not know at all whether the woman enjoyed the joke or was displeased. The practical meaning of the joke to the woman in that context could take years to unfold because the context of human communication is multilayered.

How the practical meaning or the utility of messages is elaborated is not a mysterious process. As communication unfolds, the attention of a receiver is manipulated by the sender. The sender is not initially aware of the effect of what is sent. The roles reverse, and the effect of each on the other gradually becomes clarified. Human communication works because most of us have been trained to read the same body movements, although very few of us can accurately describe what we observe. We are unable consciously to excerpt the gesture from context as easily as we are the word messages. The practical meaning of the nonverbal messages is therefore more likely to unfold spontaneously. The lack of a dictionary of gestures does not hinder usage, although some of us are more accustomed to trust only the scientific, logical, or rational meaning of messages that remains after the message is excerpted and studied. The practical meaning of gestures and verbal messages may be sharply contrasted with precise scientific meaning. The meaning of gestures requires a sense of trust that one's own history is of value in understanding what is being communicated in the present and that future experience will add richness and depth.

The understanding that nonverbal communication has an impact naturally leads to a consideration of the need for tact. Being tactful permits communicants to zero in on their respective intentions. The process of permitting meaning to narrow would be hindered by making overbearing assumptions about the meaning of another's message. Such overbearing assumptions are experienced as jarring because they always include some degree of truth, whether the sender was prepared to acknowledge it or not. If tact is important in ordinary human communication, it is even more crucial in clinical communication. The physician's communications can devastate a patient because of the stakes in the clinical situation.

PRAGMATIC MEANING, ETHICAL MEANING, AND EMPATHY

Wittgenstein is considered by many to have begun the tradition that equates the meaning of a message with its everyday usefulness. The primary meaning of a message to another is its pragmatic implications in the life of that person. There are many instances in the daily life of a physician in which the impact of what he says to patients can be devastating. Such dramatic dilemmas are used to stimulate discussion or are the subject of television programs. Should the physician tell a patient that he has a malignant cancer? Should a family be consulted about the decision to remove life-support systems? There are less dramatic but equally worthy problems. The postcoronary adjustment of a patient can be greatly retarded by tactless messages. If the physician was to consider only the primary meaning — the diagnosis — many patients would suffer. Any consideration of meaning in clinical communication should lay the foundation for tact and empathy. There is no better place to begin than to cite the same philosopher who began the tradition of equating meaning with use.

Wittgenstein's work served as a foundation for positivism. In brief, the student who is most comfortable with so-called scientific data, with language that can be backed up by experimental protocols, is following the positivist tradition. The strict positivist is made acutely uncomfortable by experiences requiring comment that cannot be supported by scientific work or rationalized by logic. Poetry is one such area. When Wittgenstein met with several strict positivists who based their work on his, he insisted on reading poetry to them in an attempt to make clear to them the necessity of preserving the ethical frame in which language is used. He failed, and positivism and scientific psychology proceeded to split the scientific and rational from the emotional and irrational, a split that persists to this day. Wittgenstein appears to have considered the division between the rational and irrational unnecessary. He sought to "protect the fantasy from the incursion of reason, and to prevent spontaneous feeling from being stifled by rationalization . . . He was aware . . . that reason is only an instrument for good when it is the reason of a good man. The good man's being good is a function not of his rationality, but of his participation in the life of the fantasy. For the good man ethics is a way of life, not a system of propositions" [14:198]. The ethical frame in human communication is keyed by the life of the fantasy, the subjective and intersubjective meaning of events to the communicants. The meaning of a communication is not only the event that follows a message (e.g., getting the ten-speed bike), it includes the internal evaluation of that event. Although both the external event and the internal response are nonverbal, both may be described in words. It is the linguistic description of the external event and

internal response that gives rise to the illusion of rationality. We are accustomed to believe that what can be described in language is rational. The young physician who has not yet encountered the death of a family member may fantasize what it would be like. He may have occasion to observe the behavior of the recently bereaved during his ward duty and during condolence calls. He may hear a description of bereavement from a patient, and he may read articles that describe the process. But the knowledge he gains by fantasy, by observing others and by reading will be incomplete. The actual experience will show that there are elements that cannot be contained in words. After he has such an unfortunate experience, the physician is better able to understand the experience of another. He knows that the experience is not entirely codable in words and that it includes major irrational components. Such knowledge permits him to be more empathic. Refining the empathic sense is a crux of clinical communication. The empathic sense is contingent on the preservation of the fantasy life, for it is in fantasy that we step into the shoes of another.

Fantasy is crucial to the development of the ethical sense. It is therefore important to understand how a sense of ethics evolves out of the life of the fantasy in what I shall call the third phase of communication development in childhood. This phase is marked by threat to the preservation of the fantasy life. A successful outcome includes a clear demarcation between fantasy and reality, the knowledge that one's fantasies are more similar to those of others than they are different, and that anxiety has a useful function. The successful outcome is a prerequisite for making ethical judgments as situations arise. The unsuccessful outcome is tied to a mechanical sense of ethics, and such persons may be considered ethical automatons. For such people making ethical or value judgments requires a prior knowledge of convention or etiquette. The life of the fantasy for such people is not protected by useful levels of anxiety. Fantasy and reality are not well demarcated, and the creative ethical sense is severely restricted. Such people are most comfortable with what can be described in scientific prose and may attempt to derive scientific systems of ethics.

The third phase of communication development begins at about the age of three and ends sometime in the sixth or seventh year. The three-year-old is grounded enough in language to begin to use it to generate fantasies. Prior to the age of three, the child has an active fantasy life but without language the fantasies are a private business. The rudiments of culture begin to be applied in fantasy to the self, and the child strives to become just like the adults he observes. Some of the surface behaviors that are observed are combined into role models. Boys have the fantasy wish to marry their mother, and girls wish to marry their father. These fantasies are not only communicated in language. Children of this age are wont to climb on the lap of the parent of the opposite sex in a very seductive manner. The parent of the opposite sex finds the three-year-old's fantasies and

related behavior adorable. Not so the parent of the same sex, who may become angry at the intensity with which the other two interact. The parental response to the three-year-old's fantasy and behavior is thus split, and the three form a triangle. This triangle introduces the child to dissonance, for the attraction to the parent of the opposite sex becomes coupled with the anger of the parent of the same sex. This dissonant coupling enters the life of the child's fantasy and precipitates anxiety. The outcome of this phase of communication development hinges on the relation of the fantasy life to anxiety. If the parents participate in the triangular communication in an empathic way, the child will come to feel accepted. This sense of acceptance will include partial validation of both the content of fantasy and the correlated anxiety. If the parents participate too vigorously in the child's seduction and return seduction with seduction, the child may be led to the conclusion that his fantasies are reality. The obvious discrepancies between what the child fantasizes and that which can in actuality be performed cause his anxiety to mount. The anxiety is not about the relation of fantasy to actuality but about the relation of fantasy to performance as an equal of the adult. On the other hand, if the parental response is one of severe reprimand, the child feels rejected and also may reject the life of the fantasy. The anxiety generated by such a response is about the relation of the child to others, not about the relation of the child's fantasy life to actuality. The so-called permissive parents are a blend of both the seductive parents and the reprimanding parents. The child of permissive parents is also like the child of neglecting parents. In both of these situations, the responses of the parents to the child are inconsistent. The child may come to feel both rejected and frightened by a too literal interpretation of the fantasy life.

In contrast the empathic parents validate all of the elements of the triangular communication that the child experiences. Because the parent of the opposite sex finds the child adorable, the child feels accepted. Because the parent of the opposite sex understands the anger of the parent of the same sex, there is a brake on the adults' seductive behavior. The child thus experiences his anxiety, which is linked to the dissonance in the triangular communication (attraction and avoidance), as being validated. The parent of the same sex knows that there is a basis to the child's seductive behavior in the fantasy life, does not feel so personally rejected by the sexual bond because the precocity is recognized, and also knows that the anger serves a useful limiting function. These parents provide a precedent for empathy, and their empathic tolerance permits the child to learn gradually that there is a link between the life of the fantasy and anxiety and between the life of the fantasy and reality. By the seventh year such a child can sally forth in the world of fantasy secure in the knowledge that anxiety will serve as a brake. Anxiety comes to have a useful signaling function that may be put to use in later life, as the golden rule is applied in actual

communication on an ad hoc basis. Very little of what is actually experienced by the child during the third phase of communication development is remembered. We know about it from direct observation of children and from the therapy of children and adults who have suffered unsought outcomes of this phase of development.

The sought-for outcome enables the child to preserve a lively fantasy life. The emergence and refining of the ethical sense out of the life of the fantasy is a function of subsequent experience. The preservation of the fantasy life, anchored as it is in anxiety as a guide, is a necessary condition for the development of the ethical sense. The sufficient condition for linking the fantasy life, the ethical sense, and developing empathic skills is a function of experience after the age of seven.

A major step is the acquisition of a friend during the primary school years. Finding a peer whose fantasies, anxieties, and reality are similar to one's own is instrumental in validating the use of the ethical capacity by actual application [22]. This sort of validation continues thereafter so that by the time one is strong enough to hit a salesman over the head, one has learned not to do it because one would not want to get hit on the head oneself.

The application of the golden rule requires that the life of the fantasy survive the threat to it in the third phase of communication development. For this to occur, anxiety must acquire a useful function, and the respective domains of fantasy and reality must be securely demarcated. Peer communication serves as an experiential laboratory in which the essentials of an ethical sense are developed.

REVOLUTIONARY OR PROTEST COMMUNICATION

The style of revolutionary communication is familiar because of its newsworthiness. Indeed provocation, demonstration, and inflammatory messages that include violence, terrorism, and blackmail are increasingly common. Because the response of people in power to revolutionary communication and vice versa is often framed in ethical language and vice versa, it may be of interest to compare protest communication with ordinary communication. The revolutionary and the counterrevolutionary each accuse the other of unethical behavior, and both are correct. The frame in which such protest communication is set is keyed by a genuine conflict of interest, the belief on the part of both that the other will not change or compromise and that maintaining the status quo or achieving the revolution are ends that justify extraordinary means. These keyings differ from the frame in which ethical communication is set, with one exception. There is hope in the ethical frame that negotiation can lead to attitude change and compromise and that the end does not justify the means.

The ethical frame can support a genuine conflict of interest. Although it seems tactically wise that both the revolutionary and the counterrevolutionary accurately gauge the other, that process is not empathy.

NEGOTIATION, POWER, AND EMPATHY

In the life of the fantasy there can be chickens in every pot, fire-eating dragons in the forest, a thousand starlets in the bedroom, and telegrams awarding the Nobel Prize in medicine. In reality there is competition for goods and services, and desirable outcomes must be earned. We have noted how the discrepancy in power between the child and the parents is linked to the emergence of anxiety as a useful signal during the third phase of communication development. We also noted discrepancies in power constitute a source of miscarriage of communication and that the person with higher status and more power symbolically cedes power by introducing a tone of familiarity to the communicant with less power and status. We are now in a position to understand better how this process occurs. The person with higher status and power has experienced others with more power and status throughout his life and can thus empathize with the lower other and to introduce familiarity at an opportune moment to facilitate task performance. The precedent for knowing that task performance is facilitated by a sense of camaraderie was set in peer communication. Power and status are ceded by leaders to the team (and by the team to the leaders) because the outcome sought after is shared.

Physicians who cede power and status to patients will facilitate patient compliance. The quality of the patient's communication will be enhanced if the physician indicates to the patient that he is an equal, not a subservient adversary hiding the secret of his illness behind a wall of fear.

When the patient occupies the role of consumer of health care and the physician the role of provider of care, they may discover that not all objectives are shared. As an example, consumers seek the best health care at the lowest cost; providers seek to provide the best at any cost. Consumers would like to be treated at home in familiar surroundings; providers believe that the technical aids available argue for treatment in the office and hospital. The advent of consumerism in the business of health care delivery presses for an understanding of negotiation.

The frame in which negotiation occurs is keyed by genuine conflicts of interest. For example, it is in the interest of labor to press for higher wages, and it is in the interest of management to reduce the cost of labor. Labor knows that too high a wage scale will bankrupt the company, and management knows that too low a wage scale will cause labor to work elsewhere. Both also know that there are limits to what can be achieved,

and within those limits, negotiation or bargaining proceeds. If either believes the other to be beyond reason, they each have strategies for forcing the hand of the other. Unions accumulate strike chests, and management may close down production. The strike and the lockout are attempts to wield power over the other to force agreement. The attempt to force a solution by gaining a power advantage rather than by compromise signals a failure of negotiation and is regressive. The adversary nature of negotiation is much reduced by specifying the issues about which there is disagreement as well as agreement. This strategy permits the negotiating parties to attend to the issues, which can then be ordered as to priority, and bargaining can take place. As health care delivery becomes increasingly funded by conglomerates of third-party payers, such as insurance companies and government, negotiating skills will become more important. Negotiation highlights the need to identify the areas of both agreement and disagreement, and we are led to consider the quality of communication skills as more ordinary communication frames.

NATURAL CONVERSATION

Effective negotiators are motivated to specify issues because doing so permits the negotiations to continue and not be disrupted by a regressive attempt to wield power. It is not tactically wise for a negotiator to make public the priority that is attached to the specific areas of disagreement. The negotiator would be supplying information to his adversary, permitting him to gain an advantage and trade low-priority items for high-priority ones. If both negotiators know the priorities attached to the areas of disagreement, the give and take may be enhanced. Indeed the process of negotiation is learning the priorities of the other by communicating. Both negotiators can then gauge how they are doing as they trade a high-priority item for a high-priority item and low-priority items for low-priority items. The power of the bargaining process is enhanced as more information is shared. The power of each negotiator considered separately is reduced as the bargaining proceeds. It matters not whether the negotiators begin with the important or unimportant areas; what matters is that the negotiations continue.

At the outset of natural conversation, as opposed to the negotiation process, the conversationalists must reduce estrangement. They do this by implicitly sharing the pragmatic task in which the conversation is framed, trusting the assumptions each has about language and culture, as well as the conventions for reducing estrangement. There is an anxiety about the reduction of estrangement that has not yet been mentioned. Stranger anxiety is implicit in every new encounter and may be traced back in com-

munication development to the age of ten to fourteen months. At that time the child is afraid of strangers as the variations among the faces of adults emerge into awareness. It is only after such experiences that it is appropriate to use the term *recognize*. Although younger children are able to identify and recognize part of the stimuli represented by caretakers, the gestalt of the adult does not become clear until much later. Stranger anxiety is one of the subphases of the first phase of communication development in which the sense of trust is formed. For a natural conversation to begin, both communicants must surmount estrangement anxiety by having a trusting attitude toward both self and other and the entirety of the communicative repertoire that is brought to the conversation. It is the residue of stranger anxiety that gives each initial type of communicative experience its special quality. Be it the first time we take a history, engage in sexual intimacy, or give a lecture, we never stretch our communicative repertoire without the anxiety of estrangement. As it is with negotiation during the opening phases, the control of a natural conversation is in each of the communicants considered separately. The sense of clarity that each has of the other is greatest during the opening phase. As the conversation continues, both the sense of clarity and the feeling of control will diminish. The course of a natural dyadic conversation recapitulates the phases of communication development. The phases of communication development are not put to the test separately, but all are prerequisites that help to make the final common pathway of conversation possible.

The pragmatic task — the purpose for which the two people are engaged with each other in conversation — spans the entirety of possible human encounters. Three examples are flirtatious conversation presumably framed in seduction, manipulative conversation, framed medically as in soliciting free advice at a cocktail party, and sympathetic conversation framed by a condolence visit. These pragmatic tasks frame the conversation, both anchoring it and limiting its scope. If the conversation becomes too limited in scope, the communicants run the risk of boredom. If, on the other hand, the conversation is too wide ranging, the conversationalists run the risk of anxiety. Their skill is called upon to blend the old and familiar with the new, whether they are speaking or listening.

Two colleagues discussing their ongoing research are anchored in a familiar task, use a jargon designed for their work, and know each other well. Their conversation flows freely; the one talks and the other begins with no hesitation. It is as if the two can read each other's thoughts. At the other end of the spectrum is the halting conversation between a psychiatrist and a new patient. Speech is punctuated with much silence; there is little or no interruption. The therapeutic interview is a specialized form of conversation that seeks out its own task. The psychiatrist and the patient together fashion the task out of the patient's spontaneously unfolding

speech in their attempt to understand the patient's dilemma. The task is unfamiliar to the patient, the psychiatrist is a stranger, and both are a source of anxiety. The psychiatrist is also somewhat anxious; although the situation is familiar, the patient is not.

In natural conversation, participants generally alternate turns of speaking. A turn of speech begins with speech and includes pauses. After certain pauses, the other speaks; such pauses are switching pauses. The length of turns, pauses, switching pauses, and the proportion of a turn spent in actual sound production may be counted and the rhythm of the conversation described in quantitative terms. It has been shown that natural conversation is characterized by a convergence of the participants such that from the beginning to the end of the conversation, what one measures in the speech of the one becomes like the speech of the other. For example, the time both communicants spend pausing becomes similar [13].

The degree to which the communicants converge is also reflected in the nonverbal behavior emitted during the conversation. We have considered above the types of gestures, some that correlate with the syntactic flow and others that correlate with the semantic information. Still other types of movements reveal the emotional state of the communicant. The last includes the vector of the body, which may reflect the degree to which a communicant is involved in the conversation.

The quantitative data that reflect the convergence of rhythm during natural conversation and the changing disposition of the body vectors reflect a shift in the locus of control of natural conversation in its middle phases. Subjectively some communicants may be able to acknowledge a sense of communion with the other; others may be threatened by such feelings of merging and disavow them. All of the phases of communication development are called upon as prerequisites for giving the self over to another as such giving occurs in natural conversation. An unsought-for outcome of any of the phases of communication development may lead to a sense of threat as the control of the conversation shifts from each of the communicants considered separately to both of them considered together. As a function of experienced mistrust, of threat to personal autonomy and initiative, a person may resist acknowledging the shift in control of natural conversation. Conversely to acknowledge that control of a conversation has been ceded to the other, a participant must be relaxed about his capacity for trust, personal autonomy, and initiative. In other words the capacity for ceding control and the more difficult acknowledgment that control is and has been ceded requires that kind of flexible grip on the self that permits one to let go and get into a conversation.

The communicant who has the floor may be observed to be speaking, gesturing, and pausing. Words seem chosen with care, and some of the

pauses occur as part of the planning necessary for such choices [19]. The speaker attempts to gauge the state of the listener. The speaker is also listening to his own speech and noting the impact on the listener. The nonverbal cues emitted by the listener are especially relevant to the speaker's sense of impact.

The communicant who is listening is not only emitting nonverbal gestures; he is paying attention to what is said, as well as what is not said. As the speaker is making decisions — about word choice, for example — the listener is similarly and automatically making choices [12]. For example, a listener may feel that the speaker is condescending if his word choices are too plain or that the speaker is putting on airs if the choices are too fanciful. Sentences become more predictable as they are unfolded by speakers. The listener's task is comparable to one technique of measuring information by having a group of people guess the next word in a sentence. A less predictable word is considered to convey more information [23]. The listener is additionally gauging the specificity of what is being said by the speaker. For example, the level of accuracy that he expects from a conversation with a colleague will be higher when that colleague is talking about work than about a description of a party during which the colleague was drunk. In addition the listener is automatically monitoring the pause lengths, wondering about when to regain the floor and what to say then. The listener may be observing his own nonverbal behaviors, or he may be emitting them automatically. Recall that we considered the absence of the nonverbal cuing on the part of the young child as a probable cause of the simplified speech that we called baby-talk style. The child as a listener leads the adult to simplify speech.

As participants in natural conversation switch roles, they become acutely aware of the degree to which they are affecting each other [11]. Listening skills are evident when speech contains listening-contingent remarks, which let a communicant know that he has been listened to. The participants make judgments about the communicative skills of self and other. They step into each other's shoes and wonder if they would have said that or if they would have described that in the same way. They are also wondering how they sounded, whether they were clear, or whether they distorted their meaning. Most important, they are wondering about the pragmatic task in which the conversation is framed. The participants in flirtatious conversation may be gauging the possibilities of having an affair; the physician who is being asked free medical advice may be wondering about the propriety of sending a bill.

The monitoring of the flow of conversation by the communicants and the extrapolation to predict the performance of the pragmatic task is rarely made explicit. The wonderings take place mentally by the communicants. The sense of what will happen and what ought to happen is closely related

to the ethical sense that has already been considered. These private wonderings about the impact of self on another in natural conversation include certain conscious and unconscious fixed distortions that are part of the domain of the psychopathology of communication.

Having achieved the pragmatic task, the communicants may take leave of each other. The quality of the encounter will be reflected in the process of disengagement. The rhythm of the conversation will reflect divergence; the quantitative measures that describe the patterns of speech and silence will become different. The bodies will tend to vector away, and the sense of control will shift away from sharing to separating. Implicit in the leave-taking may be feelings that permit both to pick up the conversation where it left off without having to surmount estrangement.

Familiarity with naturally occurring dyadic conversation is basic to the understanding of all human communication. The content may vary with differences in the pragmatic task, the appropriate jargon, and prior experiential base for empathy that leads to the ethical sense of what ought to be, but the basic form is invariant. Communication among more than two people adds complexity, but the same phases in communication development are put to the test.

CONCLUSION

Whether one is inclined to focus on the biologic givens that underlie the human capacity for communication or the formative experience gained during the most prolonged period of dependency in the animal kingdom, one is led to the conclusion that both are crucial. The newborn is catapulted out of a physiologic union with the mother in the womb but is still in a position of extreme physiologic and psychosocial dependence. Rather quickly channels of communication are established that permit the immature human to become more efficient in signaling need states. The reflex signals give way to more complex symbolic forms that permit the human to fashion a sense of self in relation to others. The phases of the development of human communication are not without anxiety. The large and complex brain with which we are equipped puts us as much in the grip of our social environment as it gives us the ingenuity for mastery. We are therefore greatly aware of the possibilities of anticipated success and failure. Uncertainty about the pragmatic utility of using our wits is naturally reflected in anxiety, which is transformed in each phase of communication development into a useful signal. When anxiety is not so transformed, it mounts to an exceedingly disruptive extent, signaling a crisis. Crises provide both the danger of repeating a fault in communication development and an opportunity for repair. Whenever the

anxious person and those around him focus on anxiety without reference to the communicative context, damage is done to the sense of self in relation to others. The view of humans as essentially alone gains support from such damaging experiences because the utility of anxiety as an interpersonal signal is denied. The avoidance of anxiety as a signal and of others as stimuli that produce anxiety is the proper domain of the sociopathology and psychopathology of communication. The human management of anxiety requires that attention be paid both to the larger social context as well as the state of the anxious person considered individually.

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8

Interpersonal Aspects of Behavior

Bohumil F. Beran, M.D.

The process of exchange of energy, in its various forms, between the human organism and its environment has many special features. Writers from Aristotle to Wilfred Bion have described special qualities that people have to respond to others of their kind. Interpersonal aspects of behavior comprise the conditions, the influences, and the forces, as well as the resulting effects, on the behavior of human organisms caused by others. Aristotle pointed out that a human being is a political animal and, indeed, it is important to see all human behavior as interpersonal.

The human infant's development does not occur in an interpersonal vacuum, and a person is most profoundly affected by the nature and character of relationships in his life. Interpersonal behavior is not a simple arithmetic phenomenon which can be shown in a laboratory but is essentially an ability and a way a person forms relationships. The biological, psychological, social, and cultural aspects of the organism as a whole must be considered when attempting to understand any form of behavior.

Although we may, for the purpose of examination, focus on a single aspect of a person's function and dysfunction, it is essential to keep in mind that a person exists as a biopsychosocial whole in a matrix of the family, work, and social settings. The person's development during

various stages of the life cycle presents another dimension which is a result of the state of balance in the exchange with his environment.

The interpersonal aspects of behavior are noted on many levels of social functioning. In the context of a dyadic relationship, the physician has a unique and powerful tool for understanding his patients in a physician-patient relationship. Further, the individual achieves a particular and individualized mode of adaptation within his family. The social environment of work team, organization, and social systems is another arena in which interpersonal aspects of behavior play a role. Finally, society at large, with the constrictions and supportive elements of a particular culture, presents specific demands on a person's interpersonal adjustment.

The interpersonal aspects of behavior must be attended to in all psychotherapies. There is a wealth of data and concepts that deal with interpersonal aspects of behavior in the psychiatric literature concerning psychotherapy in general and family therapy, group therapy, psychodrama, milieu therapy, and community psychiatry in particular. Some examples with which psychiatrists are familiar include work of Don D. Jackson and Gregory Bateson with families and the concept of the double bind. Bateson et al. [8] give an example from Zen practice: the Zen Master orders his student to answer a question; the only two possible answers are yes and no. He holds a stick over the student and further stipulates that he will hit the student if he answers yes and he will also hit him if he answers no. The Master then proceeds with an order: Answer the question! The investigations of M. T. Singer and L. C. Wynne [86-88, 104-106] and of Theodore Lidz and Stephen Fleck [26, 45-47] in schizophrenogenic families brought into focus family tasks and their deficits and enriched the understanding of the family as a universal primary social unit for development. Gerald Caplan's [20] concept of theme interference is an example of the study of interpersonal aspects of behavior in the process of consultation as applied to community psychiatry: A teacher may experience difficulty when dealing with a particular student when the student's problems evoke unresolved conflicts in the teacher.

HISTORICAL DEVELOPMENT

Concern over the nature and experience of the interpersonal aspects of human reality is probably as old as mankind. Classical authors have provided us with written formulations of some of their views on the interpersonal nature of man. Plato's ideas provide a convenient starting point for reviewing some of the ancient philosophical concepts which are concerned with the nature of human polity.

In his *Republic* as well as his *Dialogues*, Plato emphasized the function of an individual in a human group. The ideal state has its limitations

mainly as a result of external reality. Plato did not concern himself with other than rational behavior of citizens. Temperance, wisdom, courage, justice, and holiness are principal virtues from which stems the power to govern mankind. Despite his neglect of what may be termed *dynamic psychological forces*, Plato described a particular sense of togetherness, a common feeling in his best-ordered state, "which most nearly approaches to the condition of the individual — as in the body, when but a finger of one of us is hurt, the whole frame, drawn towards the soul as a centre and forming one kingdom under the ruling power therein, feels the hurt and sympathizes all together with the part affected, and we say that the man has a pain in his finger; and the same expression is used about any other part of the body, which has a sensation of pain at suffering or of pleasure at the alleviation of suffering" [67:186–187].

Although people are capable of acts of leadership, an ultimate authority must be a "higher and divine race, . . . no human nature invested with supreme power is able to order human affairs and not overflow with insolence and wrong" [67:485]. The ideal state, as given by God, "a blessed rule and life, of which the best-ordered of existing states is a copy" [67:484] was not thought to be borne out by experience. Aristotle, and later others, criticized the Platonic, all-rational ideal. According to Aristotle, man is a political animal, group is a proper environment for a human being, and human polity is a necessary ingredient for realization of a full life.

A relatively new development and a definite diversion from the Platonic view appears in the writings of St. Augustine, who espoused the psychological principle of the all-importance of the will and sovereignty of love. In the spiritual sphere, which, like psychology, concerns itself with broadly conceived subjective experiences, the power of love is as deterministic as the force of gravity is in the physical sphere. In his *City of God*, St. Augustine, with characteristic severity of thought, outlines a human group in which people are in harmony through their relationship with God. Thus, St. Augustine not only allows for emotions but also openly advocates irrationality as an essential component of state. This idea may, at first, appear strange, since we all harbor vestiges of Platonic thought, which disregards the irrational in man. It may be useful to be reminded of feelings which occur in a more familiar context, for instance, at the beginning of a new class, a summer camp, or a therapy group. In these or similar instances a participant experiences powerful emotions which are not always related to the rational task at hand but rather to the process of getting together as a group. Under such circumstances a person may ask himself: Will I be accepted? What will be my role? Will I be able to meet the expectations of the group?

According to W. Bion [14], an essential part of group therapy is the need to vitalize the group, to evoke the feelings of groupishness, despite

the fact that the forces which vitalize and, so to speak, charge the group, are directly in conflict with the rational goals of group therapy. The emergence of the irrational and undesirable psychological forces which, in fact, interfere with the group task, that is, with the rational activity of treatment, constitute an essential and necessary part of the process of the formation of the group.

Nietzsche also postulates emotion as a necessary concomitant of a human group; the nation-group is bound together by energy, which is released through aggression.

The philosophical arguments about the political nature of man, however, fail to provide us with experimental findings about human behavior. As psychology and the social sciences, in general, emancipated themselves from philosophy, a trend was started which still continues: the scientific study of data concerning group behavior with concomitant use of hypotheses, attempts at prediction, and building of theory.

THEORIES OF INTERPERSONAL BEHAVIOR

Medicine, as an applied science, makes use of concepts and theories that are being developed by basic sciences. The basic behavioral sciences, anthropology, and sociology are making contributions toward understanding interpersonal behavior, which often appear foreign to psychiatrists and with which psychiatrists are often only marginally familiar. In 1968 Morris Parloff wrote: "In recent years, serious efforts have been made to bridge the gap between the research findings provided by the students of small groups and by their application by group psychotherapists . . . to be candid, the liaison and rapprochement achieved has been casual, desultory, and unimpressive, nor does this situation give promise to changing soon" [65:497].

Theoretical contributions from other than medical disciplines may be incorporated into psychiatric practice only after careful interpretation in the context of clinical practice. Psychiatry has been, despite the difficulties that are inherent in the bridging of different scientific disciplines, significantly enriched by contributions made by nonclinicians. An example of such germinative crossbreeding of ideas is the work of Konrad Lorenz and other investigators in the field of ethology [49,109].

A number of psychiatrists have contributed to formulation of theories of interpersonal behavior. This situation is not dissimilar from other areas of study of human behavior; for example, the theories of personality are derived from psychology and philosophy, using, for instance, quantitative experiments, or from clinical psychiatry, as is the case of psychoanalysis. Sigmund Freud, the father of classical psychoanalysis, believed that psychoanalysis' main contribution would be in the area of the

theory of normal behavior. Certainly his prediction has been borne out inasmuch as careful examination of clinical data and study of psychopathology offer a rich and fertile ground for construction of theoretical models. Different theoretical formulations exist side by side; they may sometimes overlap while vast areas of the study of human behavior remain unmapped.

Theories postulated by psychiatrists themselves often have a larger impact on the practice of psychiatry than those which originated, for instance, among sociologists or anthropologists. These formulations are often easier to communicate to other psychiatrists or physicians because they were originated and developed on the basis of shared experiences and clinical observations, and they are also more readily adopted by practicing clinicians.

More recently the attention of psychiatrists has been focused on behavior in groups. Some of the theories concerning group behavior originated in the work of psychiatrists and group therapists, for instance, W. Bion's (Tavistock) theory of small group functions or formulations made by some other group therapists. Others were developed mostly outside the realm of clinical practice, for example, the work of Kurt Lewin and subsequent work of students of his theories. Such concepts and practices have found limited use in psychiatric practice despite their apparent usefulness and efficacy in other areas, as, for instance, in the study of organizational behavior.

Gustave Le Bon

The French sociologist Gustave Le Bon, in his *Psychologie des Foules* (1895), translated as *The Crowd: A Study of the Popular Mind* [41], showed that participation in group life brings about a primitive mental state, which is manifested by behavior that may be termed regressive. The person, who otherwise may be rational, is given wholly to emotions, highly suggestible, and prone to violence.

The person's otherwise cultured qualities are replaced by those of a barbarian. Moral standards and inhibitions are thrown off and are substituted by self-serving, unpredictable, and childlike behavior.

As the group's member loses his individuality, he behaves under the dictum, according to Le Bon, of the homogeneous, primitive, unconscious life, which is common to all humanity and is a result of past ancestral heritage. Not only will a person lose his individualizing characteristics in a crowd, but he will show some new features. He will feel and act powerful and fearless and will tend to relegate his individual responsibilities to the ideology of the group prevalent at the time. The work of Le Bon is noted here because, together with William McDougall's book, *The Group Mind*, it

formed a basis for Sigmund Freud's investigations into the psychology of groups.

William McDougall

The American psychologist William McDougall, who made an important contribution to the theory of personality, wrote on the subject of groups in *The Group Mind* [53]. McDougall's group characteristics are similar to those of Le Bon: a group "is excessively emotional, impulsive, violent, fickle, inconsistent, irresolute and extreme in action, displaying only the coarser emotions and the less refined sentiments; extremely suggestible, careless in deliberation, hasty in judgment, incapable of any but the simpler and imperfect forms of reasoning; easily swayed and led, lacking in self-consciousness, devoid of self-respect and of sense of responsibility, and apt to be carried away by the consciousness of its own force, so that it tends to produce all the manifestations we have learned to expect of any irresponsible and absolute power. Hence, its behavior is like that of an unruly child or an untutored passionate savage in a strange situation, rather than like that of its average member; and in the worst cases it is like that of a wild beast, rather than like that of human beings" [53:45].

The group can be "organized" with a goal of enabling the members to act rationally by special psychological means, some of which include providing the group with a degree of continuity of existence, outlining the nature and composition of the group, interacting with other groups, possessing traditions and customs, and having a definite structure.

Sigmund Freud

Sigmund Freud made a major contribution to the psychology of groups. His *Group Psychology and the Analysis of the Ego* [29] not only attempted an initial formulation of some of his concepts which concern the structure of the personality but also undertook a very interesting inquiry into the nature of human groups, justice, cultural factors in development, and other social phenomena.

As a starting point, Freud provides a critique of Le Bon's description of the group mind. Freud did not deny the brilliance of Le Bon's discoveries; however, he added a whole new realm of dynamic forces to Le Bon's original concept of the group unconscious. Whereas Le Bon viewed the group unconscious wholly as a result of the undifferentiated archaic human past, Freud postulated the *repressed* as part of the group unconscious and thus added a new dimension and meaning to the unconscious life of the group.

Besides his critique of Le Bon's and McDougall's theories, Freud con-

centrated on developing the notion of the group as based on the prototype of the family. Most of Freud's ideas about behavior in groups are contained in *Group Psychology and the Analysis of the Ego* [29], which was published in 1921. At that time Freud was attempting to systematize his observations and more-or-less isolated concepts into a comprehensive system reflecting the structure and functions of a normal mind. Freud's book on group psychology contains outlines and suggestions of concepts which Freud later delineated more fully, thus providing insight into the gradual formation of the theory of psychoanalysis.

In *Group Psychology and the Analysis of the Ego*, an important function in the formation of groups and the members' relationship with the leader is ascribed to the ego ideal, which is equivalent to "conscience," has less harsh and punitive qualities, and is less clearly defined than the later concept of the superego. The superego plays an important role in the psychopathology of psychiatric conditions such as obsessive-compulsive neurosis and depression. The superego, though, maintains the qualities of an absolute and punitive authority-leader and may also be considered a descendant of the ego ideal in the context of Freud's theory of groups. W. Bion [14] expressed his disappointment with the fact that Freud did not return, after *Group Psychology and the Analysis of the Ego*, to the study of group behavior.

Freud uses the concept, first outlined by Charles Darwin, of the primal horde of brothers who are ruled by a powerful and tyrannical father; their revolt resulted in killing the leader, who is reestablished in the form of a totem and a deity. The paternal horde is transformed into a community of brothers.

The importance of the leader is preeminent in Freud's understanding of groups. The qualities of the individual members' relationships with the leader, as well as of the relationships among the members, are determined by the process of the leader becoming the individual member's ego ideal. The member abandons his critical faculties and loses his self-determination.

Freud equates this state of mind to hypnosis or to being in love.* By

*Totemic exogamy, a "prohibition of any sexual relation with those women of the family who had been tenderly loved since childhood" [29:141], also developed as a reaction to parricide. When in love, the person idealizes the loved one, the couple seeks solitude, thus demonstrating against the herd instinct, the group feeling. "It is only when the affectionate, that is, personal, factor of a love relation gives place entirely to the sensual one, that it is possible for two people to have sexual intercourse in the presence of others or for there to be simultaneous sexual acts in a group, as occurs at an orgy. But at that point, a regression has taken place to an early stage in sexual relations, at which being in love as yet played no part, and all sexual objects were judged to be of equal value, somewhat in the sense of Bernard Shaw's malicious aphorism to the effect that being in love means greatly exaggerating the difference between one woman and another" [29:140].

virtue of their common bond with the leader, the members can identify with each other. The group, though, is formed at a price of regression in the members and of giving up their "conscience" and morality. Some of the aspects of regressive behavior are "the dwindling of the conscious individual personality, the focusing of thoughts and feelings into a common direction, the predominance of the affective side of the mind and of unconscious psychical life, the tendency to the immediate carrying out of intentions as they emerge" [29:122].

The member's attachment to the leader is based on libidinal ties. The cohesive force in the group is the "aim inhibited" or desexualized libido. The leader stands aloof and is characterized by being of "masterly nature," "self-confident," and "independent." He becomes the Ego Ideal because he has qualities which the members cannot attain. His narcissistic characteristics connote the fact that he has no emotional attachments to anybody but himself.

Freud appreciated the importance of the influences of societal inhibitions and values on the psychosexual development of the individual. "Just as primitive man survives potentially in every individual, so the primal horde may arise once more out of any random collection, insofar as men are habitually under the sway of group formation, we recognize in it the survival of the primal horde. We must conclude that the psychology of groups is the oldest human psychology; what we have isolated as individual psychology, by neglecting all traces of the group, has once since come into prominence out of the old group psychology, by a gradual process which may still, perhaps, be described as incomplete" [29:123].

Franz Alexander points out the fallacy in assuming that Freud did not pay sufficient attention to the cultural and social factors in his theory of personality [1]. The formulations contained in *Group Psychology and the Analysis of the Ego* sufficiently disprove this point of view.

Harry Stack Sullivan

Harry Stack Sullivan, "America's most original modern psychiatrist" [71] provided formulations of interpersonal psychiatry which antedated many other similar attempts to meaningfully introduce social and cultural levels of understanding into work with psychiatric patients. Sullivan's early papers of the 1920s and early 1930s show him to be the first major theorist of the cultural school of psychoanalytic psychiatry [61,95,96]. Sullivan is often included in the group of neo-Freudian psychoanalysts who focused their attention on man's functioning in his social and cultural environments [2]. Among others usually listed are Karen Horney, Erich Fromm, and Clara Thompson. According to Roy Grinker [32], the conceptual sys-

tem of psychoanalysis was subjected to splintering off of parts of the system as a result of a strong focus on purely psychological phenomena. The biological part became the independent Kleinian school, with emphasis on early powerful biological expression of aggression; the social part was adopted as a whole by the neo-Freudians and others. Sullivan focused on the behavioral rather than instinctual aspects of emotional states. He saw the human being, from infancy, as part of a matrix of interpersonal relationships.

Somewhat in keeping with another American psychiatrist, Adolf Meyer, Sullivanian concepts have long since become part of psychiatric thought and their origin is no longer recognized. Sullivan has provided a sensitive and relevant approach to interviewing; his contributions to work with patients, of which many had a germinative influence on psychiatric practice, are numerous. Sullivan, for instance, coined the terms *participant-observer*, which delineates the interaction of a psychiatrist with a patient [94], and *selective inattention* [92]. His pragmatic attitude produced a dictum that much of psychotherapy is plain hard work. As Frederick C. Redlich [71] has pointed out, no summary will do justice to Sullivan's work; his writings have to be read in the original. According to Sullivan, "Psychiatry . . . is the study of processes that involve or go on between people. The field of psychiatry is the field of interpersonal relations, under any and all circumstances in which these relations exist. It was seen that a *personality* can never be isolated from the complex of interpersonal relations in which the person lives and has his being" [92:987]. The definition of psychiatry as a science of human relations has been found to be too broad. According to Redlich, Sullivan's definition is too encompassing; it applies overall to the sciences of human behavior whereas psychiatry is an applied science that deals with abnormal human behavior [71].

Sullivan's contributions are many, although they are difficult to fit into the mosaic of theory and basic sciences which currently serve as an underpinning of psychiatric practice. I note here only selected aspects of Sullivan's understanding of the individual, society, and culture.

Anxiety and tension in mother may be evoked by the infant and subsequently empathically relayed back to the child. Mutually regulating or disruptive behavior occurs as a result of structuring of insecurity and anxiety. The "mothering one" interacts with the child on the basis of her past and current experiences as well as social expectations. The infant perceives or prehends the mothering one both as a "good mother" who symbolizes satisfaction and as a "bad mother" who, under some circumstances, fails to satisfy him and also induces anxiety and associated feelings. Only much later, in late infancy and during childhood, personifications of the good and bad mother are fused into a more realistic, single picture of the mother. A similar polarization may be reexperienced

during adult life in the course of a relationship with a significant other and may play a role in psychopathology.

Although Sullivan emphasized the importance of the mother-infant relationship, he saw early childhood development as a result of many different variables. Sullivan further developed concepts of "good me," "bad me," and "not me" ("not of me"), which describe opposing views of self in the process of personification of the self, a gradual differentiation of experiences concerning the infant's body and environment.

The earliest communication of interpersonal relationships is termed *prototaxic*; syntactic mode of communication is of a higher order and is characterized by gestures and linguistic symbols conveying messages. Distorted, unintelligible, and misleading messages are called *parataxic*.

Sullivan also made formulations concerning later stages of development — childhood, adolescence, and adult life. Sullivan's contribution to understanding the stage of psychosexual development which is termed *the stage of latency* by classical psychoanalysis is of special interest. According to Sullivan, at about the age of ten interest in participation with the peer group as a whole is replaced by development of a special relationship with the best friend or "chum."

Feelings of attachment are very strong — the child has altruistic concerns about his friend; the chum's welfare is almost as important as his own. When referring to his best friend, the child uses a special intonation. This intense and important emotional experience represents the child's first major realistic attachment outside his family. At this age, sharing feelings and experiences with another, as well as empathy, are possible only with a person of the same sex. Learning occurs about how the chum handles and feels about his personal uniqueness and how he deals with problems related to a new dimension of social experience, the world outside of home. Theodore Lidz, Stuart M. Finch, Albert C. Cain, and others noted the importance of Sullivan's designation of the developmental stage as the juvenile period [93].

In Sullivan's terms, *parataxic distortions* describe a person's tendency to distort his perceptions of others. Parataxic distortion applies to all interpersonal relationships; in the context of psychotherapy, it coincides with transference. Irvin D. Yalom notes that many "[group] therapists today use the term 'transference' to refer to all interpersonal distortions rather than confining its use to the patient-therapist relationship" [106:21].

Sullivan also applied his view of the treatment situation as a total, interpersonal field to the psychiatric ward. "The field of psychiatry is neither the mentally sick individual, nor the successful and unsuccessful processes that may be observed in groups and that can be studied in detached objectivity. The field of psychiatry is the field of interpersonal relations, under any and all circumstances in which those relations exist" [92:987].

Sullivan pioneered working with psychiatric aids in the hospital ward and recognized and appreciated their skills. Stanton and Schwartz noted: "The systematic study of *personality functioning as a part of institutional functioning* in the mental hospital began perhaps with the work of Harry Stack Sullivan at Sheppard and Enoch Pratt Hospital in Towson, Maryland, 1929-1931 . . . The results were not obtained by special tricks, but rather by the functional organization as a whole" [91:13]. Their study of the hospital milieu was in part based on Sullivan's point of view: "We have assumed . . . that all human beings are continually engaged in social activity, that every recognized 'mental phenomenon' is, in fact, treatable as a part of this continuous interaction with other people . . . Impulses do not function without relation to the current social situation but can be aroused, satisfied, or altered by one's perception and interpretation of it. All aspects of personality are a part of current interpersonal relations but in ways which are by no means clear" [91:27].

In regard to group therapy, Yalom sees Sullivan's "statement of the overall process and goals of therapy . . . clearly consistent with those of interactional group therapy" [106:22]. The application of Sullivan's concepts in the context of group therapy, though, cannot occur without a change in the direction of the therapeutic work: "the emphasis on the patient's understanding of the past, of the genetic development of those maladaptive interpersonal stances, may be less crucial in group therapy than in the individual setting where Sullivan worked" [106:22]. The concept of consensual validation was elaborated by Sullivan [93] to refer to the dyadic relationship between the psychiatrist and patient; in a group, this term is used to connote a continuous comparison of the thoughts and feelings of group members toward one another as a means of modifying and correcting interpersonal distortions.

Sullivan's focus on the behavioral rather than instinctual meaning of subjective experience and his emphasis on communication and feedback in the context of interpersonal behavior make possible a detailed study of subtle but objectifiable transactions in families and groups. Thus, Sullivan is a direct intellectual ancestor of L. Wynne, M. Thaler Singer, M. Bowen, Salvador Minuchin, Jay Haley, and many other family therapists and of a number of group therapists.

TAVISTOCK THEORY OF GROUP FUNCTIONS

A British psychiatrist and psychoanalyst, Wilfred Bion, attempted an intensive examination of small group functions by applying a psychoanalytic method. He focused his attention particularly on the unconscious

forces which interfered with (or facilitated) the task of treatment. According to Bion, attempts to conduct individual therapy in a group without paying attention to the group functions which have an overwhelming influence on the group's ability to work on its task would be futile and, at best, an expression of the psychiatrist's irrationality, part of which would necessarily be a massive denial vis-à-vis his own emotional experience of the group [14].

Bion's observations eventually led to formulation of a theory of small group functions in which group members maintain a rational awareness of their task. They also experience powerful, unconscious mental forces which are activated when the group is formed. The propensity toward the irrational, unconscious mental life in a group is universally present, in different degrees, in all individuals.

The unconscious forces that manifest themselves when the group comes into being and that interfere with the task are characterized as displays "basic assumptions" of dependency, fight-flight, and pairing in order to avoid work.

Bion's ideas have their predecessors in the psychoanalysis of individuals, particularly the work of Melanie Klein. Bion makes full use of the concept of psychic determinism as outlined by S. Freud and C. G. Jung; he further focuses on the powerful primitive emotions which are operative within the "basic assumption group" members.

Bion's concepts build on Freud's view that the family group provides the basic pattern for all groups. Nevertheless, Bion acknowledges a gap between his and Freud's conception. According to Bion, his theory does not contradict but supplements Freud's view of the group as a recapitulation of primary family experience. The basic assumption group operates on a more primitive level than the libidinal ties which were postulated by Freud. "The more disturbed the group, the more easily discernible are these primitive phantasies and mechanisms; the more stable the group, the more it corresponds with Freud's description of the group as a repetition of family group patterns and neurotic mechanisms" [14:165].

Bion's work with groups took place during and shortly after World War II. At that time, he was concerned with selection of soldiers for leadership roles and with treatment of psychiatric disorders in war casualty soldiers. Most of this work took place at the Tavistock Clinic in London, England. Bion did not use group therapy as a simple measure of expedience which would allow for treatment of larger numbers of patients by one psychiatrist; rather, he attempted to treat the community of the psychiatric hospital as a whole. This approach was based on the assumption that the forces which commonly weld the community into a cohesive group can be utilized for the task of treatment. Similar principles were used in milieu therapy by Maxwell Jones [39], A. H. Stanton and M. S.

Schwartz [91], J. Cumming and E. Cumming [21], and others. The theory of small group functions has been further expanded, namely, in the direction of the study of organizations and of small group behavior in groups convened for training psychiatrists, administrators, and others in leadership, authority relations, and group dynamics. In England the Tavistock Institute in London continues to be the center of these activities.

There is no unified designation of Bion's theory of small group functions in literature; the term *Tavistock Theory* has been used; its disadvantage is that it connotes only the work of British authors. It is, however, sufficiently distinct to differentiate the work of Bion and of the authors who use his concepts from other theories of group behavior. The term *group relations* and others have also been used. For example, the word *Tavistock* does not appear in some of the pamphlets outlining group relations conferences offered by the A. K. Rice Institute in Washington, D.C. [33,34]. There does not appear to be a single term in use at this time under which all of the literature can be subsumed.

Training in group relations has become increasingly popular with psychiatrists. In the United States, initially only a few university departments of psychiatry cultivated a relationship with the Tavistock Institute. (Morris Parloff suggested, in 1968, that the Tavistock concepts have had relatively little influence on the practice of group psychotherapy in the United States because of Bion's reliance on Kleinian rather than Freudian concepts. Also, according to Parloff, "the sociological notion that groups are organized around a shared task — rather than by libidinal ties to a central person as postulated by Freud and amplified by Redl (1942) [70] — is not accepted as tolerantly in the United States as it is in England" [65:513]. Nevertheless, James C. Miller emphasizes the fact that the Tavistock method of study of group relations intrinsically implies no claim to exclusive use of any particular theoretical model [58]).

A. K. Rice was influenced by Bion, who directed a number of group relations conferences and wrote on the training and social systems applications of the theory of group functions. The A. K. Rice Institute was founded in Washington, D.C., in 1970. Today there are a number of regional institutes that are devoted to study and training in group relations.

According to Bion [14] the group function is an aggregate of functions of individuals who form the group. Every human group has a rational element within itself and is therefore capable of rational behavior directed toward accomplishing the group task. The group which pays attention to the task employs scientific means in a more-or-less sophisticated manner. Such a group is termed a *work group*. Bion compared the work group to the functions of the ego and its concern with reality as described by Freud in reference to the individual. The work group, though,

does not occur in a pure culture; the group's work on the task is being interfered with by the emergence of anomalous mental activities. A comparison can be made with the individual whose ego functions are interfered with by instinctual drives and other forces. The irrational forces in the group may hinder and occasionally further the rational aims of the group. As a result of a careful study of the group behavior, Bion was able to glean and discern some of the underlying factors that interfere with the group task. These anomalous mental activities were subsumed under the term *basic assumption group*.

What are the basic assumptions? According to Bion, the group's irrational behavior can usually be traced to a single source of its actions, and a source is one of the basic assumptions.

The basic assumptions are tacit understandings among the group members which interfere with the group's working on the task. Basic assumptions are a universal phenomenon in all human groups. They serve to develop the cohesion or "groupishness" of the groups and they underlie all of the group's behavior. Nevertheless, there is a price to be paid; the basic assumptions are not consistent with work on the group's task. The group acts on an assumption *as if* the assumption were true; the group believes that it cannot progress with its work on the task and proceeds with the activity based on the assumption.

Bion delineated (he used the word *adumbrated*) three such qualities of the primitive "groupy" feelings. These are the basic assumption of dependency (baD), the basic assumption of pairing (baP), and the basic assumption of fight-flight (baF).

Bion was able to derive, or, in the words of Margaret Rioch [75], "to tease out" the basic assumptions from the resultant behavior of groups. Thus, the actions of the baD group cannot be a result of a rational approach to its task but, to a significant degree, a result of the baD. Similarly, the baP is a source of the actions of the baP group and the baF powerfully influences the actions of the baF group. The basic assumptions are basic to the behavior of the group because they represent the main emotional source of the group's behavior.

The basic assumptions operate outside of the group members' awareness; all the basic assumptions are present at all times and they affect the group behavior in various degrees; it is not clear what regulates the emergence of basic assumptions at different times. Bion postulates a protomental apparatus from which the basic assumptions emerge and which also affects and is affected, in mutual fashion, by the work group. "There is no direct conflict between basic assumptions, but only changes from one state to another, which are either smooth transitions or brought about through intervention of the sophisticated group [work group]. They do not conflict, they alternate; conflict arises only at the junction between

the basic group and the sophisticated group" [14:96]. Rioch points out the danger of confusion in viewing the work group and the basic assumption group as two concrete groups. The work group and the basic assumption group are abstractions which describe two different sources of behavior in the group members. It is also important to keep in mind that group functions are an aggregate of functions of individuals; therefore, behavior associated either with the work group or with the basic assumption group occurs in the individual members.

According to Bion, the notion that the group has a "shared" or a group mind is often mentioned in groups. Nevertheless, the group mind or a similar "fusion" of minds is a fantasy developed in people who, as a result of their group experience, are threatened with a loss of their individual distinctiveness.

Basic Assumption of Dependency Group

The group in which the basic assumption of dependency is prevalent behaves in a characteristically dependent fashion in its relationship towards its leader. The term *dependency* connotes essentially dependent behavior; the concept of the oral dependent stage of the psychosexual development, as defined by classical psychoanalysis provides a developmental dynamic aspect in understanding the patient's dependent behavior. Bion sees the source of the behavior in the baD group in an emotional state which is compatible with regression to a very early developmental stage. He has further proposed that the basic assumptions perhaps originate in the primitive part-object relationships described by Klein [14:189]. The dependent group behaves as if it were blessed with a miraculous leader who has taken and will take care of all the group's needs. The group therefore assumes that no work needs to be done toward accomplishing the group's task; the group leader will himself attend to it magically. The group tends to see the leader as omnipotent and omniscient; he is the best possible leader and the group itself is sometimes seen as the most unique, "perfect" group.

When group mentality is dominated by the basic assumption of dependency, the group acts on the assumption that the reason for forming the group is to obtain security, gratification, and divine protection from its consultant (a psychiatrist). The familiar themes in the psychological life of such a group have to do with the group acting on fantasies of the consultant's omnipotence and omniscience, which is matched only by the members' insistence on their own inadequacies. Sometimes silence in a group may take on the meaning of a religious ritual attended by the consultant's devotees. The religious theme may be further elaborated by talk

concerning heresies (or heretics), conflict between science and religion, and so forth. The group may act as a "religious community" which attempts to deify the leader; if a leader attempts to resist the rigid role into which he is being cast, he may be ignored or eventually arouse the group's antagonism. There is stifling of independent thought and heresy hunting as well as rebellion against it. The dogma also makes demands on the life of the group members who relate events in their life outside the group to the superior nature of the group.

The consultant's failure to meet the group's expectations inevitably leads to disappointment, feelings of hostility, and, ultimately, to attempts to erect a consultant's surrogate by finding a replacement for him in one of the members. Invariably, the "sickest" member of the group is chosen, preferably a member who is paranoid or psychotic. The choice is made ostensibly on the basis of his being active, a good conversationalist, or some similar asset. Bion speculates that, by their choice, the members profess their own insanity. After all, an infant is essentially insane in his attempts to handle the outside world and they have regressed to the level of infants.

The members of the group will refuse to hear interpretations of their behavior; if the leader will obviously not act the godlike part ascribed to him by the group, they may attempt to portray him as unfeeling and maliciously withholding his magical powers.

The group may engage in behavior designed to make the leader act in a way that will suit their fantasy of him. For instance, a weak and "sick" member may be designated by the group to be the recipient of the leader's godlike treatment. Such a member may appear sicker than he actually is. The group is interested not in the welfare of the particularly needy group member but in the perpetuation of the baD.

Bion also outlined rivalry for the attention of the dependent group's leader among the more ambitious members. Another phenomenon encountered is greed for individual relationships with the leader; for instance, patients feel that they are being treated only when they talk to the therapist. The therapeutic benefit, according to the patients' beliefs, no longer comes from the group but from the leader alone. Group members may bask in the presence of the wonderful, restorative leader — there is nothing to do in a dependent group; everything has already been cared for by the leader or, if not, it certainly will be. The group may develop a pretense of cozyness, smugness, and warmth; the members may treat the group as a warm nest and develop unrealistic expectations about the amount of comfort and support the group should provide.

Psychiatrists are familiar with the group climate succinctly described by Rioch.

A group of sick, miserable psychiatric patients, for example, and a powerful, wise, loving, giving therapist easily fit this picture. The power, wisdom, and lovingness of the therapist are, of course, not tested. The patients are often united in the belief that if they sit long enough, the wise leader will come forth with the magic cure. They do not even need to give him adequate information about their difficulties for he knows everything and plans everything for the good of the members. In this emotional state the group insists that all explanations be extremely simple; no one can understand any complexity; no one can do anything that is difficult; but the leader can solve all difficulties, if he only will. He is idealized and made into a kind of god who will take care of his children. The leader is often tempted to fall into this role and to go along with the basic assumption of the group [75:22].

A psychiatric resident described a therapy group session during which the group members acted as if they were perfectly content with the meeting although little was being accomplished.

A member of the group mentioned that she felt like a "cat in a hot sun after a heavy dinner" and that the other members of the group felt the same. They appeared satiated, content, and disinterested in what was going on. But they showed a marked lack of dissatisfaction with this state of affairs — in fact their reaction to themselves was the opposite: they appeared to be delighted with the group and with themselves.

Another member with a clinical background remarked that he and the others behaved as if they had developed "an organic brain syndrome" because they appeared to have suffered from a memory defect. Nobody seemed to remember what was said and no one cared. These observations, however, did not prevent the group from continuing to act in a similar way. They appeared to be satisfied with the course of the meeting. Communication between the individual members was fragmentary; when a group member mispronounced a word or another one did not care to finish a sentence, nobody bothered to clarify what was said.

After a desultory conversation about how they acted scatterbrained, mumbled, and willfully misunderstood each other, the members congratulated themselves on their excellent communication. This contrasted sharply with several pleas for special care made by individual members to the therapist. In those instances the members clearly livened up and showed interest while expressing their demands on the doctor. Each person acted as though there was nobody else in the room and he was the sole recipient of the

therapist's attention. The group members did not seem to be concerned about the poor communication among themselves, but each one clamored for special attention from the therapist.

Basic Assumption of Fight-Flight Group

The fight-flight group acts as if it has met for the purpose of preserving the group. There is fear that the group will disintegrate; members may become preoccupied with absent members and praise those who are present for their attendance, as absenteeism presents an exaggerated threat to the group's integrity. There is little or no concern over the quality of the group's life and little effort is made to preserve the group; in Bion's words, "adherence to the group is an end in itself" [14:63]. Self-preservation is accomplished either through fighting or fleeing, which may be regarded as two sides of the same coin. The leader is expected either to lead in battle or to mobilize and lead the group in flight; otherwise he will be ignored. Bion gives an example of how in a military setting the actions of group therapists were misconstrued as either to getting soldier-patients back into battle or encouraging them to shirk their duty. Group therapy may be seen as a device to fight disease in patients. The person and his welfare become unimportant: he may be abandoned or otherwise sacrificed for the sake of the group. When the group acts for the purpose of battle or self-preserving flight, the individual becomes dispensable.

According to Bion, the fight-flight group shows total absence of recognition of understanding as technique. The group shuns psychological, introspective, and intellectual means of study; the main emphasis is on action. In the dependent group, negative emotions (anger, jealousy) were fairly well tolerated because of the presence of an omnipotent parentlike figure — the leader. The leader of the fight-flight group, though, is felt to exist for the purpose of expressing hatred and carrying out aggression or flight. Thus there are no assurances, which were assumed to be present in the dependent group; although hostile feelings are more easily expressed, they also arouse more fear because they could get out of hand.

In the therapy group the therapist is the work-group leader. A group operating under a basic assumption of fight-flight will find little use for such a leader. Often a leader who shows a paranoid tendency in his behavior is chosen. The proclivity to choose a paranoid leader may relate to the group's need to find an enemy — establishing an enemy obviates the need for fight or flight. The group can only accept a leader who will lead it in warlike activities of either fight or flight and giving up an imaginary battlefield. Thus fight and flight are closely related; the leader may, at the

height of the emotion, turn the group from a headlong attack to fleeing in panic, and vice versa.

The consultant to a group or the therapist in a therapy group may find himself excluded from the group. Experience in consulting to groups and organization for purposes of training shows that the group may develop its own "revolutionary slang" after it has found a suitable cause or an enemy. The nominal leader of the group may be excluded from plans for a revolt or some "rearward action."

The history of various revolutions provides numerous examples of governments which, although invested with authority and apparently capable of informing themselves perfectly, appear on the eve, as well as during, the revolution to be incapable of comprehending the threat posed to them.

Perhaps authorities are essentially excluded from communication with the remainder of the group because they do not participate in the powerful emotional source of the group's behavior, and they lack the ability to appreciate the differences between mere revolutionary rhetoric and real agreement to act. Also, once the group finds a suitable leader, it acts with few restraints and may overtake the isolated subgroup, which in this case is the authority, with great speed. The government and entourage of Louis XVI exhibited massive misunderstanding and denial of the telltale signs of the impending revolution. In Russia, the 1917 Provisional Government was in session issuing decrees, with no communication with the outside, while the building in which they were meeting was under attack.

Basic Assumption of Pairing Group

This basic assumption is that the group has met for purposes of reproduction, which is accomplished through pairs. The pairs formed in the group may not always involve members of the opposite sex; nevertheless the group assumes that their union occurs for sexual purposes.

The group is dissatisfied with its leader; it avoids work because the members assume that nothing can be done while the group has this leader. There is, though, a feeling of hope and the air is often pregnant with expectation: the pair or one of several pairs will come through and produce a new leader, a messiah who will deliver the group from the current impasse. In the meantime, the group "cannot" pay attention to the task — its main concern is with producing the messiah who will solve all its problems. The messianic promise carries with it a conviction that the group's — and sometimes the world's — ills will be cured. Feelings are

gentle and soft; hatred, hostility, and strife will vanish with the coming of the yet unborn leader.

Although the group is manifestly concerned about the future (and the arrival of the messiah), Bion stresses the present; the group, in the present, is committed to feelings of hope* and to their optimism and delight over the pair who are procreating on their behalf. Accordingly, when the group would actually produce an offspring in the form of an idea or of a person, the only result would be the decrease of hope itself. The destructive feelings reemerge, unabated by the previously persistent feelings of softness and expectant hope. In turn, this brings on further weakening of hope. The group activities resulting from the baP are not work (although the group would like to believe so) and do not produce results.

There is an element of waiting in the life of every couple who make love for the purpose of having a child; but the basic assumption of pairing group expects the coming of a superchild. Waiting itself takes on new significance, and general hopefulness is pervasive.

In a group therapy session or during a patient-staff meeting in a psychiatric hospital ward, the following behavior may be noted: participants may be conversing in pairs which exclude the others; there is a sense of intimacy within the pair even as they share an ashtray or exchange apparently meaningless stories. Pair seating may be arranged not only side by side but also across the room so that members of a pair remain in visual contact and cultivate their exclusive communication.

The actions of the pairing group may include splitting up, not only into pairs but also into subgroups and factions. The group's splintering off also results from a wish for the subgroup to produce some wonderful solutions to the problems of the whole group.

The consultant to a training group, who must study group behavior as it occurs in the "here-and-now," may notice in a group a wish to disperse, a "centrifugal" force which compels the pair or pairs to go away as if, undistracted and in privacy, they could carry out the fantasized sexual union on behalf of the group. The group refrains from interfering with their exclusiveness and rather supports and treats it with an attitude of reverence and expectant hope. There is little concern with the pair "leaving" the group because the pair's activity and the promised offspring are the fantasized reasons for the group's meeting. The group not only en-

*Hope is often an important source of strength for the sick. Nevertheless, it may also connote behavior which may signify avoiding reality or avoiding the group task. When the Athenian community faced the perils of defeat in the Peloponnesian War, Pericles spoke against blind hope and for a realistic assessment of their situation: ". . . trust being placed, not in hope, which is the prop of the desperate, but in a judgment grounded upon existing resources, whose anticipations are more to be depended upon" [97:118].

courages the pair but believes that pairing is the only solution to the group's problems.

The fight-flight group may have attempted to exclude the consultant because he did not participate in their efforts at revolt or flight. In a pairing group, attempts at excluding the consultant may also occur, but for a different reason; the consultant is excluded because the pair is the sole preoccupation of the group. There is also poor communication between the pair and the rest of the group or, in the case that subgrouping occurs, between the subgroups; communication within the pair is exclusive.

The behavior consistent with the emergence of the baP may be noted also in the course of consultation with an organization.

Members of a group of individuals charged with administration of either a university or a medical school within a university noted at their regular meeting a number of problems, some of which qualified as overwhelming. There were demands made for changes in the curriculum by forces outside the group and over which the group had no power, and that the medical school dramatically increase the number of students; this could mean changes in the curriculum, in the faculty-student ratio, hiring new faculty, possible restructuring of the organization of the medical school, and changes in the student admission procedure. The school's budget appeared to be grossly inadequate, and there were no apparent means to put it into balance. Also on the meeting's agenda was the replacement of the medical school dean.

Despite the initially gloomy and angry mood, the group proceeded to discuss the possibilities of finding a new dean. The group split up into subgroups and pairs who positioned themselves at various points around the room, involved in lively and apparently optimistic intercourse. Shortly afterward, a decision was made to establish several committees to search for a new dean.

Some of the subgroups which were formed spontaneously during the meeting became nuclei of the newly established search committees; the meeting was then adjourned, ahead of the scheduled time.

Search committees are established and appropriate mechanisms for finding heads of academic institutions. This group, though, used this mechanism to avoid work. It neglected to cope with demands for an increase in the number of students and with the inadequate budget, as well as with feelings aroused as a result of these demands. Its actions were designed to act out the baP. Despite the fact that the old or the new dean had little or no power to resolve the problems presented by these particular demands and pressures

on the university and on the school, the group acted as if the new and as yet unknown dean would magically solve its problems.

All three basic assumptions are readily observable in the here and now. Bion used here and now as a method for studying group behavior because of the instantaneous nature of the emergence of the basic assumptions in the group's formation and because of the immediacy of the group members' experience. Although group members may bring with them thoughts and concerns that originated outside the group, the primary emotional source of the group's cohesive forces originates in the group itself.

In a group of hospitalized patients there was discussion concerning the fact that on city streets strangers often fail to notice a sick or injured person. The group also discussed a member's employer, who was described as callous and showing little interest in his employees. Another member brought up her observations regarding her family: they all want her attention but give little in return. The group, though, appeared to "ignore" a new member who, at the onset of the meeting, mentioned that she had suicidal thoughts. The therapist pointed out that the theme of paying attention to an individual who is in distress and of caring in general was relevant in the here-and-now. He also wondered whether the group found it difficult to make the new member part of the group and inquired about what associated feelings they might have.

The patients noted that they did not know how to approach the new member of the group, an opinion was expressed that something as serious as suicide should be dealt with by the doctor, and so forth. The theme which had been initially discussed in "there-and-then" was related to the members' immediate experience in the group.

According to Bion no new instinct is brought into play when the group meets. Rather, the "groupy" characteristics of individuals, the gregarious nature of man, become readily apparent only when they form a group. "The only point about collecting a group of people is that it enables us to see just how the 'political' characteristics of the human body operate" [14:131]. "The group in the sense of a collection of people in a room adds nothing to the individual or the aggregate of individuals — it merely reveals something that is not otherwise visible" [14:134]. Nevertheless, "despite the influence of the basic assumptions, it is the W [work group] that triumphs in the long run" [14:135].

Carefully listening to the aims of the group will enable the group consultant to ascertain whether in the group there is a prevalence of any

one of the three basic assumptions or whether the work group prevails. The basic assumption group acts as if the fantasized basic assumption were the best way to approach the task. The ba group comes to a tacit agreement, an unconscious, implicit collusion among the members of the group which is not explicitly brought into light but which has direct consequences on their actions.

An interpretation of the basic assumptions therefore carries conviction and may significantly further the group's struggle with its task. The group does not have a conscious; the forces that make a group out of individual members are in their unconscious. Therefore, the consultant must, in his interpretations, address himself to the part of the members' unconscious that is responsible for their "groupishness." These forces are essential for fusing the members into a group; nevertheless, they have to be dealt with, as they interfere with their rational functioning. According to Bion, "the interpretations should bring the basic assumption group and the work group into contact" [14:126]. Construction and timing of correct and helpful interpretations are difficult to discern.

Bion has also addressed himself to differences among people as potential members of a group. He outlined the concept of valency which refers to a person's readiness to enter into combination with the group and to join in the making and acting of the basic assumption. Bion borrowed his term from physics to connote the basic, involuntary, and instantaneous nature of "groupy" behavior. Different individuals may vary in the degree of their respective valencies; nevertheless, every human organism has some ability to enter into a group and to participate in its basic assumptions. Individual members also show differences in their propensity toward the baD, baF, or baP. The same applies to leaders of groups who, according to their nature, may be more at home in either one of the basic assumption groups. The effective performance of the functions of leadership is enhanced in a leader who has learned about his valency toward a particular basic assumption. Bion focuses on the primitive emotions which are operative within the basic assumption group members; according to Bion, "the central position in group dynamics is occupied by the more primitive mechanisms that Melanie Klein has described as peculiar to the paranoid, schizoid and depressive positions" [14:188]. Bion compared, with a degree of reserve, the "emotional drives of obscure origin" which interfere with the rational work on the group task with the psychotic anxiety associated with fantasies of primitive part-object relationships, as described by Klein.

Starting group therapists often operate under a false assumption that the therapy group session will be useful to patients only if it is a work group. Nevertheless, in group therapy as well as in established organizations, the basic assumptions may be skillfully utilized by the leader. Ac-

ording to Rioch, "in the naive or unconscious fantasy the leader of the dependency group has to be omnipotent; the fight leader has to be unbeatable and the flight leader uncatchable; the leader of the pairing group must be marvelous but still unborn. But in the mature work group, which is making a sophisticated use of the appropriate basic assumptions, the leader of the depending group is dependable; the leader of the fight-flight group is courageous; and the leader of the pairing group is creative" [75:28].

APPLICATION OF THE TAVISTOCK THEORY IN TRAINING

The theories of group dynamics usually find their usefulness in three broad areas: (1) treatment of patients; (2) training of psychiatrists, administrators, and others who desire training and sharpening of their skills in understanding and dealing with human groups; (3) study, design, and intervention in organizations and social systems. The Tavistock theory of small group functions has been applied successfully in a variety of learning experiences. A. K. Rice wrote about the design and dynamics of experiential learning from the point of view of the Tavistock theory of small group functions [73].

In every group the issues of authority and leadership, as well as the acceptance of membership and formation of the group and members' roles, which lie mainly outside of the members' conscious awareness, are examined. Also, the phenomena of intergroup behavior may be studied.

The prototype of a design for learning through experiential study of group and organizational processes is a *residential conference*, which provides an environment away from the participants' home and work groups and allows for a degree of freedom from usual, fantasized or real, self-imposed constrictions on the participants' behavior. Members of the conference are therefore often advised that people with intimate relationships not attend the same conference [33,34]. At the same time, attendance of a group of individuals from the same institution (a hospital, department of psychiatry) may be useful because it may increase the impact of the conference on the institution during the postconference period. The experience may be stressful and it is important that it not be confused with group therapy; rather, persons who are in need of emotional support or seek psychotherapy are discouraged from participation. The term *group casualty* has been used to connote mental disorder as a sequela of the experiential learning exercise. It has also been used to describe patients who were treated after participation in an encounter group or similar activity [85,106]. Participants come from different backgrounds, such as mental

health disciplines, administration, religion, business, or government, and have different theoretical orientations.

The fundamental group and intergroup phenomena occur in the context of the social factors of age, sex, race, class, status, occupation, competence, and organizational structure, some of which may provide additional focus in the design of the conference. For instance, the conference participants may study effects of stereotyping of sexual and age roles.

The assumption made in the residential conference is that, according to Bion's theory of small group functions, the unconscious processes significantly influence the social performance of individuals. The specific instances of such behavior and its modification by social and cultural factors become objects of examination and learning. The participants study their own behavior; for this purpose there are several here-and-now events provided in the course of the conference. Later the here-and-now events are reviewed in a discussion group and an attempt is made to apply the experiential learning from the here-and-now events to the members' work with groups and social organizations according to their backgrounds and interests.

The conference is arranged by management, which determines all of the important boundaries of the here-and-now events, such as the time and place of meetings and group memberships. Consultants are provided to facilitate work during different events in the conference.

Study of leadership and of covert or unconscious processes as they relate to issues around authority constitutes an essential part of training in understanding group behavior [40,76].

According to Miller, "Groups are *defined* by their relation to authority. That is to say, a collection of individuals constitute themselves as a group by relating to authority and leadership around a task. Such authority can be manifested in a person, or left abstract in terms of ideals or attitudes around which the group can identify" [58].

The core experience of the residential conference is the *small* (study) group, which has eight to twelve members who are provided with a consultant. The task of the members is to study the group processes as they occur in the here and now; the task of the consultant is to facilitate the task of the group.

The consultant will at times interpret the actions (verbal and nonverbal) of the group in the light of the effect of the prevalent basic assumption on the group's behavior. He may remain silent even when he understands the emergence of the baD, baP, or baF. He will formulate and time his interpretation in a way that will help the group pay attention to its task. Theoretically speaking, in a case of a pure culture of work group, the consultant would offer no interpretations, since in the work group none of the

basic assumptions interferes significantly with the group's task. The consultant's interpretations would be, of necessity, perceived as ambiguous, since the consultant addresses himself to the unconscious life of the group. Miller states, "The consultant takes the stance of a detached observer and commentator, first in order to serve as a neutral stimulus for the projection of shared fantasies and secondly to be in a position to best understand and interpret them . . . The interpretations as much as possible should be clear summaries of central themes about which the group is unaware" [58]. Miller also suggests a possibility of an alternate route — the consultant may pay attention to the difficulties inherent in the way his observations are revealed to the group.

The intellectual origins of the Tavistock group method are related to the work of such Kleinian psychoanalysts as Bion [14] and P. M. Turquet [98,99]. In line with the tradition of Kleinian psychoanalysis, the consultant interprets the focal conflict of the group whether or not the group is willing to hear what he has to say. According to Miller [58], the consultant may consider and interpret the group's resistance first. This line of approach is closer to the approach in classic (Freudian) psychoanalysis as applied in a dyad during psychoanalysis.

The study group, with a subsequent discussion (application) group, may be arranged as a solitary learning experience, outside the context of the residential conference.

Besides the small group, the group relations conference usually includes other events. The boundaries of the events in terms of membership, time, and place are again defined by the management. The members have various tasks which consist of study of median group, large group, intergroup, and organizational behavior as it occurs in the here and now. Consultants are also provided for these events, and members study unconscious as well as conscious psychological phenomena.

For the *large group* (thirty to sixty members) members are assisted by a team of consultants. Communication is difficult in a group where all the members cannot maintain visual contact. (In a study group participants sit in a circle and "everybody can see everybody.")

The *median group* is a relatively new addition to the Tavistock conferences; its size is between the small and the large group. Experiences seem to oscillate between the relatively effective communications of a small group and the more disorganized large group [64].

Intergroup exercises involve the whole conference membership — small groups can send observers, delegates, or plenipotentiaries to other small groups as well as to the consultants' group. Consultants also are assigned to members' small groups or, in a more advanced form of intergroup exercise, small groups request consultants from the consultants' group. The observer visits other groups and reports back to his small

group. The delegate has the same function as the observer; in addition, he also carries a message prepared in his group to the other group or groups. The plenipotentiary may negotiate on behalf of his group. In the intergroup events the influence of the basic assumptions is modified; for instance, the baF may find expression in the small groups staging a revolt against the consultants' group and against the boundaries of the exercise as defined by the management.

The *institutional event* also involves all the conference membership and is designed to study the conference as a social system.

An application or *discussion group* meets after the conclusion of the here-and-now events with the goal of reviewing the individual participants' experiences during the conference and integrating the individual participants' learning with his or her functioning in groups. A major part of the application, though, is carried on by the members after they return to their home institutions.

Training by participation in a study group or in the Tavistock group relations conferences is being sought by an increasing number of psychiatrists; in a number of psychiatric residency programs such training has been either made a part of the resident's curriculum or recommended. Each conference participant attempts to apply and integrate his learning from the conference with his or her own participation in human groups or in social systems. Training in group relations occurs outside the context of clinical practice; psychiatrist participants need to bridge the distance between experiential learning in the study group or in the group relations conference and its actual application to their work with patients.

There appears to be a degree of confusion in the literature in regard to the application of Tavistock theory of groups to group psychotherapy. Yalom in *The Theory and Practice of Group Psychotherapy* states: "With the increased exposure of professionals to the Tavistock small group . . . [conferences], there has been a greater use of this model in group therapy. This, in my view, is most unfortunate since the approach so severely restricts the role of the therapist that it has limited therapeutic effectiveness; it clearly flies in the face of the powerful body of research in psychotherapy . . . which demonstrates the crucial importance of 'relationship' in the therapeutic endeavor. If the therapist remains impersonal, if he does not provide support, if he does not unconditionally accept the patient, if he chooses to limit his behavior to interpretation (and impersonal mass group interpretation at that), then the burden of proof is on him to demonstrate that even though he violates basic therapeutic dicta, he is nevertheless effective . . . A citadel of such impregnability is erected that the therapist (as I have observed) can, when the members are engaged in activity not easily classifiable, accuse the 'basic assumption fight-[flight] group of deliberately attempting to confuse him!" [106:180-181].

It appears that the Tavistock (small) study group, a circumscribed learning exercise, is being mistaken for a therapeutic procedure. Although the difference between a study group and group psychotherapy may appear to be, at first view, unimportant, such a differentiation is possibly subtle but nevertheless as crucial as the differentiation between findings in a physiology laboratory on one hand, and the clinical approach to a patient in the physician's office on the other hand, and is essential for any physician.

Although the therapist may achieve a degree of understanding of group dynamics as a result of experimental learning, he needs to evaluate his interventions carefully and to use his insights only for therapeutic effect. The Tavistock group relations training does not appear to interfere, *per se*, with a supportive and relationship-oriented stance of the therapist in group psychotherapy; rather, it can be used as a source of learning with the hoped-for result of broadening the therapist's understanding of dynamic forces in groups.

Participation in a study group or in the group relations conference may be an invaluable experience for a group therapist. It also provides basic training in authority relations. A degree of understanding of authority and leadership issues is essential for physicians, psychiatrists, nurses, and other health professionals, since organizations with hierarchical social structures — hospitals, clinics, teaching institutions — are ubiquitous in delivery of health care.

APPLICATION OF THE TAVISTOCK THEORY TO SOCIAL SYSTEMS

Bion's concepts were first used in Great Britain in consultation to business, government, and other organizations. In addition to Bion's (Tavistock) theory, other dynamic psychoanalytic concepts were used in a study of organizations. Abraham Zaleznik [107,108] has been able to apply psychoanalytic theory concerning personality and conflict to organizations and management. A major contribution to the development of social system consultations was made by A. K. Rice, who stressed the importance of understanding the organization's task and of careful conceptualization of the organizational structure and function, in agreement with work on the task.

An example of defining the primary task in an organization may be a large enterprise in which plans are being made to build a new department. The management and members may invest the new unit with fantasies concerning unrealistic expectations about a

different philosophical approach to work and about new technology, for example. Once the proposed unit becomes a repository of hopes for the future, the management may unwittingly attempt to prolong the undefined state of the organizational structure of the new unit, and thus interfere with work on the primary task of the overall enterprise.

A social organization may be seen as a system of activity with boundaries that separate it from its environment. An important function of leadership is boundary control — monitoring and defining the boundaries of the system. Operating activities of an enterprise involve a *through-put* across the boundaries of the system.

The concepts used in consulting with organizations are often applicable to systems of health care delivery. Levinson and Astrachan [42] have applied the Tavistock approach to social systems to a mental health center with a particular focus on maintenance of the boundary control functions. A teaching psychiatric hospital may be conceptualized as a system with an intake of patients, trainees, and workers, and with an operating process of treatment, teaching, and research. The output is represented by discharged patients, trainees, and workers who, with varying degrees of success and satisfaction, completed their stay, and by the products of research. A study of the system will reveal an ongoing conflict between the primary tasks of treatment, training, and research.

Leadership can significantly increase the cohesive forces as well as the use of helpful resources within the individual task group members by paying careful attention to the definition of the boundaries of the system.

At a patient-staff meeting there was a feeling that there was not enough time to deal with a disturbed patient; he appeared to be isolated from the rest of the community — “nothing could be done about him.” The chief resident, though, proceeded with reiteration of the time boundaries of the meeting, introduction of a new patient, and an explanation that the three persons who were earlier referred to as “strangers” were new trainees. Another staff member noted and clarified the absence of the head nurse and of one of the patients. It was explained that the head nurse would be on a month-long vacation; this information had not reached all the members of the community and of course was not known to the new members. The presence of the substitute head nurse was acknowledged. Several of the patients and staff then noted that “things were different without the vacationing head nurse; she made everyone feel more secure . . .”

A patient then remarked that unlike the “difficult” patient, he had been on the ward for a number of weeks; he also noted that ini-

tially it had been difficult for him to familiarize himself with the ward and to be accepted by the community. At the same time there was a noticeable decrease of feelings of helplessness about the difficult patient; in contrast to the initial part of the meeting, the patients began to show interest in him and the group proceeded to deal with his behavior in a more constructive manner. Later the group discussed the fact that the vacationing head nurse had a special relationship with the difficult patient — on several occasions she had stepped in to resolve conflicts which arose from his behavior; she seemed to have been the only person who could “handle” him.

Further in the staff meeting, feelings about the head nurse’s prolonged absence came to light. The staff was concerned about the influx of trainees into the ward. Fear was expressed that during the head nurse’s absence the staff would be less capable of coping with particularly disturbed patients; the head nurse was considered indispensable — the only one who was able to “keep track of everybody” and doubt was expressed that the ward could function properly without her. It was essential to deal with the feelings in the staff group in regard to the head nurse and also to ensure that during her absence the boundary-keeping functions would be cared for by the staff.

This example points out the importance of paying attention to the boundaries of the system, feelings about authority as well as conflicts within the leadership (staff) which affect the functioning of the whole social system. Stanton and Schwartz arrived at similar conclusions and noted instances in which the patient group acts out the intrastaff conflict [91].

Studies of authority relations have shown that the members of a group not only have exaggerated notions and fantasies about the leader but that they also pick up subtle signs of direction for the group in the person who is invested with authority. These covertly communicated signs of the leader’s wishes are then acted out by the group.

A serious commitment by the staff to the maintenance of the time, space, membership, and role definition boundaries may have a very beneficial effect on the functioning of an organization.

Ruth G. Newman [62] discussed an experiment in a school that was plagued by lateness and absenteeism. The staff members were instructed to be on time. They used good watches and entered the classrooms neither too late nor too early. The boundaries of staff meetings were also precisely maintained. The teachers continued to record data concerning lateness in classes; they were also instructed to refrain from showing the slightest trace of verbal or nonverbal

comment, approval, disapproval, or any other communication regarding the lateness statistics. Despite the avowed skepticism of the staff, who customarily dealt with lateness by lecturing to students and by disciplinary measures, there was a dramatic decrease in lateness. Classes and staff meetings no longer ran overtime. The students and staff also reported decreases in fatigue.

The staff expressed preference for continuing the new system. Nevertheless, when the experiment was reversed, by introducing the teachers' lateness — again without any further comments to the students — students' lateness recurred.

Marshall Edelson demonstrated the unconscious forces affecting relationships with authority in a psychiatric hospital and noted their implications for treatment [23–25].

In group therapy, constant examination of the therapist's feelings and attitudes and of what is being communicated to the patients is essential. It is generally useful for the therapist and cotherapist to meet regularly, perhaps after the conclusion of the group therapy session, and to obtain supervision. When the therapist and cotherapist establish a good working relationship and maintain control of the boundaries of their meetings (even if their meetings are brief — for instance, ten minutes), and of the meetings with the supervisor, it is usually reflected in the functioning of the therapy group. Thus it is apparently useful for the therapist and cotherapist to meet even if they feel that there is nothing to discuss, or when they both understand and agree on what transpired in the group therapy session.

From his study of social systems, Rice outlined the concept of a *sentient group* or a *sentient system*, which refers to a group or system that demands and receives loyalty from its members. The word *sentient* denotes feelings and the sentient group members are united by their feelings about their common background and shared experiences. The sentient group is different from a task group and in a particular organization their boundaries may not coincide. According to Rice: "Any enterprise requires three forms of organization — the first, to control task performance; the second, to ensure the commitment of its members to enterprise objectives; and the third, to regulate relations between task and sentient systems [57:xiii]. The psychiatric hospital may be conceptualized as composed of individual wards or teams, each of which contains representatives of the sentient groups. The boundaries of the sentient groups formed by doctors, nurses, patients, students, and others run across the boundaries of the task groups. Thus, the boundaries of the task and of the sentient groups can be expressed by a gridlike pattern. (See Table 8.1.) The sentient groups have their own leaders (chief psychiatrist, head nurse, for exam-

Table 8.1
THE TASK AND SENTIENT GROUPS IN A PSYCHIATRIC
HOSPITAL

	Task Groups		
	Team A	Team B	Team C
Sentient Groups	Psychiatrist	Psychiatrist	Psychiatrist
	Nurse	Nurse	Nurse
	Nurse aid	Nurse aid	Nurse aid
	Patients	Patients	Patients
	Trainees	Trainees	Trainees

ple) and needs which have to be reconciled with the aims of the task group.

Ruth G. Newman, in her work with children in schools and in treatment, has translated Bion's concepts of basic assumptions into Erik Erikson's formulations of development. (See Table 8.2.) Erikson relied on the social and cultural aspects of the individual in his utilization of maturational phases of psychosexual development which he correlated with critical periods and phase-specific crises varying with the personal, social, and cultural environments. Erikson's concepts are closely related to value systems and to sociological theories when he deals with the processes resulting in the development of the ego identity and in regressive identity diffusion.

According to Newman [62] there are developmental stages during which behavior consistent with basic assumptions is essential for survival. Nevertheless, it is important to distinguish between the stage-level determined behavior in children and the regressive acting out of the basic assumptions. For instance, dependent behavior toward a teacher may be appropriate in second-graders and may occur in a work group; a further regression, though, to helpless dependency when "the group behaves not like a second grade class but like toddlers with few social skills to apply or ability to listen" [62:79] is "behaving in a *Basic Assumption Dependency* mode inappropriate to its work-task and actual developmental age" [62:79].

APPLICATION OF THE TAVISTOCK THEORY TO TREATMENT

A number of authors have focused on the Tavistock theory of group functions in the context of psychotherapy and social systems therapy

[7,24,25,38,54,63]. Although no systematic training is offered for therapeutic work with psychiatric patients based on the Tavistock theory, the Tavistock model of group relations training has been used by increasing numbers of psychiatrists. Application of experiential learning about groups and authority relations occurs on many levels in therapy and in the structure and functions of the psychiatric hospital. The following model may be used by group therapists. In the cotherapists' meeting, or in their meeting with a supervisor, the content of the meeting may be reviewed. An attempt is then made to identify a major theme of the meeting. The next step is a further reduction to one of the four modalities of group functioning — the prevalence of one of the basic assumptions or the work group. The therapists' aim is to identify major themes during a therapy meeting which may have produced seemingly disparate entries from individual patients.

At the onset of a group psychotherapy session Mrs. K announced that she had visited with her parents over the Christmas holidays; it was nice staying with them but she is glad to be home again — she feels tired. Miss X expressed similar feelings — the holidays always leave her exhausted; she spends too much money; she doesn't know if it is worth it. Mr. M, apparently disregarding the previous two entries, asked whether one of the therapists could give him information regarding his medication. His question was formulated in such a way that no rational answer was possible; he wanted to know whether he ought to take more of the medicine prescribed by his family doctor which "did not work." He also did not remember the name of his medication. Mrs. Y then aired her decision to take her ten-year-old son out of the school he is attending — she found a better school for him; she only wants the best for him.

One of the therapists later noted that the group impressed him as being made up of selfish people who do not care for or listen to each other. Nevertheless, after the first two patients' comments, it could be assumed that the theme of the holidays, with the need for satisfaction, buildup of expectations, and subsequent letdown was the group theme. Should this proposed theme be discarded after either of the ensuing entries? In this case, the therapists had the impression, based not only on the content but also on the context of the whole meeting, and on their subjective experiences during the meeting, that the theme did not need to be essentially changed but only broadened to include the entries made by Mr. M and Mrs. Y. The enlarged theme of futility, depression, of unmet needs, of denial of feelings, and a threat of hostile breakthrough was underscored by Mr. K's demands presented overtly in the here and now and by Mrs.

Table 8.2
 CHART OF LIFE CYCLE DEVELOPMENT AS DERIVED FROM
 ERIKSON AND BION CONCEPTS

<i>Group Modes at Grade Levels</i>	<i>Stages</i>
Consolidation, retirement, transmission of knowledge and goods; preparation for death, dying	8. Late, middle, and old age
Marriage, child raising; focusing on work; plans for separation from children and from work; own lives	7. Middle age
Twelfth grade through college or work, graduate school; marriage, child raising	6. Adulthood
Ninth through twelfth grades	5. Adolescence and young adulthood
Sixth through eighth grades	4. Preadolescence and puberty (latency)
Third through fifth grades	3. Middle childhood
Kindergarten through first and second grades	2. Early childhood
Preschool, nursery, day care, home care	1. Infancy

*Predominant Modes of
Group Leadership for
Stages of Development*

Work Pairing	<i>Ego integrity vs. despair dynamic</i> Supportive and human connection-type leadership, offering chance to let go without giving up
Fight-flight Dependency	<i>Generating vs. stagnation dynamic</i> Leadership offering opportunity to review past dynamics and reevaluate goals and values in relation to identity; leave room for change
Inner controls assumed; leadership consultative in nature	<i>Intimacy vs. isolation dynamic</i> Leadership required offers opportunities to work on all past dynamics; core dynamic here expresses loneliness, sex relations and commitment
Dependency Pairing Work Fight-Flight Struggle for inner controls	<i>Identity vs. role-confusion dynamic</i> Requiring all the former types of leadership, plus distinct boundaries in which there is free rein to experiment; tryout by self and with adult
Work Group Dependency Fight-Flight Inner and outer controls	<i>Industry vs. inadequacy dynamic</i> Requiring teacher-learner leadership; adult and peer for learning skills, socialization, competition
Dependency Fight-Flight Groups Emerging inner controls	<i>Initiative vs. guilt dynamic</i> Requiring combined controls with loose reins — dealing with fight-flight drives
Dependency	<i>Autonomy vs. shame and doubt dynamic</i> Requiring mothering and fathering, acceptance; limit setting, controls from without; leadership
Groups Controls from without	<i>Basic trust vs. mistrust dynamic</i> Requiring mothering, nurturing, limit-setting leadership

From R. G. Newman, *Groups in Schools*. Copyright ©1974 by Ruth G. Newman. Reprinted by permission of Simon & Schuster, a Division of Gulf & Western Corporation.

Y's transparently futile attempt to resolve her ambivalent feelings about her son. The basic assumption prevalent during the meeting was dependency.

The patient-staff meeting may also be reviewed from the point of view of identifying major themes and of occurrence of basic assumptions. Further, the issues around authority, intrastaff conflict, and so on may be focused upon.

The Tavistock consultant in a study group also attempts to identify the major group themes, note the emergence of basic assumptions and projection — identification and other ways the members of the group approach authority, for example. His interventions must be consistent with facilitating the group task. According to Miller, "the intention of the consultant is strictly to observe and communicate his observations as accurately as he can, with the full expectation that he will simultaneously make the work of the group possible and his own role more problematic" [58]. It would be impossible for a group therapist, for instance, to limit his interventions to interpretations of basic assumptions. Such behavior would probably cause a great deal of anxiety and would be inappropriate. Also, the Tavistock consultant often appears to the members to be an ambiguous, detached figure.

What, then, are the ways a group therapist can shape his interventions? He may call attention to the group theme rather than deliver an ambiguous interpretation of the primitive mental processes concerning the basic assumption group. This, of course, does not deny the fact that the basic assumption is reflected in the more conscious group theme. The interpretation that summarizes a part or all of the meeting and attempts to point out a single theme as a source of the group's mental life has been termed a *group interpretation* or a *mass interpretation* [106]. It is useful to bring the patients' comments into the here and now. In the example of the group therapy session, the therapist may have noted that the theme of needs, disappointment, and a wish to do away with unpleasantness and anger was reflected in the way the group members related to the therapists and to each other. The interpretation has to be clearly worded to the patients.

A theme summary may also be offered to the group in the form of a memberlike comment during which the therapist adds some of his own individualized impressions about the here-and-now aspects of the group. For instance, in the example, the therapist may say: "I could not help noticing that people here tonight are not talking and listening to each other, but are bringing up, one at a time, some important personal experiences."

Even less ambiguous interpretation and one that usually evokes most response in patients' comments and further development of the theme is

the going-around interpretation [106]. Here the therapist constructs his interpretation by adding to the group theme a quote from the patients' previous entries. He then goes around the group, using each patient's name in turn and tying into the group theme what each patient had said.

THEORETICAL FORMULATIONS DEVELOPED AND APPLIED IN THE CONTEXT OF GROUP THERAPY

Even before C. G. Jung made his often-quoted statement, "When a hundred clever heads join in a group, one big nincompoop is the result, because every individual is trammled by the otherness of the others" [37:80], clinicians have attempted to study group dynamics. Besides the works of Freud, Sullivan, and Bion, there are a number of theoretical formulations concerning group behavior which resulted from the work of psychiatrists. Among these are contributions by S. H. Foulkes and E. J. Anthony [28], S. R. Slavson [90], P. Slater [89], Eric Berne [12], J. L. Moreno [60], and others. Most of the theories are intimately related to group psychotherapy or to a particular therapeutic technique and will not be dealt with here.

Whitaker and Lieberman [100] have postulated a concept of focal group conflict which is somewhat related to the formulations of Bion, Ezriel, and Sutherland [65]. Each member of the group projects unconscious fantasy objects onto other members and may also attempt to manipulate the others into assigned roles. From the onset of the meeting, tension is usually focused around a specific event, an idea, or a feeling tone. The patients are not aware of the underlying reasons for the tension, although there is an evolution of a group-shared unconscious conflict. The therapists identify group themes and interpret the latent meaning of the events in the group.

Carl Rogers [78] has developed a theory and techniques in a client-centered approach outside of the usual medical model. Traditionally, the physician acts as an authority and offers a definite prescription for his patient. Rogers' approach is marked by an egalitarian relationship with the client; the helping person attempts to gain and communicate his empathetic understanding to the client. The experience of being understood is itself a helpful factor. Small groups conducted by Rogers and his students are characterized by focus on the here and now; value is placed on accurate perception of and sensitivity to feelings in others, empathetic understanding, and mutual appreciation of nuances of personal experience. The persons in the group are accepted unconditionally; an assumption is made that a person possesses a tendency to develop and grow and actualize his full potential. The group has been termed an intensive group or an en-

counter group. A marathon group may meet for a twenty-four hour, or longer, session.

LABORATORY TRAINING METHOD

Another major source of data about interpersonal behavior is associated with the development of laboratory training, an applied behavioral science method — the almost ubiquitous, "T-group." The *T* stands for (sensitivity) Training (group). Although *T-group* has become part of the American vernacular, it dates back only to the 1940s. As the inception of the Tavistock theory is connected to the the name of W. Bion, so is there a single investigator responsible for the heuristic beginnings of the laboratory training method.

Kurt Lewin (1890–1947) a psychologist, contributed to many different areas of study of behavior. After his emigration from Germany to the United States in 1933, Lewin attracted many students and had a significant impact on the direction and subsequent development of American psychology.

Lewin's ideas were profoundly innovative and influenced his students greatly. Concepts first defined by Lewin have become an integral part of the study of group behavior; their origin is often not acknowledged. Lewin, for instance, coined the terms *group dynamics* and *communication feedback*. Gordon W. Allport listed "the dynamic power of unfinished tasks, escape from the field, the level of aspiration, differentiation, detour, time perspective, cognitive structure, levels of reality, barrier, rigidity, satiation, life space, marginal affiliation, group decision, change experiment . . . In the fields of personality and social behavior, there are no concepts as useful and as embracing as Lewin's twofold representation of the person as a differentiation region and as a point region in his life space" [52:229]. Lewin made a contribution to psychiatry even before his involvement with small groups. His field theory was used by psychiatrists, for instance, in its application to the community of the hospital ward [44,102]. Lewin, because of his influence on American psychology, may be compared to Sullivan in the field of clinical psychiatry.

The focal point of Lewin's approach to the study of small groups was his *action-research*, a stance of active participation with ongoing scientific scrutiny of phenomena under study. (One is reminded of Sullivan's concept of participant-observer.) Lewin's work and that of his students in the area of group behavior is characterized by research directed toward action as it occurs while following a dictum that the scientist must participate actively in the behavior which is being studied. The quest for shedding the vestiges of Cartesian thought, a mechanistic view of linear cause-and-effect relationships in behavior, is ongoing, as demonstrated by the work of

philosophers and psychoanalysts [82]. Although the discovery of a T-group may at first appear to be an outcome of a number of fortunate circumstances, closer scrutiny will reveal it to be a result of serious commitment to the study of psychological phenomena in small groups and in Lewinian action-research.

In the summer of 1946 Lewin conducted an experiment on behalf of the Connecticut State Inter-Racial Commission, which was concerned with training leaders and with finding the most effective means for combating racial and religious prejudice in communities. The staff, under Lewin's direction, were concerned with recording, observation, and research. Three ten-member groups were led by Leland Bradford, Kenneth Benne, and Ronald Lippitt. The staff treated the participants as peers and the meetings became workshops. Originally the research staff were to report the observed, unprocessed data from the three groups. After the conclusion of the day's meetings, observers reported the unprocessed data from the three groups to the whole research staff. However, when a few of the group members joined in these sessions, most of the staff felt threatened. Lewin, though, agreed and pointed out that the feedback* might be useful to the groups, and the members' participation was not discouraged. The resulting effect was, in the words of Leland Bradford, like a "tremendous electric charge . . . as people reacted to data about their own behavior" [52:212] and soon all the participants were staying for the feedback sessions. Another major step eventually involved the observers providing feedback directly to the group in its meeting, and even further development was marked by the members themselves taking over the on-the-spot observations of the events in the group. The "basic skill training group" was developed into a full-fledged T-group, as it is known today, after the foundation of National Training Laboratories (NTL) in 1947 [52].

The T-group is marked by an ahistorical approach, a high value being placed on interpersonal honesty, feedback, self-disclosure, and observant participation. In the group the member can learn about his interpersonal effectiveness and competence,† how he comes across to other people, how he responds to cohesive forces of the group or to group coercion, and so forth. The size of the group may vary, although there is an average of ten to twelve members and one or two trainers; this group size is equivalent to the Tavistock small group. Lewin and his students were concerned with bringing about a change in behavior. Lewin showed experimentally that it is usually easier to change the opinions of a group than to change beliefs of individual members separately; the opinions formed by groups are, however, more resistant to change than those formed by persons independently [43,44]. The customary social roles and

*The term *feedback* was borrowed from electronics; the choice may have had to do with Lewin having worked, at that time, at the Massachusetts Institute of Technology [106].

†White postulated a basic need in man to be interpersonally competent [101].

stereotyped responses were discarded in a T-group in favor of interpersonal data which were obtained in the here and now in the group. The process of loosening up the members' beliefs by removing such conventional behavior as introductions, status symbols, and meeting procedures was termed *unfreezing*. The group, though, must support the individual member to a degree that he can tolerate discomfort caused by unfreezing. The group is a sanctuary in which the member can experiment with new behavior and entertain different beliefs. Thus, the members form a "laboratory," a temporary working environment which allows for experiment and for change. Emphasis on growth and learning is made possible because of the participants' shared responsibility in accomplishing their task. Each person shares responsibility for his reeducation; it is easier for him to accomplish change when he himself, has observed and validated the behavioral data; the observations are his *own* observations, and he, himself, can draw the necessary conclusions. According to Argyris, emphasis on members being responsible for their own reeducation helps to maximize psychological success, confirmation, and essentiality [4:159].

As an educational method, laboratory education differs from the traditional didactic approach which emphasizes substance, rationality, the inappropriateness of feelings, direction and control by the teacher, and so on [4]. Although the goals may be the same, the assumption is made that there are additional important aspects of the educational process. Among these are maintenance of effectiveness of the learning groups, admission of all relevant data including feelings, and enlargement of responsibility by giving the students greater direction and control over their education [4,17,84].

The T-group is essentially an educational method, an instrument of behavioral change. The approach differs from psychoanalytic methods of exploration of group behavior in that it does not focus on the unconscious forces as manifested in the member's behavior, but rather deals with overt, explicit contemporary phenomena and observation, classification, and change of determinants of behavior. Klein and Astrachan have compared a Tavistock study group and a T-group as training models for learning about group dynamics [40].

Philosophically, the laboratory training method and its latest offspring, organization development, have their roots in rationalism, pragmatism, and existentialism [30].

Explicit communication and feedback about the member's behavior are not provided as a definitive "evaluation" which would, in fact, help to establish the status quo, but as information which allows the member to experiment with change. According to Warren Bennis, "conditions are promoted whereby group members by examining data generated by themselves, attempt to understand the dynamics of group behavior, e.g.,

decision processes, leadership and influence processes, norms, roles, communication distortions, and effects of authority on a number of behavioral patterns, personality and coping mechanisms, etc. In short, the participants learn to analyze and become more sensitive to the processes of human interaction and acquire concepts to order and control these phenomena" [10:120].

The trainer in a T-group acts not as an authority but as a peer of the members; his personal goals also include learning about self and about interpersonal effectiveness and often coincide or overlap with the members' goals. The trainer may occasionally provide brief summaries of the group work in a format of "lecturesses." When appropriate, the trainer may suggest exercises which further help the unfreezing and also help to maintain the here-and-now focus or use cognitive aids to outline various areas of behavior. The trainer uses his own, as well as the members', resources to facilitate behavioral change.

The following are examples of exercises which provide verbal and nonverbal communication data about the members and the group:

The members form pairs. Within the dyad, a choice is made between the two members. One member of a pair falls backward and is caught by his partner, who stands behind him. The participants focus on their experiences concerning their feelings about making choices when forming the dyads, about the coercive forces in the group while making their choice, about cooperation, resistance, sensitivity, and trust when working with their partners. They are encouraged to explore their feelings and the here-and-now experiences with their partners; the experience and associated feelings are further discussed in the group.

The paired-off members, after a series of experiences, seat themselves around the room, each two members facing each other. Using only the information derived from the group (let us say the group has been meeting for forty-five minutes), they take turns listing first "three things I like about you" and then "three things I do not like about you." They refrain from other verbal communication until all twelve statements are made. Afterward, the two members discuss their experience. The issues of noticing and observing the other, feedback, honesty, learning about self, and so forth, become the focus.

Each member has to: (1) judge how close he feels to the group as a whole and to position himself accordingly as close to or as distant from the center of the room (which is marked with a small object) to best express his feelings toward the group; (2) decide on one member he feels closest to and position himself close to this person, with a

choice of changing his position in relationship to the "center" of the group; (3) stand, sit, or lie down with respect to his sense of his own power in the group (a member may choose to stand upon a chair). The resultant sociogram is then examined for the participants' immediate experience.

Reflection and integration are necessary steps following each one of the exercises. The experimental data about self and the others require cognitive formulation and evaluation in terms of their usefulness for a conscious making of choices about one's future behavior.

An example of a cognitive aid is the "Johari window" (the syncretic name was formed from the names of originators Joe Luft and Harry Ingram [51]).

A person may be thought to have several parts, as shown in Figure 8.1. Quadrant 1 represents those areas of the person of which he is aware and is willing to share with others, the "open self" [83]. Quadrant 2 represents those parts of himself of which he is aware but is consciously trying to conceal from others; it is the secret area of the self. Quadrant 3 is the "blind self" or "the things which we unconsciously conceal from ourselves yet which are communicated to oth-

	Known to self	Unknown to self
Known to others	1 Open self	3 Blind self
Unknown to others	2 Concealed self	4 Unknown self

Figure 8.1.

The Johari Window. Reproduced by special permission from *Human Relations Training News*, "The Johari Window" by Joseph Luft, vol. 5, no. 1, pp. 6-7, 1961. Copyright © by NTL Institute.

ers" [83:23]. Quadrant 4 is not relevant for the purposes of a T-group. In the T-group, the goals are to increase the size of Quadrant 1 by decreasing Quadrant 2 (the secret area) through self-disclosure and Quadrant 3 (blind spots) through feedback.

The exercises and aids do not have to cover an agenda of didactic instruction but serve as a starting point for exploration of possibilities for behavioral change.

Prior to the termination of the group, the participants discuss reentry into their back-home groups. The conventional values and norms of role definitions which exist in back-home groups often serve a useful purpose and certainly cannot be successfully challenged by a single person. The members need to accomplish a cognitive integration of their experience. The values of openness, feedback about behavior, trust, and explicit and overt communication which are promulgated in the laboratory cannot usually be directly translated into participation in back-home groups; such a misapplication may have disastrous consequences.

Not *all* openness is helpful: self-disclosure for the sake of itself would not per se enhance the members' opportunities for constructive change [4]. Also, exploration of feelings, without subsequent cognitive integration and evaluation, would not necessarily broaden the individual member's sphere of interpersonal competence. Emphasis on "submergence" in feelings with concomitant neglect of intellectual aspects of learning may actually result in a stifling and unproductive narrowing of the individual's repertory of behavior [4].

The laboratory method is in many ways a "basic science" of group therapy; the members' active participation, emphasis on here-and-now and giving and receiving feedback are, in a fundamental way, parts of techniques most often used in group therapy. Nevertheless, the concepts and practices developed within the laboratory method have probably not been fully used by group therapists in particular, or clinicians in general. Industry and possibly the government have been able to avail themselves most successfully of the attention and time of the NTL practitioners. Hanson et al. [35] have developed an approach to treatment of hospitalized psychiatric patients in which the patient's behavior is viewed as a failure of functioning in his back-home group. (For most individuals the basic back-home group involves a family, a few close friends, or, in the case of an adolescent or a young adult, his peers at school; their number approximates the size of a small group.) The patients' treatment most often occurred in a group, with a goal of their retraining for more effective participation in their respective back-home groups. Family and friends at times joined the patient's group; the member could then, with the help of the group, successfully resist his tendency to revert to the old behavior. Visits

home were also encouraged, so that the group members could experiment with and test the usefulness of their newly learned behavior.

The laboratory training method has become a powerful educational tool. The National Training Laboratories have grown into a large operation and the laboratory method is being used worldwide. According to Warren Bennis, the NTL "have now grown to be an internationally recognized and powerful educational force affecting almost all of the social institutions in our society" [52:210].

In the words of Carl Rogers, "Sensitivity training is perhaps the most significant social invention of this century. The demand for it is utterly beyond belief. It is one of the most rapidly growing social phenomena in the United States. It has permeated industry, is coming into education, is reaching families, professionals in the helping fields and many other individuals" [52:213-214].

ORGANIZATION DEVELOPMENT

According to Cyril R. Mill organization development (OD)

is basically a method of planned change aimed at improving the condition of an organization and the relationships of the people within it. It draws on concepts from the management, social, and behavioral sciences, and is usually carried out through collaborative intervention by organizational consultants, management, and certain involved staff.

An OD program can be adopted to achieve one or many objectives. They include developing personnel's capabilities, increasing the role personnel have in decision-making and problem-solving, developing teams, building trust, improving communication, improving work procedures or work environments, providing better reward systems, and helping administrators plan and manage according to the most pertinent objectives.

OD consultation deals with the process of people working together. It does not provide answers, but rather, helps find ways to get at answers. Unlike the traditional model of management consultation, it is action-oriented; OD does not stop with making a diagnostic study and submitting a report [56:726].

The consultant relates to the organization, as a whole, and

uses clinical and consultation approaches to diagnose the issues more accurately and specifically. That is followed by problem-solving and planning sessions, by an action phase during which agreed-on plans are tried, and by evaluation of the outcomes. The evaluation serves as a diagnosis to start the cycle over again.

While human relations training often focuses on personality styles and characteristics, OD focuses on issues. Consequently, OD is more acceptable and less threatening to those participating [56:728].

Since the pioneering work of Herbert Sheppard and his colleagues during the late 1950s [10], the laboratory method has been increasingly used in improving the functioning of organizations. A large organization may be affected, for example, by "seeding" of the total number of employees in more or less key positions by a number of persons who have participated in and may periodically return to a T-group. (Nevertheless, a total approach to the organization as a whole is probably more apt to bring results) [16,22,31,85].

Gradually a number of technologies which are directed to promoting helpful change in organizations developed into Organization Development.

The specific intervention techniques of OD may involve feedback and problem-solving sessions; the consultant "helps the group improve its working style and productivity, through comments on the group process, or through such training inputs as the steps to follow in identifying a problem or in reaching a decision and delegating responsibility" [56:728].

Team building is another method; it eliminates the reentry problem of the T-group. Consultation and intergroup problem solving may also be used. Mill says, the "OD can be considered as the strengthening of the human processes in an organization in order to improve the system's ability to achieve its objectives. It touches the culture of the organization, the norms and standards governing interpersonal behaviors. It teaches processes that can be used within the organization to solve new problems. As these processes become the new norm, the organization moves to firmer ground, able to deal with continuing pressures for change" [56:728]. More recently, as OD has proved its usefulness and has gained acceptance, the OD consultant has changed from a nondirective, purely process-oriented practitioner to an authoritative specialist. Although the consultant should be primarily a facilitator, there is now emphasis on the consultant being authoritative, at least at times [5,18].

The OD practitioner used to be considered a change agent in the organization; with the help of the consultant the client (administrator, manager) himself becomes the change agent. The consultant uses a variety of consultative roles and works not only with the leadership of the organization but also with persons at all organizational levels [18]. Although the techniques of OD have found wide application in industry and government, their use in the field of health care delivery have been limited.

Richard Beckhard [9] noted some of the problems in using OD in health care organizations. From the health workers' point of view

The OD and applied behavioral science in general is seen as soft, fuzzy and an indefinite form of technology systems.

There is an assumption made that the behavioral scientists do not understand the health world; the loosening of organizational lines of control, which is a necessary step in bringing about change, is seen as potentially dangerous. The health organizations are concerned with life and death situations and often already overloaded with work; the change is viewed as particularly risky.

In the medical model the emphasis is on authority; the OD approach is traditionally egalitarian.

Behavior science practices are seen as "an old hat"; the health professionals have been dealing with behavioral matters throughout their professional lives. The health workers constantly deal with troubled people seeking help; they have developed coping mechanisms for avoiding getting too involved in the emotional problems of patients; the OD consultant may be trying to change their coping mechanisms and reduce their "objectivity" . . .

Most health workers see themselves as helpers and have difficulty to see themselves as being helped.

In medicine, there is emphasis on distinct professional roles; equating of credentials and competence is common. The majority of clients have had specialized training and certification and are very much oriented towards professional issues, particularly with the emergence of paraprofessionals. (Rice's [57] concepts regarding task and sentient group boundaries permit a similar view of this problem.)

The need for personal support among the health professionals is often high but masked and not readily admitted [9:106].

OD experts may be accepted because OD was found effective by industry, where its contribution can be expressed in amounts of money.

It is customary for a medical student or a nurse, upon graduation or completion of internship or residency training, to summarily assume new and most serious responsibilities involving patients' lives. There is usually little attention paid to the health worker's emotional needs; his solutions to the problem are rarely discussed in the open.

Irwin Rubin, Mark Plovnick, and Ron Fry [80] advise a specialized approach to consulting to health care organizations. The consultant must be familiar with the medical model; the maxim *primum non nocere* is applied by health professionals to the traditional OD consultant's approach which implies risk and experimenting with unproved methods. Such activity may be viewed as resulting in peer criticism, legal risk, or danger to patients' health. In health care, "it is easier to spot (measure) errors than it

is to measure successes. [The] consultant's posture, 'we are here to help you to work out answers to your own problems,' is inconsistent with physicians' values and hence, with a health care organization's dominant value system. In the medical model one (as doctor or helper) involves the patient only indirectly in the diagnosis phase of problem solving, and almost never in the prescription (choice of alternative action steps) phase" [80:112].

Accordingly, most health care organizations adopt a curative, crisis-oriented mode of operations; there is resistance to and lack of interest in preventive solutions or in future-oriented planning. Also, the power distribution in a health organization may be unconventional; the administrator at the top of the organization may not be able to accomplish change as much as physicians who formally have a low administrative position or only a tenuous administrative tie with the overall organization.

The consultant may need to modify the traditional nondirective approach; Rubin et al. give the following advice to an OD consultant who is working with an organization whose members share the unique values which are characteristic of the health field: "For example, instead of offering a *process* through which the client could determine who should be involved in a decision (non-directive) . . . why not tell the client who you think should be involved, and why not call the meeting and run it yourself?" [80:122]. In line with the medical model the consultant may need to fill the role of an expert, to diagnose a problem and to prescribe solutions. In order to win support the consultant may have to go along with the crisis-oriented mode of operation; he has to be committed to getting involved in the day-to-day nitty-gritty management of change, like scheduling meetings, ensuring attendance at them, and managing their content.

Nevertheless, inroads have been made toward utilizing OD in health care. Mill [56] points out that a short-term consultation with mental health agencies brings about an increase in the effectiveness of the system. Such consultation is centered around a single, well-outlined problem; the consultant can work with the staff on improving communication, setting up a formal system of meetings and committees (the clinicians often lack training in administration), or team-building.

Although theories concerning behavior in groups have originated from several different sources, with varied philosophical bases and under various historical conditions, there have been attempts either to unify or at least to find common elements among various approaches [40,85]. There are definite similarities between the Tavistock and the NTL approach to small groups. The small group of up to twelve members can effectively communicate about its task; it is necessary to maintain the quality of the group's functioning; the focus on here-and-now allows for understanding feelings generated in the group. Different approaches to organizations

also appear to be less irreconcilable; the social system must be reviewed in its entirety; the task and the boundaries of the system need to be clearly outlined; the process of human interaction and of relationships is profoundly affected by psychological forces.

Since the late 1960s investigations in the field of small groups have been occurring against the background of mass social phenomena of various group practices, subsumed under the name *encounter groups* [106]. Large strata of middle-class populations of the United States took part in many group experiences which have, according to Yalom [106], become a relevant and relatively permanent part of the American culture.

Lieberman, Yalom, and Miles, and their co-workers [48] studied outcome as well as the relationship between outcome, leader techniques, and group process variables [106:473]. There are a number of approaches to psychological work in small groups which place emphasis on feelings, group processes, member participation, here and now, and feedback. Their orientation and purposes are, in various degrees, educational, therapeutic, or simply experiential, when self-realization [36] and personal growth are the main goal. The experience is sometimes seen as an end in itself; the explosion of new groups during the 1960s and 1970s has resulted in poor practices [3,5,55,69,79,85,106].

Singer, et al. [85] applied the Tavistock approach to social systems [57,72,74,98], to the field of psychological work with groups. They emphasize the often overlooked role of management (or managerial functions of the leader) in various group events which are being offered to the public. In order to carry out his task, the leader must pay attention to the boundary control functions of the group event during its life as a temporary institution.

For the optimal outcome it is also necessary to obtain an accurate diagnosis of the prospective member's or client organization's needs and to establish a clear, explicit contract between the group leader and his clients. Responsibilities for outcome, accountability, and leader competence are of foremost importance.

Within the field of group practices, Singer et al. outlined six types of groups according to the event's task system and the psychological level at which it is pursued [85:137]; briefly summarized, these types are: (1) interpersonal learning groups, which are typified by the classical T-Group; (2) group process learning groups, as the Tavistock small or study group; (3) personal growth groups, encounter groups, and others focusing primarily on the intrapersonal process; (4) individually oriented change groups, represented by a variety of approaches to group therapy, where the therapist works in a dyad, with one member at a time, as in classical psychoanalytic group therapy [90], interpersonal/encounter [19], Gestalt [66], psychodrama [59], and bioenergetic therapy [50]; (5) group process-oriented change groups, including group psychotherapy, which differs

from the previous type by focusing on and using the dynamic forces unique to small groups in addition to viewing the members individually [7,11,13,27,74,100,106]; (6) focused criterion groups, concerned with a single target behavior — usually of addictive nature; examples are Phoenix House or Weight Watchers. The leaders utilize rituals of entry, such as confession and humiliation, which promote dependency and identification with the group. Leader-fostered group pressure, support, and sanctions serve to maintain the member's abstinence.

Although experimentation with group methods presents a number of practical problems, some of the newer approaches to groups may find a place within zeitgeist (which has been translated as the climate of opinion or the "current of credence [15]) of psychiatric practice.

Nevertheless, it can probably be stated that in the study of interpersonal aspects of behavior and the field of clinical psychiatry, no amount of research of therapeutic procedures or of epidemiologic phenomena as encounter groups will replace the underpinning of clinical practice which is provided by the basic science of the study of group behavior. The strongest contenders for providing the conceptual foundation of understanding groups are probably the Tavistock theory and the work of Kurt Lewin and his students. There remains, however, a gap between group therapists and group theoreticians.

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9

Social Aspects of Behavior

Harris Chaiklin, Ph.D.

Considering the social aspect in health is akin to Mark Twain's defining a classic as "a book which people praise and don't read." Social factors are important in creating health. What has proved difficult is to account for social factors in ways that integrate them into practice.

The Canadian Ministry of Health's "Health Field Concept" describes the elements in health which are social or are affected by society. It has four components: Human Biology, Environment, Life-style, and Health Care Organization:

The *Human Biology* element includes all those aspects of health, both physical and mental, which are developed within the body as a consequence of the basic biology of man and the organic makeup of the individual.

The *Environment* category includes all those matters related to health which are external to the human body and over which the individual has little control.

The *Life-style* category of the Health Field Concept, consists of the aggregation of decisions by individuals which affect their health and over which they more or less have control.

The fourth category in the Concept is *Health Care Organization*, which consists of the quantity, quality, arrangement, nature and relationship of people and resources in the provision of health care [2:33-34].

The reasons advanced by the ministry for adopting the Health Field Concept reflect assumptions and approaches which are used in this chapter. First, human biology, environment, and life-style are equal in importance to health care organization in developing health. Second, it is comprehensive. Third, it permits analysis to determine the relative importance of single factors and/or their interaction. Fourth, it facilitates identifying and developing relevant subcategories for each factor. Finally, by providing a different perspective on health it opens new lines for investigation [2].

The Health Field Concept demonstrates that each aspect of health behavior has multiple causes and all elements in the concept have a social component. This is true even in human biology where social behavior is not considered. Physical processes are influenced by social as well as emotional pressures. For example, the condition of a person who has a slight case of hypertension can be exacerbated if those around him reject him because of his illness; his condition will worsen if he works under great stress in an environment with high air pollution; his life will be threatened if he cannot make the changes in his life-style that his disease requires. Finally, he may die unless the health care organization is able to help him control his disease.

The physician must be able to evaluate differentially the relative contribution of various causes to a condition. He must be able to eliminate causes as well as to confirm them positively. For diagnosing the physical aspects of disease these procedures are well organized and selected in the standard nomenclature of disease. For psychological processes the Diagnostic and Statistical Manuals (DSM-II) [7] are available. There is no comparable system of social diagnosis. My approach uses the perspective of the physician as he works with a patient and focuses on social aspects as they directly or indirectly affect human biology. A complete system of social diagnosis is not provided. The key question to be examined is: How are individual social processes shaped by social patterns?

The simplest and most widely used definition of social is that it is the behavior that results when two or more people interact. It can take place alone or with others. Behavior is social when others can understand the action and make appropriate responses if they desire. It is behavior that is relatively uninfluenced by internal needs and motivation. Animals engage in social behavior. Where humans are concerned social behavior is patterned and reflects commonly accepted ways of doing things. It follows social rules and definitions, which are called *norms* and *values*. Interaction refers to the mutual awareness and intersubjective agreement that are present when people agree about what is happening. It does not necessarily mean people approve of events or will follow the rules. Animals cannot interact. Humans do. Even when people are alone they can reflect on their actions and plan behavior to anticipate another's response.

Behavior which is patterned and breaks the rules of social order is considered deviant, but it is still social. One has only to think of the extent to which the law enforcer needs the lawbreaker to become aware that there are elaborate rules to the game of crime. Idiosyncratic behavior is not social unless its originator can convince others to accept his rules and definitions. Goffman says that when idiosyncratic behavior and deviant behavior are combined they produce a social interpretation of psychiatric symptomology. Explanations for such behavior can be found in the social scene and the person's *biography* [8]. There is another possible explanation for idiosyncratic behavior which is considered deviant — that the person may be correct but is unable to change the definition of the situation to get his views accepted. Colby, in recounting the history of Semmelweis, concludes: "We learn over and over from history that we do not learn from history. To compel assent from scientists, an explanation must have more than correctness. It must have appeal" [7:50]. Learning to identify the correct explanation of behavior is not an easy task — there are no social practitioners to ease the way, and there may never be.

The social covers a continuum that ranges from the all-inclusive, abstract, and impersonal social fact to a social individual acting alone or with others. This continuum reflects the many different social contexts which apply to both individual and group activities. The social aspect of behavior includes : (1) social climate; (2) social institution; (3) social characteristic; (4) social category; and (5) social perception.

Social climate contains those social facts that help define a situation. For example, the unemployment rate is something that affects the way many people think, feel, and behave. It is there to be reacted to, but few individuals have the power to influence the rate meaningfully.

Social institution is a commonly recognized unit that functions in society and includes such things as education, medicine, and the family. As with social climate, institutions change slowly.

A *social characteristic* is a social label, of which there are three types: those with which one is born (ascribed), those that are acquired (achieved), and those that combine ascription and achievement. Age and sex are examples of ascribed characteristics. If people know the norms (rules for behavior) surrounding age and sex they know most of what social science has to say. An acquired characteristic is education — anything beyond zero must be earned by the person. An example of a mixed type is social class — one is born into a social class but has the capacity to change it or have it changed for him during the course of life.

Social categories are the forms by which social behavior is expressed through conventions which are recognized by at least some segments of society. They range from formal settings to spontaneous expressions of emotion. If a person wants to be understood he must behave in ways that follow commonly accepted social definitions. In a large and complex soci-

ety not all recognizable subgroups share the same social definitions. It takes skill and thought to recognize and distinguish between behavior that is different, that which is deviant, that which is pathological, and any combinations thereof.

Social perception is a concept that differs from the others because it contains a methodology. It is the process by which one checks out and orients himself to others and their expectations. This does not constitute the only determinant of behavior and people do not always meet their own and others' expectations. Still, one of the necessary conditions for maintaining social contact, even if only negatively, is to go through some process that allows the participants in interaction to define their situation in a way that meaningfully includes the other.

A similar analysis can be made for the key concepts in the other social sciences: anthropology, psychology, history, economics, political science, and so on. These other social sciences provide the substantive content which makes the social understandable, and they have varying degrees of import for each of the social aspects that have been presented. For example, culture consists of materials, ideas, values, and ways of doing things which characterize a society and which are passed on. Culture is neutral in that it contains adaptive and maladaptive elements. It is not neutral in that what is valued in a culture becomes translated into norms. These rules for behavior are what are used in social activities. In the real world the social cannot be understood without reference to the cultural.

Routine checking for the effects of social factors should be part of the process of differential diagnosis to expand the concepts of health and sickness. As Knutson says: "A rise in temperature or pulsebeat, the swelling of tissues, changes in the composition of blood cells or urine, fatigue and other medical cues to illness may not by themselves mean illness for the specific individual. The line between wellness, malingering, and illness is in good part a socially drawn line. Aches and pains that are not experienced as out of the ordinary for oneself and for one's social colleagues may not be perceived as illness" [11:48].

Knutson points to the social aspect in defining disease. Is a forty-year-old man sick if he has a mild case of diabetes completely controlled by diet and a family and life-style that support his regime? Is a man well if he does not have diabetes but is fifty pounds overweight, is in a sedentary occupation, complains of fatigue, and has a family and life-style that foster ill health? In effect, the man with diabetes has a physical condition but is well and the overweight man has no recognized diagnostic entity but is not well. Further, if the man with diabetes experiences a flareup of his illness his absence from work will be legitimated by the "diagnosis." The obese man cannot legitimately take time off from work to lose weight, in most instances, no matter how dire the physicians' predictions.

This is not the time to attempt to resolve ultimate questions about the nature of man, sickness, and health. The illustration is used to point out that in both instances something about the person's behavior could influence the physicians' response to the situation. Lisansky has suggested ways for sorting out the psychological from the biological elements in such a situation [13]. The same thing can be done for social factors. The information, especially for hospital patients, is usually there. It can be organized for use by turning the components of the social into a series of general questions. Each component of the social can contribute to understanding and treating the patient. Each question can be explored in greater detail:

- 1 What is happening in the world around the patient?

This question reflects the social climate and corresponds to the environment in the Health Field Concept. The social climate is the element farthest removed from the person and the disease process. A knowledge of the climate is important because of social perception. People tend to act on the basis of what they believe. The physician can urge the patient to change his job but it won't have much effect if the patient believes that a high unemployment rate makes this impossible. Many physicians assume that production-line jobs are boring and contribute to the exacerbation of stress-related disease, but the men who work on the lines do not support this view [20].

Beyond knowing the facts of the social climate one cannot either assume or discount their effects without checking with the patient. In general most people will respond to everything you ask them, especially if they think you are trying to help them. The skill lies in knowing enough about what is happening in the world so that the right questions are asked at the right time. This general procedure should be followed for all elements in the social aspect.

- 2 What is the nature and quality of the patient's institutional participation or nonparticipation?

Institutional behavior is more directly related to health behavior than the social climate. Those things in which a person does not participate may be as important as those in which he does. For example: most hospital admission forms ask for a patient's religion; they seldom ask for his degree of attachment. There are times when a physician can secure a patient's cooperation in a life-saving process by calling on a clergyman. There are other times when it would be better to call in a fortune teller.

The institutional component contains two subcategories which

should always be explored further: The first corresponds to health care organization in the Health Field Concept.

2a How does the health care organization respond to the patient?

The nature and quality of a patient's participation or nonparticipation in the health care institution are often dependent on the characteristics of that institution and the response of its personnel to the patient. In a formal sense the patient has the least power of any member of the health care organization. As a result he is often blamed for behaviors which are instigated by members of the health care organization. Outpatient clinics overschedule by 100 percent because it is said the patients are not motivated to take care of their health. Yet when clinics pay attention to people and their needs and make even minimal changes in their procedures it is possible to dramatically improve clinic utilization rates [24].

The second category of institutional behavior that deserves special attention is the family:

2b How does the family (and significant others) respond to the patient?

The family, unlike all other institutions, does not have a formally organized structure that exerts influence on large numbers of people. This means that one has to be careful in imputing cause for social deviance to the family in general or to basing hope for positive conditions on a change in the family as an institution. The functions of the family as an institution are broad, abstract, and extremely slow in evolving. Each family must be assessed on its own terms.

What a family thinks and believes about health and health practices, especially where children are involved, is often directly related to the extent to which they seek health care and comply with the physicians' instructions [6]. The family may constitute a separate area of study for organizing information on social aspects of behavior. Like all things human, what is considered appropriate family behavior changes over time and differs by subgroups. In the middle class it is now assumed that children will be planned and that it should be fun to raise them. These expectations are not reciprocated in the blue-collar world [26].

Finally, one of the newest areas of medical practice is the specialty of family medicine. Although it is doubtful that large numbers of physicians will ever see and treat the family as the patient, the movement will help many physicians to see illness in a family context. Family practitioners are developing many excellent ways of identifying family problems [22].

These reflect an understanding of social factors and can be used with individuals as well as families.

- 3 What are the relevant social characteristics the patient does or does not possess?

The social correlates of disease are pervasive and have been extensively investigated. No aspect of health behavior is without a social correlate. For example, the onset of cervical cancer is associated with the age of beginning sexual activity and other practices related to social and cultural backgrounds [16]. Fortunately, many norms for diagnosis and prognosis are often reported in terms of social characteristics. This area of social aspects is almost an automatic part of practice. It is necessary to keep up with new knowledge and to look at factors beyond age and sex. This is especially true of social class where standards of behavior and perception differ among segments of society.

Finally, the patient's negative social characteristics are just as important as his positive ones. If a man does not like his job, if he is unemployed, or if he thinks his job reflects failure on his part, his feelings may be related to the onset and outcome of his illness.

- 4 Does the patient behave in ways that are expected and that other people understand?

All people will not behave the same way. The combination of social characteristics and social categories is the equivalent of the life-style element in the Health Field Concept. In a heterogeneous society this means that there will be many different ways of expressing common behaviors. Knowledge of what is expected provides a base for assessing difference. For example, poor people will often appear to be unconcerned about their physical condition or will passively comply with medical orders. The unconcern is often interpreted as reflecting a lack of motivation on the part of the patient and the compliance is seen as cooperation. Both interpretations can be wrong. They also can be socially patterned ways of expressing anxiety — patterns specific to that subgroup in society.

So powerful are the effects of social categories and their cultural variations that they affect biological behavior. For example, the capacity to experience and react to pain is about the same in all racial and cultural groups. Despite this, different cultural groups display a wide range in the degree, extent, and manner of reporting pain [27].

Differences in expressing behavior go beyond the usual cultural subgroups and show up unexpectedly. This aspect of the social becomes especially significant when considered in relation to disease. For example,

chronic illness can be said to constitute its own subculture. Roth has shown that under such conditions the social category of time is subject to specific alteration in perception by both patients and staff and changes the way physical findings are interpreted [18].

Powerful medical myths are perpetuated through lack of knowledge about the usual ways people behave and what some of the specific variations are. Becker has raised questions as to whether LSD ever induced a psychosis. He notes that drugs such as the adrenocortical steroids also induce psychoticlike reaction. Becker believes the physician plays a key role in such situations because he has a choice of interpreting it as a transient reaction that will go away or confirming a diagnosis of psychosis [3]. This latter choice amounts to a form of mass hysteria because the interpretation helps the symptoms persist [25]. The social climate becomes one where people will interpret all behavior as confirming the diagnosis.

People encounter some of their most painful and difficult moments in life when there is no agreement on how social behavior should be expressed. If a physician cannot correctly interpret the information he gets from his patient his ability to use his knowledge in the service of the patient is severely limited. To rely on common expectations regarding the expression of behavior and its subgroup variations does not guarantee infallibility. Knowledge of the meaning of social categories provides one additional step in the process of differential diagnosis. It should alert one to the fact that textbook norms for reporting behavior must always be modified in terms of the individual and the facts of his social and cultural life. It is fortunate that most of the time people express, either verbally or non-verbally, what is bothering them. The trick is to hear them.

5 How do patient, physician, and significant others understand each other?

To go beyond the rules for expressing behavior to what people actually do in evaluating themselves and others is the process that makes social perception important. This aspect of social has no counterpart in the Health Field Concept. Social perception is the one aspect of social that cannot be avoided. One may neglect to get or act on social information and still find ways to help a patient. If the cooperation of the patient is necessary for treatment the chances for success are reduced if social perception is not taken into account. If the path of social perception is not clear people experience difficulty in understanding what is happening. When people do not know what is going on they invent answers. Roth puts it this way: "People will not accept uncertainty. They will make an effort to structure it no matter how poor the materials they have to work with and no matter how

much the experts try to discourage them" [18:28]. When participants in interaction have different definitions of the situation they increase the chances that the interaction will fail. Regardless of the facts, if one is not prepared to listen to and understand the way his patient looks at the world his chances of influencing the patient to move toward health are materially reduced. This does not say that one must accept ways of defining the situation that do not promote health. It does say that it will help to understand the patient's social pressures and expectations [5].

Unlike all other elements of the social aspect, perception may be changed. If people are ready to accept new information and act on it social perception can change quickly. Ruesch says: "Unless one person *attributes influence* to another, the other does not possess any power over him. The act of influencing, then, is based upon a person's skill in soliciting from others certain specific attributes. The exertion of influence thus is as much concerned with audience response as it is with the setting in which the process takes place" [19:144]. Getting audience response is not easy. It requires putting aside the assumption that just because a person comes to the doctor he should automatically do everything the doctor says. One of the simplest ways of turning interpersonal perception into interpersonal competence is by providing patients with necessary information and making certain that patients understand the information.

It seems probable that social perception and ways of turning it into social influence will assume increasing importance in the future. For one thing, many disease processes are at least theoretically preventable. Gordon says, "The diseases of the day are strikingly man-made, commonly through inept adaptation, often through willful error" [9:354]. For another, most diseases require the cooperation of the patient either to achieve a cure or to lengthen life. Securing that cooperation requires mastering the processes associated with interpersonal perception.

METHODOLOGICAL CONSIDERATIONS

If this chapter were on the psychological aspects of health behavior the same elements would be used, only they would be presented in a different order and with a different emphasis. Lipowski does just this in a sophisticated explanation of the psychological aspect of disease:

- 1 Intrapersonal factors, which include biological variables, such as age, sex, and constitution; and psychological, i.e., personality in all aspects, past experience with illness in oneself and others, etc. Both these classes of variables inherent in the person include his enduring psychobiological predispositions and

states as well as those obtaining at the onset of illness and throughout its duration.

- 2 Interpersonal factors, i.e., nature of patient's relationships with other people, especially family and health professionals both before and during his illness.
- 3 Pathology-related factors, i.e., spatiotemporal characteristics of disease or injury and the subjective meaning they have for the patient in relation to his past history, knowledge, values, and current adaptive capacity.
- 4 Sociocultural and economic factors, i.e., values and attitudes toward illness as such and specific diseases prevalent in the patient's social milieu, beliefs about medical care delivery and its practitioners, economic consequences of illness for patient, etc.
- 5 Nonhuman environmental factors, i.e., physical aspects of environment in which patient lives during his illness [12:7].

Lipowski's approach is based on the assumption of a unified theory of disease. There is no unified theory of social behavior so the meaning of any social fact depends on the framework and the theory used in interpreting that fact [21]. For example, one of the most popular ways of looking at illness in social terms is to classify it as a form of deviance [15]. This interpretation is in terms of structure function theory, which is often called social system theory. This theory is often criticized because it does not effectively deal with change in a positive way. Other sociological theories can look at illness as a normal life process reflecting the outcome of conflict or a failure in the definition of the situation. All theories probably are operating in any situation and it is a diagnostic problem to decide which, if any, is relevant. The presence of different theoretical interpretations of the social aspects of health behavior should not be a bar to their use. It just takes practice to learn to identify and sort them out.

A second important consideration is to distinguish between the social and psychological aspects of behavior. In general, it is much harder to comprehend or intuit the social as compared to the psychological. One reason is that since the physician usually works with an individual he will find it hard to deal with facts that are not tangible and immediately present. A second is that where individuals are concerned there is a tendency to interpret manifest behavior in psychological terms. If, for example, a person with hypertension is under orders to lose weight and doesn't, even though he manifests anxiety about it, the physician usually explains such behavior in psychological terms. Yet, each of the components of social that have been identified could also contribute to explaining the lack of weight loss — the social climate may be one that encourages food consumption (we count "Big Macs" by the billion); the person

may participate in religious or political institutions that encourage food consumption; he may belong to a social class whose life-style centers around family dinners; he may be from a cultural group that values weight. The combined weight of these factors may make him unable to change his own or others' definition of the situation.

What distinguishes the social from the psychological is not whether an individual or a group is involved but the theories and concepts used to interpret behavior. Sociology explains behavior in terms of norms, roles, and international structures. Psychology explains behavior in terms of needs, drives, and tension reduction. The perspective used provides the basis for interpreting the behavior. The issue is not whether a social or psychological perspective is better but how the relevant approach to the medical problem is identified. The distinction between the social and the psychological is analytical. There is only behavior. Every action has a social as well as a psychological element [4].

The essential aspects of social are (1) Social factors are real. (2) Social factors exert an independent effect on human behavior. (3) On a common sense basis it is much harder to see social than psychological factors. An elemental understanding of multiple theoretical perspectives, social factors, and social science methodology are necessary for an understanding of social aspects. First, many social findings are associations which are often confused as causes. The long controversy about the relation between cigarette smoking and lung cancer is an example of this. Volumes were filled with argument over whether these findings occurred by chance, whether they both had a common cause, or whether other factors could explain away the association or modify it in other ways [17].

Another characteristic of social science is that most of its findings are generalizations which apply to groups and not to individuals. It may be true that cigarette smoking is a cause of lung cancer in a certain proportion of the population. It is equally true that for large numbers of people the combination of biological, psychological, and social factors in their life makes this a cause which is not significant to them even though they are heavy cigarette smokers. Generalizations which apply to groups can only be applied to individuals as probability statements, which are useful. The problem is that when social factors are examined as causes of biological conditions or when biological conditions are examined in epidemiological contexts it is seldom that any single social factor has a high enough probability of causing an event. It may be true that smoking is a real factor in lung cancer; it is equally true that most smokers do not get lung cancer. The obverse of this problem occurs when certain biological factors are examined in a social context. It is true that among violent prisoners there is a greater than normal proportion of men with an XXY chromosome. At the same time one and one-half million law-abiding citizens with this factor

are made to worry unduly. The same happens with certain screening programs for genetic defects. To carry a trait does not mean that it will be manifested and biological factors do not create social behavior.

Finally, the social aspect is often used to superficially describe the patient in terms that rationalize the failure to identify and or engage in changing social perception. In effect the patient is stereotyped. If a family is headed by a female, is large, is receiving public assistance, and has all the other characteristics associated with poverty, one is not justified in saying that these characteristics cause the family to be unmotivated or unable to comply with basic and necessary health procedures. This is plain slippery thinking. It reduces all the complex causes of medical compliance to the single presumed psychological cause of motivation and supports this idea with the assumption that there is something about the nature of poverty that leads poor people to undervalue health. This is simply not the case. Given reasonable access to medical care most people show about the same high degree of interest and compliance in health and health care [23].

The social aspect in health approach provides an expanded definition of the physician's role and what he can do to promote health. Illich provides a concise summary when he says: "The normal consumer of medical care just does not and cannot exist. Nobody can know how much health care will be worth to him in money or pain. In addition, nobody can know if the most advantageous form of health care is best purchased from medical producers, travel bureau, or by renouncing work on the nightshift" [10:68]. It is not up to physicians to make decisions about the optimal way for a person to pursue health. He does have an obligation to be aware of the alternatives and present the patient with a choice. There are people who would prefer continuing to see the doctor with their sleeping and digestive problems to giving up work on the night shift.

The one aspect of social that can be changed in the short run is social perception. The start of this change is always to take seriously what the patient says. Even under the most life-threatening situations, as when a patient must lose weight because of a heart attack, people will report difficulty in changing behavior because of deeply ingrained lifelong social and cultural ways of behavior. Society and its culture simply do not change rapidly, even under conditions of revolution. The physician is left with a paradox: He cannot change the large-scale social aspects of behavior, yet he must take account of them and try to change social perceptions where appropriate. Marinker put the nature of the struggle this way:

Will these behavioral sciences help the future doctor be a better clinician? In part the answer must be that they will provide him with frameworks of reference . . . But these sciences, sociology, anthropology, and psychology, are what Thomas Kuhn calls "primary paradigms." The doctor who re-

sponds to a patient suffering from diabetes does not do so with the primary paradigm of biochemistry, he uses the secondary paradigm of clinical medicine: biochemistry provides him with recipes or explanations, but it does not provide him with a definition of problems or their solutions. Similarly with the behavioral sciences. What is missing so far from the medical school is the appropriate clinical discipline of whole-person medicine [14:118].

The answer to the question of how individual social processes are shaped by social patterns is that it is done through social perception. To be able to define the situation is one of the greatest powers in the world. The absence of a smooth system for integrating social aspects into diagnosis and treatment should not deter their use, if for no other reason than the attempt must be made.

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10

Cultural Aspects of Behavior

Jay Nolan, Ph.D.

To the student of human behavior, there is a variety of concepts derived from anthropology that are of value in understanding both normal and deviant social behavior. When taking a psychiatric history, it is important to include such concepts as cultural relativism, ethnocentrism, egocentrism, enculturation, socialization, the functional value of culture, religious beliefs and taboos, child-rearing practices, and patterns of authority. These are just a few of the topics that are important in evaluating patient behavior and learning more about one's own ethnocentric bias toward what is culturally appropriate and inappropriate behavior.

To an anthropologist, the term *culture* generally refers to the ways of thinking and behaving that are characteristic of a particular population or society. Culture, therefore, is composed of such things as language, knowledge, laws, religious beliefs, food preferences, music, work habits, and child-rearing practices. Although most people assume that America is a great melting pot with one universal culture, American society actually comprises a diversity of ethnic groups and a large number of subculture and social class groups with great variation in their patterns of behavior. It is important in taking psychiatric histories to know as much about various cultural behaviors as possible to be able to separate it from the patient's personal psychodynamic problems.

ETHNICITY

The myth of the melting pot suggests that Americans share one common set of customs, beliefs, and behaviors. It assumes there is a common American culture. There has been a recent revival of ethnic identity and the acceptance of the idea that America is composed of a plurality of cultures (e.g., American Indians, Blacks, Chinese, Filipinos, Japanese, Mexicans, Puerto Ricans, Europeans [1]).

It is well known that there is a higher percentage of poverty among rural white families than among any other social or ethnic group. Other subcultural groups could be added: white migrant farm workers, poor white families in Appalachia. These families might add at least another 10 million people to the total.

In 1970 America's population stood at 203 million people. The above approximate statistics suggest that more than one-half the American population has had a close family and cultural experience that was distinct and different from the standard white Anglo-Saxon Protestant model.

It is important to emphasize that out of the 60 million European immigrants (identified in a study on ethnicity by the Jewish Anti-Defamation League), many were able to acculturate more easily than first-generation immigrants. Because of the lack of distinctive racial characteristics, such as skin color, their children are usually able to assimilate and pass into patterns of American cultural behavior. With more than one-half of the American population being socialized in a cultural belief system different from the upper-middle-class background of most medical students, it seems imperative that doctors learn as much about cultural behavior and its relationship to sickness and health as possible.

CHILD-REARING PRACTICES

Child-rearing practices, socialization, and enculturation happen both formally and informally. As the child is growing up, it is happening in every part of his experience and environment. It occurs inside and outside the home, in areas of work and play, at school, with siblings, friends, and extended kinsmen. In taking a general medical or psychiatric history it is important that the clinician inquire about the social class, occupation, religion, and ethnic background of the patient. Even if the person has broken from his family's traditions it is important to know the extent of different cultural beliefs and values that the patient has about his lifestyle, illness, its cause, and the appropriate form of treatment. Knowledge about such beliefs is often very important to the physician helping the patient to recover.

Think for a moment of the different social values and world views among adults who were brought up in a poor Chicano (Mexican American) family, a poor Greek Orthodox family, a strongly religious Pentacostal family, a devout poor Orthodox Jewish family, a first-generation rural Italian Catholic family, a wealthy upper-class Boston Irish Catholic family, a poor rural white Appalachian family. The transmission of social beliefs and values through the generations has a great influence on the family and social background of the growing child.

Modern technology — radios, movies, records, and television — has partially socialized American children since the 1950s. Similar media are having an impact in socializing children around the world. Culture is transmitted in so many ways that a child is socialized and enculturated unconsciously into the basic belief system of his extended family and its social group. Each generation passes on its cultural beliefs as the society's heritage and sacred knowledge. This cultural information is in the form of basic values and beliefs, ideas about family, religion, and ethnicity. The society emphasizes the unique appropriateness of its particular culture and community group.

Before the infant is able to speak, he begins to imitate the sounds of his parents. He mimics body movement, facial expressions, and other subparts of communication. Before he knows a single word he is already forming word patterns that mimic the cultural form of language and its structure. The child's first years are a time of intense motor, sensory, and psychological stimulation and development. But at the same time, these developmental experiences are being socialized through one's family and cultural definition of what it is to be a member of one's society. A child of American or European racial heritage raised from infancy by a rural Japanese family would not be Western in behavior. As an adult, he would behave in a Japanese adult cultural style. His behavior, attitudes, body movements, language, and beliefs would be Japanese. For although he may have the racial background of an American, his total enculturation would be that of rural Japan. He would have no other point of social cultural reference.

The young child is also rapidly socialized into appropriate sex-based masculine and feminine role behavior. In America many small girls are still taught to be passive, pretty, quiet, submissive, polite, to share, and to play in roles that have traditionally been expected of mothers and women. These girls play make-believe games that mimic their mothers' role behavior. This play imitates food preparation, sewing, caring for children, cleaning the house.

Young boys are socialized into traditional masculine roles and behavior: to be leaders, aggressive, strong, competitive, impervious to pain, never crying, never showing feelings. They are taught to fight back when

attacked and not to be a "sissy." Young boys are expected to do the kinds of things that men have traditionally done, including climbing trees, playing competitive games such as baseball or football, and working with tools.

Although new expectations of culture-free socialization have occurred through the women's liberation movement, the pervasive definition of what is masculine and what is feminine transcends individual family preferences and is heavily influenced by play groups and peer pressure, by teachers and playmates at school. In spite of the philosophical beliefs of parents, it is extremely difficult for a young child to become totally androgenous in his role behavior.

THE RESISTANCE OF CULTURAL BELIEFS TO CHANGE

There is a basic belief in some segments of child psychiatry, child development, and related fields that much of a child's basic personality has been formed in the first six to eight years of his life. It is also thought by many that some of the strongest experiences and events that the child encounters will remain with him and influence much of his later personality and behavior. It is also implied that deeply disturbing experiences in early childhood and later pathological behavior are often difficult to change. In short, what a child experiences in his first six years of life is very resistant to change in later life.

The same can be said for cultural behavior. By the time a child is six to eight years of age he has learned and internalized most of the fundamental components of his society's culture. He has learned the language and grammatical structure. He has learned appropriate age and sex-role behavior. The child's body movement, posture, and nonverbal behavior is modeled after adult behavior. The child knows much of the basic laws, beliefs, values, and social etiquette of his society. Because of the deeply ingrained way that culture, language, and beliefs are so easily enculturated as the child develops, it makes cultural change — very much like changes in neurotic behavior — difficult in adulthood.

BELIEFS AND VALUES

Every social group defines its identity and values as unique and appropriate to itself. This is built into the society's religion and its definition of supernatural forces. These beliefs are taught to all children and members of a cultural group to differentiate their behavior from those of surrounding

social groups that behave in different ways. In learning one's culture, one becomes so involved in learning one's own appropriate cultural behavior that one becomes ethnocentric in understanding the behavior of social and ethnic groups different from one's own.

This becomes particularly important in regard to religious beliefs and explanations about supernatural forces. From the earliest days, children wonder where they came from, why their people are different from other cultural groups, what happens when pets, animals, or relatives die. Children ask about the stars, sun, and moon, who grows the trees and plants, where automobiles and roads come from. There is concern about the universe, about the child's family and the social order as the young child perceives it. This is explained within the larger set of religious values, beliefs, and the cultural ethos of the specific society of which the child and his family are members.

An example of such an American cultural value is the "American Dream" that any person can become president, that any person can attain any goal that he sets for himself — the Horatio Alger legend. There is an assumption that any poor person can work very hard and, with good fortune, become rich. Another American value requires young people to be very competitive. They should be upwardly mobile and seek a superior job and higher education. If a young person attains a job one step higher up the social ladder than his parents' occupations, he is truly a successful American. There are social class differences in regard to such values. Some investigators suggest that lower-class families do not expect the future to be very different from the present. In the culture of the poor there is little emphasis on planning for the future; much behavior is centered on experiencing pleasure at the present moment. This is in contrast to upper-middle-class American values that emphasize planning for the future and for one's later security.

There are many other differences. For example, the American middle-class person should be competent, competitive, and resourceful. However, among lower-class men, for example, masculinity and virility are important class values. In lower-class families, family authority structure tends to be vested in the males, who have the traditional obligation and right to make decisions and pronouncements on behavior.

Schneider and Smith [2] found differences between middle- and lower-class family life styles in regard to participation in family activity. In middle-class families emphasis is on an enduring solidarity between husband and wife, which is extended to interest around the home, in the children, and in leisure and family activities. Middle-class people are expected to do things with and for the family unit, a value that is highly stressed. However, in lower-class families stress is placed on the solidarity of the mother-child relationship rather than on the husband-wife bond. In

lower-class families a husband or other male figure need not be in residence to constitute a household unit. It is understood that in lower-class households, members can depend on help, cooperation, and attention from a variety of friends and kinfolk in time of need and crisis. In middle-class nuclear families, where self-sufficiency is stressed, a very different pattern of cooperation may be observed.

So there are social class differences in the definition of the boundaries of lower-class households, which are more fluid, and within this structure a variety of persons, both kinfolk and others, can be absorbed or accommodated into the family structure. Schneider and Smith also illustrate differences in lower-class family patterns in male-female relationships that are not present in the middle class. They observe that men and women tend to have friends of their own sex with whom they interact more frequently than they do with family members of the opposite sex. Male-female relationships are seen to be less solid and enduring than female-female or male-male relationships. This is in marked contrast to the middle-class emphasis of doing things with and for the family unit. Individualism is stressed within the lower class and is expected as a cultural value. The idea that a person has the right to affiliate or disaffiliate with the family is an accepted cultural pattern. A working wife, for example, has the right to decide whether she wants to spend her money on herself or on her family. Joint checking accounts are generally a middle-class phenomenon.

CULTURAL PATTERNS AND CUSTOMS

Cultural patterns of behavior have both covert and overt functions. Such a distinction in understanding cultural behavior becomes important for the clinician when he is taking a history or working with a patient or the patient and his family. Childhood games that are often played by children between six and ten years of age have the overt value of providing recreation, entertainment, and social experience. Their overt value is that the children are learning the rules of behavior. However, their covert value is that they are also learning their social place among their peers.

In hospitals that serve a large Puerto Rican population, a form of female hysteria is often seen among widows and female relatives shortly after they receive news of the death of a loved one. This frantic activity and uncontrollable crying may go on for a number of hours. Concerned relatives often bring such a person to the emergency room, where this behavior is misdiagnosed on the basis of middle-class norms for interpreting such behavior. Such hysterical crying is normal for large segments of Puerto Rican society. Its overt value is to allow the person to grieve and

proceed with her bereavement process. The covert value (indirect) is to have those in her social network begin to protect and care for her so that she will have social support and assistance during her bereavement experience.

It is not always easy to understand the covert forms of behavior. It is extremely difficult for a person to step out of his own ethnocentric definition of cultural behavior and begin to understand the covert meaning of the behavior from a different cultural or ethnic group. When one asks people to explain the normal behavior in their culture in a situation, they often do not know or cannot formulate an answer. If one asks a person the social or cultural meaning of a certain custom, often the patient, informant, or relative is not fully aware of the social importance of such behavior and is unable to explain its covert meaning, or perhaps even its social function. The clinician needs to learn how to collect both cultural and psychodynamic information and to be able to interpret both its covert and overt meaning.

Another important component of cultural behavior is that every society has culturally defined ideal expectations about behavior, and then actual, or real, behavior, as displayed by what actually occurs. If one were to ask members of a family or a society in another country how they would behave in some situation, the most likely answer is the ideal one, or the answer that the informant thinks the questioner wants to hear. But in reality, for much of all cultural behavior, there are both the ideal and the actual way that people behave.

For example, an ideal American cultural value is that the speed limit is 55 miles per hour and nobody should exceed that limit. The real cultural behavior is that most persons do exceed the limit by driving at 60 to 65 miles per hour. Another ideal American value is that there should be no extramarital sexual relationships. The real cultural behavior is that in at least half of all marriages, one or more of the partners has had extramarital sexual relationships. It is important for the clinician to keep the cultural ideal behavior, as well as culturally permissible actual behavior, in mind when counseling patients.

LIFE STAGES AND RITES OF PASSAGE

Eric Erikson developed the idea of the seven basic developmental stages of life through which people pass. In the 6,000 societies around the world the stages along one's life arc and life experience are divided in different ways. Societies all over the world often mark the arrival at certain life stages with a rite of passage and with a variety of ceremonies. These are transitional phases — the beginning of life, the end of life, and those

things that happen in between. American society seems deficient in such rites of passage, although there are more than one recognizes. Many important social and cultural functions are served by ceremonial activities. Bridal showers and bachelor parties, wedding receptions, christenings, confirmations, and bar mitzvahs and bas mitzvahs in the Jewish tradition are some of the better-known American events. Funerals and memorial services are final rites of respect for persons.

It is no surprise that there is a tremendous diversity in American behavior during death, grief, burial, and bereavement. When various medical students — from an Irish Catholic background, an Orthodox Jewish tradition, a Midwest rural Protestant experience, a rural southern Baptist black family, an urban West Coast Unitarian family — explain the cultural rules for family and individual behavior attending reactions to death, they are quite surprised by the diverse customs. There are different cultural rules for the care of the body, forms of the formal funeral services, forms of informal family activities, eating, drinking, and talking, patterns of burial and disposal of the body, proper forms for male and female expression of grief and bereavement, and so forth. It is very important for the clinician to understand such cultural patterns surrounding death and the expression of grief and emotion.

There are large numbers of other American ceremonial activities, such as fraternity and sorority initiations, initiations into occupational, professional, or specialized religious organizations, graduation ceremonies from kindergarten through high school, college, and even professional degrees. Ceremonies recognizing achievement occur at recitals to mark the performance of students of music and dance. Receptions for artists and sculptors are a community's way of celebrating an individual's creative endeavors. Various Masonic and similar fraternal lodges and groups such as the American Legion, Veterans of Foreign Wars, and equivalent women's organizations also have rank orders of membership and initiation ceremonies into such secret and special groups.

In many traditional tribal societies, there are rites at puberty for young men where they often go through a painful initiation. Sometimes circumcision or scarification of the body are performed to prove that the young man is no longer a child but has passed into adulthood. In many traditional societies, similar rites are carried out when girls reach puberty.

In some societies, when young women reach adolescence, painful ceremonies that may include clitorrectomy are performed. Scarification may also occur as a sign that the girl is now a woman and an adult. Being initiated into the status of an adult woman is an important rite of passage in many societies around the world.

Many social observers have pointed out that in American society the achievement of a driver's license is equivalent to being declared a young

adult. The license legally grants the teenager the mobility and independence of adults and allows the teenager to be more remote from his family and local neighborhood.

With so many variables to be considered, it is increasingly important that all helping professionals learn as much about cultural behavior as possible.

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11

Family

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To trace the family's role in mental health, we must briefly reflect on the meanings of mental health and illness. For even though these concepts may seem self-evident, at closer inspection they become problematical, as T. Szasz [22], for one, has shown.

Szasz called mental illness, as defined under a medical model, a myth. While this needs to be disputed, there can be little doubt that so-called mental symptoms — such as anxiety or delusions — cannot be simply equated with physical symptoms. To be sure, all mental activities imply physical substrates or processes — for example, speaking or writing imply complex biochemical processes in the brain and other parts of the body — but these substrates are most often not relevant to our understanding of human conduct, motives, and adaptation. Rather, to grasp what is ordinarily called mental health and illness, we must look at how we chart out (or fail to chart out) our emotions and needs, how we learn from and relate to others, how we deal with conflicting values and intentions, how we respond to societal demands, in brief, how we cope with life's stresses and problems within psychosocial contexts. When we cloak these stresses and problems in quasi-medical jargon, we create major conceptual and ethical muddles and we lose sight of the psychosocial contexts. To minimize these pitfalls, the concepts mental health and illness will be used broadly in reference to how man relates to, and depends on, his most central psychosocial context — *the family*.

The term *family* does not pose problems of definition comparable to that of *mental illness*. However, it too requires reflection. Ordinarily, when we talk of *the family*, we have in mind a (more-or-less) middle-class, (more-or-less) nuclear, and (more-or-less) intact American or, at least, Western family. But, clearly, such family is by no means typical for other ages and cultures. Even in our own culture, many families are not middle class, are not nuclear — comprised of merely two generations — and are frequently not intact. With a wider historical and cross-cultural perspective as, for example, provided by W. Stephens [18], the nature and meaning of the family varies ever more.

To stake out a framework within which we may discuss the family's nature and meaning, let us first briefly consider how the family serves man's quest for survival — a quest that relates centrally to his mental health and illness.

Man differs from all other animals in that he, due to his large brain, is highly intelligent and also instinct-open, that is, is not programmed by innate and inflexible behavior coordinations. These two features, above others, account for his enormous capacity to learn, and hence to change habits, assumptions, and values which conflict with his survival needs. His long and intimate dependence on a parent (or parents) crucially facilitates such learning. Typically, it occurs largely outside of his awareness in complex processes of identification and/or imitation and in a family context.

It appears that from the time that *Homo erectus* emerged on the scene approximately 1.2 million years ago, the family had become a part of human life. Without doubt, it gave them many advantages. It provided a matrix for turning into interweaving survival assets intelligence, instinct-openness, and long-term mandatory dependence on parents. It protected children and allowed them to learn in the context of (relatively) stable, intimate, and dependent relations. Furthermore, the organization in families allowed people to pool their resources in small and hence flexible groups, while it yet allowed for a division of labor — as when modern men hunted and women cared for the children, cooked, mended clothes, or manufactured tools. And, while the family thus served the needs of its members, it also served the needs of the larger society which, in turn, assisted the survival of the species.

The family — as an institution and way of life — seems to have become more rather than less important as societies grew more complex. For with the growing societal complexity grew also, so it seems, the complexity of functions the family had to fulfill. And the more these family functions grew, the more difficult — but also the more important — became their reconciliation with each other and with what society demanded, yet the more also grew the likelihood that all these functions could not be

reconciled within one given family. As a result, many people became dissatisfied with the family in one form or the other. But, clearly, to be dissatisfied is easier than to find new solutions. We find a bewildering array of conflicting opinions as to what the family can or cannot do or be for its members and what place it should have in society.

To find our way, let us briefly consider those functions that are most central to issues of mental health and illness and which the family ordinarily fulfills and reconciles. We can here distinguish between functions that primarily serve the offspring and those that primarily serve the parents. All these functions interweave with each other.

FUNCTIONS OF THE FAMILY

Some functions serve the offspring primarily. First, there are protective or sheltering functions. The protection to be given by parents must match the child's dependence and helplessness. Parents must protect the child from countless dangerous hazards (fire, cold weather, sharp objects, and so on) and from noxious overstimulation, that is, must provide a thorough *Reizschutz* (stimulus barrier). We speak of their buffering, stabilizing function.

Besides protection, the child needs nurturance. Hence, there is a nurturant function to be fulfilled by parents, which operates on four major levels.

On the first — and easiest to grasp — level, we deal with physical nurturance. In order to grow, children need proper nutrition. Frequently they do not get it even in a country as rich as the United States. As a result, many children grow into physically and intellectually stunted adults.

On a second level, one finds emotional or intimate nurturance, which interweaves with physical nurturance. Thus, the maternal breast represents not only a mere feeding organ to the child. Rather, it represents feelings of bliss and goodness, of satisfaction and trust, of well-being and subjective paradise. L. Hill [10] offered a beautiful simile. "The child," he wrote, "in relating to the mother, incorporates mother's 'goodness' essential for the build-up of his psychic and moral personality just as he takes in and assimilates the minerals in her milk — the constituents of a good body." Since Freud, the terms *orality* and *oral phase* evoke a plane on which organic nurture (for example, with milk) and affective nurture meet. They both, inseparably, make up *the* good experience which becomes our primary reservoir of self-worth, basic trust, and hope. Having once been steeped in the "warmth of intimate human relations," we know we are lovable and hence can afford to love. We seek such warmth again

and again, thereby erecting a safeguard against later despair and alienation. Such warmth, further, has a desexualizing and anti-incestuous momentum which helps us to resolve the oedipal ties to our parents and to start a family of our own.

Third, the child needs "cognitive nurturance" or guidance. Here we need to think of his need for reliable cognitive signposts, for an anchorage in language, and for models of communication which let him find his way in a symbolic jungle. A great deal of research, much of it dating from the last decade, highlights the young child's need for such cognitive guidance. Bruch [5], for example, showed that parents can disorient their children with respect to their (the children's) vegetative needs — can cognitively misguide them about how to spot and define the signals arising from their bodies — with the result that such children never learn to regulate their food input, and then become — and stay — hopelessly obese. Lidz [14] emphasized the child's need to learn proper categorizations, implied in basic distinctions such as inside-outside, me-not me, good-bad, friendly-hostile, strong-weak, male-female, up-down, and so on. Such distinctions can be made either too blurrily or too rigidly, or they can be so skewed from the outset that all the child's later cognitive orientation toward himself and others gets on the wrong track, as it were. At the same time Lidz reinterpreted the child's need for cognitive nurturance within the context of Piaget's findings. Specifically, he tied it to the various stages of the child's intellectual development. Bateson [2] introduced the concept of the double-bind, a striking case of cognitive misguidance. He referred to those instances in which incompatible messages are given on different levels. For example, a mother might exhort her teenage daughter to show physical tenderness — for example, kiss her mother while the mother, in her bodily response, conveys disgust, embarrassment, and hence disapproval. The girl is thus caught in a bind, usually aggravated by the fact that she is also forbidden to leave the given interpersonal field. Laing [13], thinking much along Bateson's lines, showed how parents, rather than cognitively orienting and nurturing their child, may mystify him. They attribute to him feelings, wishes, and intentions he does not have; they invalidate his perceptions (as when they call his anger a manifestation of nervousness) and/or they induce him — almost as a hypnotist may induce his subject into submission — to comply with their "stronger reality." Thus, they misdefine the child to himself. Wynne and Singer [15,16,23,24] provided, independently from Laing, a clinically rich phenomenology of mystification. They singled out approximately forty "communication deviances" that are traceable in the transactions of Rorschach tests, taped family sessions, TAT stories, and other contexts. Thus, these authors elucidated in detail how parents may mystify children. For example, parents may leave questions dangling, may negate in the second part of a sentence

what was said in the first, may give messages which are discrepant on the verbal and emotional levels, may stray away from the given task, shift the time set, and so on. In each case, these parents fail to "share a common focus of attention" with their offspring and with each other, and hence get stuck in a communications muddle.

On a fourth level, we deal with the child's needs for moral nurturance — the need for values, models of identification, and meaningful goals in life that firmly ground self-worth and dignity. Also, we need to think of those crucial opportunities to prove the child's virtue and loyalty, including those for sacrifice which only family life provides, as when a mother, without much ado, spends countless sleepless nights at her sick child's bedside, or when a sibling offers a life-saving kidney to another. From this vantage point, the family becomes man's primary ethical arena, training, and proving ground that can make life either deeply meaningful or empty.

Some functions serve the parents primarily. Within a family, parents may not only protect and shelter their children; they may also, in a reversal of functions, receive protection from their children — particularly when they grow old. Hence there is the family's protective and stabilizing function for parents.

In addition, one finds the family's nurturant function for parents, as when loyal family bonds guarantee that elderly, decrepit, or destitute parents (as well as uncles, aunts, and others) will not starve.

Similarly, parents may find within the family their major source of emotional nurturance and regenerative relaxation. Specifically, they can enjoy sex in a context of meaningful, enduring, and intimate relations. The same, paradoxically, seems to apply to the enjoyment of aggression, for family members who are securely related to each other can afford to let off steam. (A widow of several years said: "What I missed most after my husband's death was a chance for a real good fight that ends in a reconciliation.") Parents might further find vital "cognitive nurturance" in the family, for if they trust their spouses and children, they can let their hair down, reveal their innermost thoughts and doubts, and have a check on their personal reasoning that no outsider could provide.

Finally parents, no less than children, can draw vital moral nurturance from family relations. In being devoted spouses, they can elicit and confirm each other's loyalty and virtue; and, in being good parents to their children, they can prove their self-worth and can master the crisis of integrity which Erikson defined as the major challenge of man's middle years.

In addition to, and interweaving with, all these functions, we find that family relations fulfill *repair functions* for many parents. Thus, parents who were deprived by their own parents can recruit their children to undo

their deprivation. This can take various forms. For example, a mother who once passively suffered abuse and neglect from her parents may, in relation to *her* child, become the active, giving parent her own mother failed to be. Or the father, whose parents pushed him — vainly, as it turned out — to become an academic success, can impel his son to realize his unfulfilled dreams and thus restore his self-esteem by proxy. Or a father may take his adolescent son to account for the harshness his father inflicted on him — become to his son the same harsh and unempathic taskmaster that his own father was to him when he was an adolescent. Or a mother may “parentify” a daughter by excessively seeking the latter’s guidance and approbation. Such repair functions, we realize from these examples, may imply psychological exploitation. To deal more thoroughly with this issue and its relation to mental health, we must ask how the above family functions fulfill or fail to fulfill the different members’ needs.

Interplay of functions is another element. Optimally, the above functions should complement each other, that is, should dovetail to benefit all members in the transactional setting. In a well-functioning family system, this seems to be the case to an amazing degree. For example, a mother fulfills her own maternal needs while she satisfies those of her child: while her child thrives, she thrives too. In teaching the child nursery rhymes and lullabies — in giving him emotional and cognitive nurturance — she enjoys reverting to a child herself, yet also exerts adult responsibility and thereby proves her virtue as a parent. The child, in receiving her vital emotional and cognitive nurturance, builds a base of gratitude and commitment which later lets him repay his aging mother for her care and devotion, thereby finding meaning and worth for himself.

But such mutually satisfying interplay of functions and needs often fails to materialize in real family life; various members’ needs work at cross-purposes. While the needs of some members are satisfied, those of others go begging. Some members survive physically, economically, or psychologically at the expense of others. There are various forms of exploitation. For example, certain parents, in order to have an easier material life, may prematurely overwork their children as babysitters for other children or as breadwinners — as happened routinely in England during the early stages of the Industrial Revolution. Functional and psychological exploitation of children by their parents occurs more frequently — the children must serve the parents’ repair needs excessively. Such psychological exploitation seems — at least in the United States and Western Europe — the more common and important form. One may think of the mother who, in trying to make up for her deprivation by *her* mother, becomes to her child an indulging, impervious juggernaut who blocks her child’s self-regulation and autonomy. Or one may think of the parent who vilifies or even batters a child because he fights in him those traits of

meanness, degeneracy, and so forth, which his own parents once attributed to him and which he now must disown. Or one may think of the father who relentlessly pushes his child of average endowment to become that shining academic star his own father wanted him to be and which he failed to become. Such psychological exploitation raises important questions in relation to mental health and illness.

THE FAMILY IN THE LARGER SOCIETY

The family's role in society often reflects tensions which may deeply affect the members' mental health or illness. These tensions enter into a "family-society dialectic" that can take various forms under differing historical and cultural conditions. Usually there exists a balance of synergy and antagonism between the family and society.

Where there is synergy, the family serves as society's smooth, socializing arm, as it were. It transmits to its newborn members those values, role models, linguistic tools, and so forth, which assimilate these members into this society and, at the same time, perpetuate and reinforce society's institutions. At the same time, the family may be antagonistic to the larger society. This very likely may interfere with its socializing functions. Antagonism exists, for example, when family loyalties take precedence over the loyalty which the state or wider community should receive, as seems typical for much of Italian society. Here the family absorbs many of the loyalties normally owed the wider community, with the result that nepotism may flourish and societal institutions may become corrupt and impotent. The relation between family and society within a wider historical perspective should be considered.

Man's change from a nomadic way of life to a settled existence seems to be most important. Once man became settled — about 8000 to 6000 B.C. — once he tamed animals, planted crops, and lived in permanent villages, towns, and, finally, cities — not only did societies become more complex, but they also required increasingly monogamic and hierarchical family structures. As long as nomads roamed the world in small groups — and this seems to have gone on for about 2.5 million years — various types of group marriages in which the men shared the women seem to have been viable. L. Morgan for one, on whose research F. Engels based his famous book, *The Origin of the Family, Private Property, and the State* [6], found such group marriages among the Iroquois and other American Indians. He generalized from his research about all family life during the so-called barbaric stage of mankind. While further cross-cultural research has challenged his generalizations, there can be little doubt that a settled and civilized way of life in ever larger villages, towns, and cities could not

but deeply affect the family structure. Just as life within most larger societies became hierarchically structured and linked to concepts of private property, so did life within the family. The family in imperial Rome seems here paradigmatic. It was headed by a *paterfamilias* who, initially at least, had the legal power of life and death over his wife, children, and slaves. Features of this Roman family survived in the family of the Western middle ages and even in that of modern times.

The Family and Modern Society

When we turn to the modern Western family, we get the impression that the family was probably never as important as it is now but also, because of and despite such importance, that it was probably never under more strain. This strain reflects a growing tension between family and society — or intensifying family-society dialectic — as defined above. There is now more need for synergy on various levels, but there is also heightened antagonism.

To trace this intensifying family-society dialectic, I shall focus briefly on how three major, interweaving features of modern society affect the family and its mental health. These are this society's high technological differentiation, its accelerating change, and its affluence.

The Family in a Technologically Differentiated Society

A highly technological and pluralistic society requires from its members many specialized capacities, skills, and roles. It requires, especially, capacities for instinctual delay, for task-oriented dissociation, for articulate communication, as well as numerous technical skills. Many of these capacities and skills are found to depend on how the family fulfills its socializing functions. Many others — and their numbers grow rapidly — must be learned outside the family in (more-or-less-formal) educational institutions.

As society becomes more differentiated, more time for learning and more institutions for education are needed; but there are also needed such psychological and institutional conditions for successful learning as the latency phase and the moratorium of late adolescence. Both terms denote protected developmental phases or settings that are conducive to learning in the widest meaning of the term. In the latency phase the preadolescent is (relatively) protected from premature libidinal conflict and distraction; in the moratorium, described by Erikson [7], the postadolescent is protected from premature responsibility.

Along with the above, people became ever more sensitive to the specific potentials and limits of various developmental and learning periods. As a result, these periods became more clearly delimited from each other. Thus, infancy, early, middle, and late childhood, adolescence, and youth became delineated and widely used as identificatory labels. This contrasts with what prevailed in the Middle Ages and early modern times as there seems to have been little awareness of the separate and distinct status of children and adolescents.

Finally, the above developments implied ever stricter educational timetables which, in turn, created stricter "separation timetables" for parents and children — as when *all* children had to leave the family and attend school from age six and even earlier. Thus, there came to operate a centrifugal force which moved children out of the house and neighborhood, and brought them in touch with teachers and peers who then provided opportunities for further separation from — as well as loyalty conflicts with — their parents and families.

The Family in a Changing Society

In changing societies such as ours, much of the elders' experiences, values, and wisdom become obsolete. This introduces enormous strain into the relationships between the generations, for children who depended on their parents' cognitive and moral guidance and nurturance come to doubt and challenge. (Thus, they challenge and doubt their elders' puritanical ethics, their patriotism, or their views on, for example, abortion, as they — the young — tie such parental attributes to prevailing social injustice or ecological devastation.) Not only do parents fail as society's socializing agents, they also lose their self-esteem and *raison d'être* when these are based on their being giving and respected parents.

In addition, social change tends to accelerate social and geographic mobility — the average American family moves every five years. Yet such mobility favors the nuclear at the expense of the extended family. But the extended family, we know now, is vital to individual and family mental health. The destruction of the extended family deprives children of the love and wisdom of grandparents, uncles, and aunts; it deprives them of variously aged playmates and friends; and, maybe more important, it deprives these grandparents, uncles, and aunts of *their* most meaningful functions and joys. Tucked away in lonely apartments, retirement communities, or nursing homes, they end their lives in isolation and silent despair. Yet, with the extended family scrapped, the nuclear family is not only impoverished, it is also overtaxed. Too heavy demands are now made on the regenerative nurturant and repair functions which its

members have to fulfill for each other. Thus, while frustration, ambivalence, and interpersonal intensity increase, the members, living as in a hothouse, frequently see no other way out than to break away from each other.

The Family in an Affluent Society

Here the contrast with life in early modern France seems instructive. Many parents then did a poor job of parenting, chiefly because of the extremely harsh life they had to lead. Hunt [11] gives accounts of how parents lacked almost all tools for the rearing of children that we take for granted, such as enough food, proper medical care, and housing. Due to such material scarcity, most children died soon after birth, and parents seldom reached their forties.

But present-day affluence, while beneficial in many respects, produces its own problems and strains. To a large extent, it replaces material scarcity with what we may call psychological and moral scarcity — a scarcity of compelling meanings and values. More specifically, it interferes with many of the socializing functions of the family, as when the ever-increasing pressure for consumption interferes with the extensive learning a differentiated society requires. Rather than facilitating task-oriented dissociations and a delay of gratifications, forced consumption — of soft drinks, drugs, movies, clothes, cars, deodorants — fosters addictive greed and restlessness. Such greed and restlessness are often sexualized. When they befall immature teenagers, they cause further shrinkage of the latency phase which we found to be a psychological prerequisite for extended learning.

Toward the Death of the Family?

To summarize my comments on the family and modern society, I consider the "death of the family" — the conventional, nuclear family which is the subject of this chapter — as this is increasingly prophesied and advocated. Essentially one hears two lines of reasoning: that the family cannot conceivably survive the centrifugal forces societal change begets or that the family has become obsolete and afunctional. The younger generation allegedly are the first to note this state of affairs. Thus, "the kids," according to one author "sense that the family as a functioning, nurturing, joy-producing, sensation-seeking, sexually fulfilling, God-experiencing phenomenon is hopelessly outdated" [17:177]. Hence this and many other

authors' advocacy of "new families" or, perhaps better, new living arrangements, among which Speck includes "a ménage à trois with or without children, small communes with two or three families, youth communes, homosexual, vocational, and religious alliances" [17:183–184].

I believe views and arguments such as the above, far from proving the death of the family, merely bear witness to the intensifying family-society dialectic. Within this dialectic the family appears — for its members' and the society's mental health — ever more necessary, yet ever more threatened. Therefore, if history serves as a teacher at all, the new families, rather than heralding an ever more diversified and tolerant pluralism of societal institutions and values, may well turn out to be part of that force which, in a dialectical turnabout, helps to reinstitute conventional family structures with a vengeance. We witnessed such dialectical turnabout in Russia during the twenties after the revolution initially seemed to have dissolved the traditional family by facilitating divorces and abortions and by producing (in Russia) many homeless, roaming youngsters who were then called *wolves*. Similarly, in Germany's post-World War I Berlin, anything — homosexuality, wife swapping, ménage à trois — was permissible, as, for example, the film *Cabaret* shows. But, subsequent developments in both countries, as is well known, resurrected the family as a restrictive and almost puritanical institution, while the larger society — despite, or because of, its increasing technological differentiation — turned totalitarian. The question is whether we in the United States can have, at one and the same time, a strong family and a strong, differentiated, and democratic society.

MAJOR DIMENSIONS IN THE STUDY OF THE FAMILY AND MENTAL HEALTH

In considering how the family relates to mental health, one must take four major dimensions into account.

The Individual's Mental Health in Relation to the Family

The first dimension focuses on how any individual's mental health relates to family functions (or their lack). For example: What happens to a child's emotional and intellectual growth when he lacks adequate parental nurturance and protection, which should be provided in a stable family setting? What happens when a family mystifies a child — misdefines him to himself? What happens to parents and grandparents who are cut off from

family life? How do these and other family influences create life stresses which may lead to mental illness?

The Mental Health of Family Systems

Within the second dimension, one question is: How do family functions interweave and mesh with each other so as to fulfill the needs of *all* members? The concern is not with the mental health of individuals, but with that of the whole family system. I adopt a "homeostasis" point of view, which N. Ackerman [1], for one, elaborated upon.

Within the family, homeostasis can be seen to operate on several levels: first, on the level of the members' verbal exchanges. These can turn out to be tediously monotonous and predictable, notwithstanding initial impressions of normality or liveliness. Observers will sense stagnation and, for this reason, often despair of sustaining their interest in, and commitment to, these families. Second, homeostasis can be manifest in these members' family roles, as these roles appear unduly rigid and fixed. For example, one mother will always be the overadequate, self-sacrificing martyr; the father, the underadequate, irresponsible squanderer; the son, the jolly, lazy clown; the daughter, the responsible, industrious mother's helper. These roles appear inflexibly entrenched, chiefly because of each member's unvarying perceptions of them. A third level, interweaving with the other two, concerns each member's overt, as well as covert, emotional needs. These needs, too, may lock the members into a tight, unchanging family bind. Fourth, the distribution of mental symptoms such as depression or drinking may reflect a homeostatic family equilibrium, as when one member's depression may get passed onto another member but stay within the family system.

Family homeostasis, as here defined, thus implies family bonds which are restrictive, impoverished, stereotyped, and nearly unbreakable, and thereby reflect mental ill health on the family systems level.

Mental Health in Relation to Exploitation

The third dimension concerns the implications of material or psychological exploitation in the family. I adopt a systems perspective on the family, but one that is primarily ethical and stresses justice, reciprocity, and the workings of — mostly invisible — loyalties and obligations. This is the dimension which I. Boszormenyi-Nagy [3], and with G. Spark [4], explored with deep originality. We may consider a parent who — in pursuit of his own repair needs — abuses or psychologically exploits a child

and thereby burdens himself with guilt. He may try to discharge this guilt by fiercely blaming the victim or through a lifelong history of covert penitence and self-sabotage. While this happens, the victim-child, by merely staying sick — staying confused, ineffective, crazy — gains the power to operate the guilt lever on his parent, as he delivers himself as the living proof of the latter's badness or failure as parent. Here a therapist must analyze the power inherent in the victim's masochism, but, beyond that, he must look into the "invisible accounts" or the "ledger of merits" [4] which maintain a family equilibrium of psychological exploitation and counterexploitation. This often requires a multigenerational therapeutic approach and perspective. For how, for example, can we do justice to a mother who "dumps" her disowned badness and craziness on her child, unless we take into account how she was exploited and victimized by her own mother?

Family Mental Health in Relation to the Wider Society

The fourth dimension concerns the family-society dialectic. A family's mental health appears to be tied to that of the surrounding society. Specifically, how may societal change interfere with vital family functions? Prevention and social planning, rather than therapy in a conventional sense, are often at issue.

THE FAMILY IN SOME PSYCHIATRIC DISTURBANCES

The foregoing viewpoints on the family and mental health may be applied to some psychiatric syndromes. Since these syndromes are treated elsewhere in this textbook, the objectives are limited: Rather than aiming at exhaustive coverage or even definition, they will serve as foci which can selectively illustrate the issues. Specifically, they are intended to show that we may need to reconsider conventional definitions and explanations of these and other syndromes once we adopt a family perspective.

The Family and Neuroses

Classical neuroses, comprising chiefly the hysterical, obsessive-compulsive, and phobic neuroses, have been exhaustively described within psychoanalytic and other frameworks. A book like O. Fenichel's *The Psychoanalytic Theory of Neuroses* [8] presents a milestone. Since its appearance, thousands of other articles and books on neuroses have been published.

Most authors hold the neuroses to grow out of, and to reflect, intrapsychic conflicts. The conflicting forces — on one side, primitive, more or less sexualized wishes to devour another person's penis or breast; on the other, deep shame and retaliatory fears — are repressed (dissociated) and then give rise to neurotic symptoms. These symptoms present a compromise, as when a compulsive washer conceals, as well as reveals, his "dirty inclinations" through his cleaning rituals. While he gets absorbed in these rituals, his inner life shrinks and his growth remains arrested. He cannot make liberating moves that could open up new experiences and new types of relationships.

When we consider family factors in the neuroses, we run into paradoxes. Freud, in a number of ways, minimized the importance of the family. He wrote, for example, of the great practical, but limited, theoretical interest the family holds for psychoanalysis. Also, he played down the importance of parents and the family when he disclaimed that hysterical neuroses stem from the seduction of children by parents (or parent substitutes) and maintained, instead, that the child's subjective experiences — especially his repressed fantasies — could by themselves account for those intense conflicts that underly neuroses. This theory fatefully shaped later etiologic and treatment perspectives, and they are also elaborated upon in this textbook. The family, especially parents, is mainly a model for those mental forces or agencies (such as the ego ideal) which structure inner conflicts, but is seldom an active (nurturing or traumatizing) agent. However, such views became less tenable as psychoanalysts studied actual parent-child and family relations, for they observed how the parents' real — supporting, nurturing, depriving, or traumatizing — behavior affected a young child deeply and lastingly. Hence, there was increasing interest in early object relations, as shown by a growing number of psychoanalytic authors. But there remained problems on to how one could integrate a conceptual model that centered on the individual's intrapsychic conflicts with one that recognized the parents' contributions to these ((see Stierlin [21]).

Psychoanalytic ego theory, developed chiefly by H. Hartmann [9], partly reconciled a model of intrapsychic conflicts with one of traumatization by parents, as Hartmann showed that the ego plays a major role in the development and maintenance of neurotic conflicts. He delineated a number of ego functions (memory, anticipation, motor coordination) which, in one way or another, affect the person's handling and/or repressing primitive drives and wishes. Parental and family factors, Hartmann showed further, can impair these functions in various ways. For example, parents may provide too little object constancy — too little nurturance during crucial formative years — and thereby damage the child's budding ego.

The family (or transactional) research of the last decades further substantiated Hartmann's views on how family factors might account for ego deficiencies. At the same time, it raised questions as to the meaning and extent of such defects. For it established a systems perspective, within which neurotic symptoms such as phobias, obsessive rituals, neurotic depressions, and so forth, appeared to wander from family to family member — an observation which seems incompatible with the view that these symptoms stem merely from the defective egos or entrenched inner conflicts of individual members. Rather, this suggests systemic neurotogenic properties of the family as a whole. Yet, further, as Boszormenyi-Nagy and Spark [4] showed, the "ego weakness" of a seemingly neurotic family member often becomes a mark of strength when one considers the growth needs of the whole family. For it then appears that the person's neurosis — as, for example, a child's school phobia — serves the function of initiating treatment and a constructive dialogue for the whole family. The phobic schoolchild, originally singled out as the "sick" family member, appears to be the only one strong enough to "own," and to take upon himself, the whole family's fear of separation — a fear that other members must disown. Clearly, this, as well as other paradoxes which grow out of a family perspective, will challenge our conceptual and therapeutic ingenuity for some time to come.

The Family and Delinquency

Delinquent (or antisocial) behavior contrasts partly with neurotic behavior. Whereas the neurotic person suffers from intrapsychic conflicts, the delinquent person frequently avoids such conflicts by making others suffer. When delinquency is viewed in a family context, several questions arise.

There is, first, the question of how delinquency relates to a breakdown of family functions. Available evidence suggests that many delinquents were seriously deprived in their childhood, as they lacked the protection and emotional, as well as moral, nurturance. Closer acquaintance with delinquent persons frequently reveals that their parents did not consider them to be important, that they failed to show care and concern, and that they did not set limits. Often they punished their children impulsively for minor errors or oversights, while failing to discipline serious misdeeds. For example, a father would typically beat his child for leaving his bicycle standing in the garage doorway, yet seemed unconcerned when the child skipped school, took drugs in large amounts, or raced around in a neighbor's car. Further, these parents often fail their children as models for ethical and honest behavior. Unwittingly, they instill in

their children a value system that condones breaking the law and exploiting others — as long as one is not caught.

As a result of such parental failure, ego functions such as anticipation, the ability to plan ahead and to weigh different action courses, remain defective, and the superego is corrupted. Given these lacks, youngsters become impulse-ridden and thrill-seeking.

Like neurotic symptoms, delinquent behavior may crop up successively in different family members. For example, it may be noted during family therapy that a parent turns irresponsible — drifts and squanders money — once his child becomes responsible. At closer inspection, we may find that such a parent commissioned his child to satisfy by proxy, and thereby keep in check, his (the parent's) own delinquent impulses. Once the child stops being delinquent, the parent becomes the delinquent family member. In this context I described the adolescent as the delegate of his parent [21], noting that the Latin verb *delegate* means to send out and to entrust with a mission. Like a good retriever dog, such an adolescent is sent out by his parents but, held on the long leash of loyalty, is also expected to return and to feed his parents psychologically. His mission might then imply delinquent activities. Johnson and Szurek [12] described well how a child might be entrusted with delinquent missions. They showed how parents often give covert signals that anticipate and sanction delinquent behavior in the child. For example, they mention with fascination the daring misdeeds of some neighborhood teenagers, and thereby convey their admiration for such illicit heroism. When their adolescent shows similar behavior, they scold him without conviction, as their scolding reflects hidden praise. The child realizes that he does the very things his parents would like to do but are afraid to take responsibility for. Executing his parents' secret wishes may provide him with such gratification that he gladly suffers his parents' beatings, which signify his parents' "love." Johnson and Szurek [12] described parental superego lacunae which account for the children's seeming amorality.

These considerations open up questions of ethics and accountability. While many delinquents are guilty in the eyes of the law, their guilt seems less obvious within a family context, for they often appear to be victims and scapegoats who can find a minimum of parental approbation only when they offer themselves as vehicles for their parents' disowned badness, and also as targets for their parents' punitive impulses. Within the family there often exists an inverted "ledger of merits" [4] which may explain why many delinquents are frequently without (overt) guilt. (Even a murderer can be subjectively guiltless when he, in carrying out a mission to murder, knows himself to be his parents' — or parental substitutes' — loyal delegate.)

The Mafia may serve as an example. While Mafia members are delinquent from the viewpoint of the larger society — which labels and prosecutes them as criminals and gangsters — they are frequently heroes to their family and clan. For the very act of killing a member from another gang, which society declares to be murder, turns into an act of praiseworthy loyalty when viewed from within one's specific family or in-group. An institution such as the Mafia also reveals a disturbed society-family dialectic, for the family clearly fails as society's socializing arm. Instead of instilling values which would synchronize the individual members' interests and motives with societal requirements, the family pits its members against society, thus eroding or destroying this society's fabric.

The Family and Running Away

Presently, between 600,000 and 1,000,000 teenagers run away from their American homes each year. Only drug abuse, with which it has many links, rivals running away in importance as a mental health issue for young Americans. Like few other syndromes, running away illustrates interweaving family and societal dynamics. I described these dynamics elsewhere in detail [20,21]. Here a few summarizing remarks must suffice.

To allow for running away on a large scale, a society must fulfill three major prerequisites: First, it must be affluent enough to provide runaways with spillover sufficient for survival. The girls of the Charles Manson household, all of them runaways, used to make "delicious" meals from the contents of garbage cans. For many other runaways, dependence on society's garbage is less obvious but no less real. Second, the society must allow for easy mobility and access to transportation. And, third, there must be a breakdown in the society's stability and cohesiveness. A small country such as Denmark, which is socially more cohesive — but no less affluent — than the United States, has hardly any runaways. The United States, in contrast, being affluent, mobile, as well as noncohesive, generates them by the thousands.

While society offers the opportunity for premature separation, it is the family that actually makes children run away. The family reveals a failure of family functions, but does so in different ways and patterns which account for different types of runaway behavior.

At one extreme, one finds families in which children are overprotected and overnurtured, as it were. They are given excessive regression gratification and their will to compete in the outside world and hence to separate is sapped. Yet, while they are regressively gratified, many of them are also mystified, that is, are given defective cognitive nurturance.

Hence, they remain confused as to what they are, wish, and need, and they lack the communication tools with which to convey their wishes and needs to outsiders. All this has the further effect of tying them ever more tightly to the family orbit. As a result, many of these children feel stifled by too much family closeness and, therefore, attempt to run away. However, because they are so ill-endowed and ill-prepared for a life outside the family, they quickly reclaim the parental orbit. Hence, they show a typical abortive runaway pattern — *abortive runaways*. Often they run away for only a few hours and appear to be pulled back as if held by a rubber leash, while similarly bound-up youngsters do not run away at all. To them, the outside world is so forbidding that they delay their separation at all cost, even though the stifling family closeness may be agonizing.

At the other extreme, we find family bonds that are loose and fragmented. I described centripetal families and separation patterns [20]. Under these circumstances, parents fail in the above function, as they insidiously reject and/or neglect their children. Feeling unwanted at home, many of the latter embark on a premature separation — run away. Their success as runaways depends largely on whether they are tough and skillful enough to make it on their own. Typically, they try to make assets of their lack of concern and loyalty — a lack deriving from the lack in their parents' loyalty and concern for them. Many of these runaways have delinquent and sociopathic traits. Frequently unhampered by guilt, they easily exploit others. Typically, boys use girls sexually and discard them blandly, whereas girls learn to pass their bodies around for shelter, favors, or money. I called the boys and girls in this group *casual runaways*, as they tend to run away — or, better, to drift away — casually and easily. Many of them show no desire to return home, nor do their parents seem to desire their return.

There is, finally, a third major group of runaways whom I called *crisis runaways*, who appear subject to binding and expelling family influences. Many of them serve as their parents' delegates, that is, leave the parental orbit temporarily in the pursuit of their missions, which may vary. For example, such adolescents might serve primarily as their parents' thrill-providers. Thus, one girl developed into an attractive, well-built, and slightly precocious teenager, while her mother — grimly and excitedly — warned her of those wanton boys who were bent only on sexual mischief. This mother seemed obsessed with the possibility of her daughter spending her nights with disreputable and orgy-prone young men. Not surprisingly, the daughter confirmed her mother's worst apprehensions. The girl eventually ran to a distant metropolitan area where she became sexually promiscuous. In the subsequent family therapy, it became apparent how much the girl had served as her mother's unwitting, thrill-providing delegate. Other runaways in this group must experiment

with life-styles and life situations which their parents dare not test out themselves. The father who, throughout almost two years of family therapy, gave evidence of strong runaway wishes of his own belongs to this group. He talked frequently about moving to another city, half-heartedly put up his house for sale, and ambivalently planned to change jobs, but never got off the ground. At the same time, he thought day and night about his fifteen-year-old runaway daughter who would do the things he himself failed to accomplish. For this girl could, so it seemed, easily uproot herself, make herself at home in the runaway culture, and form new relationships. Through her runaway ventures, she taught her father how to make new starts.

The crisis runaways were so named because their running always reflects a crisis in their and their parents' lives. Unlike the abortive runaways, these youngsters manage to run away for longer stretches of time. For a while at least, they can make it on their own (providing, of course, there is spillover from society's affluence). Yet, unlike most casual runaways, they remain involved with their families, often intensely so, and finally return to the family orbit. While away from home (yet still on a leash), they often seem deeply conflicted — about running away from their parents, about living in the runaway culture, about hurting others while pursuing their own ends. Ordinarily, their ongoing involvement with their parents makes them good candidates for family therapy. As the family crisis is explored and — it is to be hoped — resolved, the need for running away must stop and parents and children must renegotiate their separation in ways that are less agonizing and costly to all involved.

The Family in Sexual and Gender Disturbances

Sexual and gender disturbances, although often interweaving, can be distinguished from each other. We speak of sexual disturbances when sexual behavior is inhibited (as in frigidity or impotence), is restricted to limiting objects or situations (as in fetishism), or is otherwise grossly at odds with common societal expectations. We speak of gender disturbances when a person is insecure or confused about his proper gender.

Sexual and gender disturbances have their basis in man's instinct-openness. While in most animals sexual activities are subject to hormonally controlled cycles, those of man are — largely — free of such constraints. At the same time, they are subject to how he perceives, and reacts to, the emotional and social context. And while man's gender — whether he or she *is* a man or woman — is biologically determined, his gender identity — whether he or she *feels* and *acts* like a man or woman — is mostly learned. Thus, a boy may be brought up as a girl and vice versa

when the parents — as happens in some cases — make wrong assumptions about the child's biological gender.

To grasp the range of possible sexual disturbances in man, we must keep in mind the major functions his sexuality may have to fulfill. Thus, he might seek sex primarily for the purpose of procreation or he might seek it for distraction and excitement — particularly when such excitement must ward off an underlying depression or emptiness. Paradoxically, he might also seek it for relaxation. Further, he or she might employ sex in the service of power needs, as do baboons for whom mounting and sexual compliance become tokens of dominance or submission. Or man might engage in sexual intercourse primarily to dispel doubts about being unmasculine or unfeminine, impotent or frigid. Or the search for sexual gratification may have a fiercely addictive quality, as where an insatiable infantile greed is sexualized, keeping the individual in constant and often painful arousal. Here the very intensity of the craved orgasm might serve to prevent a frightening ego disintegration.

Given the fact that sex can be employed for so many divergent, as well as defensive, purposes, and that it can be either syntonic or dystonic with one's anatomical gender, the margin for deviant or nonviable integration is large. Much depends on how the family serves as a training ground for viable sexual attitudes and gender roles. Many of the family's functions are important; thus, parents must help their children to achieve firm and clear gender identities. To do so, they must be — and confirm each other as — acceptable models of masculinity or femininity and must encourage and confirm in the child all those traits which cause children to feel at home in their proper gender. Most parents do this more or less unwittingly when they dress children traditionally in keeping with their gender, and let them know they view and like them as boys or girls, respectively. But many parents fail in this task.

And parents must, above all, provide proper emotional nurturance, through which, steering clear of deprivation and binding or indulging overstimulation, they awaken their children to healthy sexual enjoyment and awareness. This should help them to integrate sexual arousal with tender and affectionate feelings, as such integration seems crucial for the latter achievement of loving, heterosexual relationships and of a happy family life.

The Family and Schizophrenia

The term *schizophrenia* covers probably the most severe and most important form of mental disturbance. The schizophrenic has largely lost touch with reality, often can no longer differentiate between what is inside and

outside him, what are his or another person's ideas, and what the hallucinations or facts. Although it is widely used, the term remains controversial on many levels. For example, some authors believe the important causes to be mainly organic, others believe them to be mainly psychological, while still others (probably the majority) believe them to be organic *and* psychological.

The available evidence suggests to me that a nonspecific predisposition for schizophrenia probably exists and, most likely, is commonly vulnerable to a wide range of stresses out of which a wide range of disorders might develop. For these latter, the term *schizophrenic spectrum disorders* has been suggested. These disorders include not only cases of bona fide schizophrenia, but also character disorders, so-called inadequate personalities, schizoid states, and others. In monozygotic twin pairs with one schizophrenic member, we find a probability of only 25 to 45 percent that the co-twin — who supposedly has the same hereditary endowment — will also some day be diagnosed as schizophrenic.

Yet, while the search for organic factors in schizophrenia has so far failed to yield convincing results, the family has become a rewarding locus of study. A productive family research in schizophrenia started approximately two decades ago. Bateson [2]; Lidz [14]; Wynne and Singer [15,16,24]; and Laing [13], together with their co-workers, among others, were pioneers in this work. In studying families with schizophrenic offspring, these authors also explored the family functions thoroughly, and through such study gained the deepest insights into man's individuation, separation, and socialization, as mediated through the family. On the basis of his early studies, Lidz concluded that if there were no such human disorder as schizophrenia, we would have to postulate it. For this disorder, he realized, presents exactly what we would expect when man goes astray in the symbolic jungle — a fate that appears intimately tied to a failure of central family functions. As I described elsewhere in detail [19], many mothers of schizophrenic patients come to denote mortal danger to their children rather than serving as protective matrices. Some mothers — particularly those of schizophrenic girls — strike us as aloof; others appear intrusive and overstimulating. With them, the child must become a specialist in symbiotic survival, must develop techniques that allow him to detoxify — to blot out, circumvent, or otherwise keep at bay — the dangerous intrusive mother while he still tries to extract her nurturance. Such specialization for symbiotic survival, I tried to show, is costly. The child must leave underdeveloped many functions and skills he needs for healthy, all-around development. But the would-be schizophrenic child is not only insufficiently sheltered and emotionally malnourished, he is also cognitively unsettled. He is subjected to double binds, is mystified, and is prevented from sharing a common focus of attention [15,16,23,29]. There

exists a rich body of literature on the complex dynamics of such deviant, unsettling communication.

To define essential family dynamics in this area, I employed the concept of *transactional modes*. These include the modes of binding, delegating, and expelling, and are described in detail elsewhere [21]. Here it must suffice to note that schizophrenics are often subject to severe parental binding and delegating stratagems. They are bound in the sense that they are regressively gratified (or infantilized), that basic cognitive tools are wrecked, and that they remain tied to their parents in an archaic, primitive loyalty. In addition, many would-be schizophrenics become entrusted with "missions impossible," as when they have to embody and actualize a parent's grandiose ego-ideal. The more such a parent senses that he cannot realize this ideal by his own efforts, the more he enlists the child's services. This child, who is usually of only average endowment, must become a famous star or embody all the beauty and vitality which the parent feels lacking or wanting in himself or herself. A delegate might even become recruited — and this is perhaps the most fateful mission — to embody and externalize the badness and craziness which the parent, in his innermost self, feels and fears to be his fate. The child must serve his parent's self-observation, which Freud defined as one of the three functions of the superego, besides ego-ideal and conscience. Frequently we find that such a parent lives under the disowned threat and spell of madness and therefore often seems impelled to search for — and, in this process, induce — madness in the child.

Such induction of madness constitutes, finally, an extreme example of how parents might exploit children psychologically for their own repair or survival needs. When studied at this family level, the phenomenon of schizophrenia introduces us to a morality play that is played for the highest stakes. We find parents who, exploited and crippled by their own parents, try to survive by living through their children, crippling them in turn and, on the other side, children who, as self-sacrificing, lifelong victim-delegates, gain the power to devastate their parents through the induction of deepest guilt. Clearly, as psychotherapists and students of human behavior, we confront one of our greatest challenges in the study of the family.

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12

Social Organizations

Keith L. Smith, Ph.D.

THE NATURE OF FORMAL SOCIAL ORGANIZATIONS

The day of the completely independent, freestanding medical practitioner, dependent only upon his personal resources to provide health care to his patients, has long since passed from the scene. By contrast with, for example, dentists and lawyers, physicians depend upon technology so complex and costly that much of it can only be applied within the setting of a large formal organization, such as a hospital. Further, as health care has become such a large and uncertain part of most families' expenses, insurance companies and the Social Security Administration have become an important part of the medical care scene. Finally, medical school training is so costly that by far the greatest part of such expenses are paid not by individuals but by state and federal governments. It does *not* necessarily follow, however, that physicians will inevitably become an integral part of some formal organization (as is the case for almost all the rest of the labor force). It *does* mean that physicians will find it important and useful to be more skilled in working with and relating to a variety of large formal organizations.

The majority of families and individuals whom physicians treat are deeply affected — for better or worse — by the formal organization of their occupational lives. Like the family, workplace bureaucracies con-

stitute potent sources of personal satisfaction and personal health problems. Understanding the dynamics of formal organizations is useful to the physician in helping patients cope with problems that have their source in work organizations.

The following account does not constitute a complete exposition on formal social organizations; rather, it describes only those aspects thought to be useful for practicing physicians.

Bureaucracy, is considered a "dirty word" among many segments of society. Many social critics and social movements of the past decade or so have leveled heavy fire at the bureaucratic operation of certain formal organizations, accusing them of dehumanizing and frustrating the personal development of people under their control and subverting the common interest to narrow, antisocial purposes.

Yet the alternatives to some types of formal organizations have proved even more intolerable. Imagine, for example, a hospital setting in which physicians, nurses, pharmacists, administrators, and janitors had no idea what functions their fellow workers could be expected to carry out — indeed, could not reliably distinguish physicians from administrators or clergymen. Or suppose all positions in a hospital were arbitrarily filled by relatives of some hereditary line of politicians, without reference to qualifications for the job.

A formal organization exists and functions to reconcile, insofar as possible, those objectives which can best be achieved (or *only* be achieved) by group effort, on the one hand, with the objectives of individual participants in the organization on the other. Given the diversity of personal values and occupations in society, this is a difficult task indeed; congruity between individual and organization goals is seldom completely achieved for more than a few of the most highly committed members of a formal organization.

Formal organizations arose with (or made possible) division of labor, which has increased working effectiveness enormously. Most technologies, especially those in medicine, could not have been developed or applied without an extremely complex division of labor. Such division of labor has its costs, however, including incomplete utilization of personal interests and talents and the need to subordinate personal idiosyncrasies to interdependence with others. As the sociologist Durkheim pointed out, solidarity in a society can only come about if all people are alike in certain crucial belief characteristics or if people are different but also interdependent. Unfortunately, some professionals and others claim there is a high degree of occupational specialization and independence in a society which is occupationally diverse and therefore necessarily interdependent.

On balance, most people prefer formal organizations to operate rationally (bureaucratically) rather than autocratically by whim or hereditary

power. Immediately after the French Revolution, French citizens were organized throughout the country to recommend changes in their government. The majority of these recommendations dealt with such matters as governance by a written set of rules rather than by a local magistrate's judgment of the moment; appointment of government officials on the basis of their job qualifications, not their relation to royalty; application of rules impersonally to everybody — not one rule for friends and another for strangers. Their suggestions by and large coincide with the tenets of bureaucracy.

Granted the desire for rationality, consistency, and continuity in formal organization, it does not necessarily follow that bureaucratic organization is the best or most effective approach, particularly where complex technology and highly trained professionals are involved. To deal with this question adequately, however, a framework for constructively dealing with formal organizations will be presented.

Certain of the characteristics of the model of formal organizations* bear a close resemblance to those of a biological system (for example, the idea of negative entropy). The analogy may prove to be a useful learning device; however, social organizations differ sharply in other respects from the biological unit (a distinction students of formal organizations have not always kept in mind).

The essence of a social organization, unlike that of an animal, plant, or working machine, is not its visible parts, for example, people, buildings, equipment. Rather, a social organization primarily consists of the relationships between people within the organization and the relationships with groups and people outside the organization interacting with it.

To understand the nature and functioning of a social organization it is helpful to regard it as an *open system*, with the following characteristics.

First, formal social organizations, like living organizations, import more energy (material resources, expenditure of human effort, and the like) than they return to the environment in the form of products such as manufactured goods, health care services, entertainment. As with any operation in which order, pattern, or regularity of sequence is increased, entropy must be reduced relative to the environment, which requires considerable expenditure of energy. Open systems by definition move to acquire more and more negative entropy. Unlike a biological organism, however, a formal organization must produce and otherwise relate to its environment in such a way as to induce the importation of sufficient

*The material in this section is based upon Daniel Katz and Robert L. Kahn, *The social psychology of organizations*. They, in turn, develop their work from a number of sources in various disciplines.

energy from the environment to survive. A hospital organization or a group of private medical practitioners must produce sufficient satisfaction in their patients, and otherwise build their reputation in the community, to induce the community to supply more than the minimal resources needed to produce such patient satisfaction. Failure to complete the cycle, to stimulate the importation of more resources than are returned to the community as product, will result in the eventual demise of any formal organization.

A critical component of what an open system receives from its environment is information. Contrary to popular exhortations to people to communicate more openly, formal organizations successfully maintain their boundaries by constricting, selecting, routing, interpreting, or otherwise controlling information in the system. An open system is only relatively more open to information input than a closed system. There are several practical reasons why this is necessary. First, communications overload constitutes a troublesome, persistent problem in any large formal organization; the huge volumes of paperwork that choke the "In" boxes of hundreds of thousands of workers provide mute testimony to this. Second, certain types of information are more critical and important than others; such information must be secured and accurately interpreted if the organization is to survive. Modern organizations are especially dependent upon negative feedback to build and maintain their negentropic relations with their environment. Such information provides an ongoing means for correcting mistakes and optimizing relationships with patients, customers, government, financial organizations, and the like. Finally, by selecting, interpreting, and otherwise influencing information input and processing through the system, formal organizations hope to build cohesiveness and a common set of beliefs among organization members.

Other properties of an open system, important to the functioning of formal organizations, are steady-state and dynamic homeostasis, the tendency to move in the direction of differentiation and elaboration, and the principle of equifinality. Formal organizations which survive become very proficient in the use of mechanisms that minimize disturbances to a dynamic steady-state relation with the environment. Such mechanisms include negative feedback, control of information input, and the maintenance of system boundaries by control of admission and maintenance of membership in the organization. In an effort to gain more control over environmental uncertainties which threaten organizational functioning and increase the work load of members, large organizations have a tendency to move to extend organizational boundaries and influence to encompass the troublesome environmental elements. Thus corporations on occasion move to merge with competitive producers, trade associations try to control the government agencies set up to regulate their industry, and profes-

sional associations and trade unions seek to have laws passed which have the effect of restricting competition among members.

As formal organizations increase in size, as they come to deal with increasingly complex technologies, they move strongly in the direction of differentiation and elaboration of functions and roles within the organization. The elaborate differentiation of occupations in large hospitals is an example. The first stages of differentiation are achieved by dynamic interaction of persons or groups who are equally capable of performing a variety of functions. In the latter stages this equipotentiality is lost to a specialization which, though efficient at the moment, may be less adaptable to changing conditions in the future. A similar trend is evident with the property of equifinality: the new, relatively undifferentiated organization may reach its objectives by a variety of paths. As more differentiation and regulatory control among subdivisions become established this organizational versatility may be reduced.

When considering formal organizations, most people concentrate on their production or technical work functions: producing automobiles, treating illness, borrowing and lending money, and the like. According to the open-system model, several other critical functions must be performed if the organization is to survive.

First, an organization (or one of its subdivisions) must make an ongoing, concentrated supportive effort to secure the resources needed to make the product, to successfully sell or otherwise dispose of the product, and to justify to the larger community the overall net movement of resources from the community to the organization.

Second, the maintenance function is primarily concerned with people: attracting and selecting people for the organization, indoctrinating or socializing them into the value system of the organization, trying to tie people into their performance roles, and motivating members to perform adequately in their interdependent organizational roles through a system of rewards and sanctions.

Many large formal organizations have belatedly come to the realization that they cannot assume a constant environment, that they must somehow find the appropriate responses to survive in a rapidly changing world. The adaptive function of an organization seeks to cope with this problem through planning and research concerned with the organization as well as with its products.

FUNCTIONS AND DYSFUNCTIONS OF COMMUNICATION

More communication within an organization is not necessarily better. Because of the communications overload problem, quantity must often be

traded for selectivity. Further, selection and direction of communications perform an important function in motivating and channeling people to the organization's goals. As a result, effective communication into and within a formal organization must necessarily constitute a dynamic trade-off between detailed accuracy, completeness, and understanding on the one hand, and, on the other hand (1) the capacity to integrate and interpret the communications flow and (2) the need to classify and route communications flow to induce effective division of labor among persons and subgroups. For example, organizations concerned with overall health care policy and planning (such as Congress, state legislatures, and regional health facilities planning agencies) face difficult tasks in seeking out, sorting through, and selecting that information which will adequately inform but not overload interpretation and communications functions with irrelevant information. At the other extreme, communications channels in a large teaching and research hospital can easily become choked with "noise" in the form of information that is really needed only by selected departments and individuals.

Organizations and their members may react to communications overload dysfunctionally, by ignoring or failing to process unselected parts of the communications flow, by processing information incorrectly, or by self-isolation from other parts of the organization. Communications overload can be handled functionally in a variety of ways: by temporary "queuing" of peak loads for processing during slack periods; by filtering information flow into and through the organization by rationally determined priorities; by creating multiple parallel channels of communications, thus dividing an overloaded communications node among several people or groups (often accomplished by decentralization); by creating incentives for people to reduce the communications output generated and to direct it along certain predetermined channels within the organization; and by deciding to restrict the functions which an organization or a subgroup will undertake in accordance with the information that can be effectively processed. Quality and accuracy of information flow can be increased by specifically encouraging communications feedback from receiver back to the sender (completing the communications loop), keeping the communications loop relatively small, and making "translations" of the message for specific groups. Clinical professionals, research professionals, administrators, paraprofessionals, and unskilled personnel in a hospital, for example, may each need separate translations of the same basic information for meaningful communication to take place.

In general, communication in a large formal social organization proceeds most effectively when the information flow is sufficiently channeled to stabilize the boundaries between subsystems. A clearly understood demarcation should exist, for example, between the functions and structure of the departments of medicine, surgery, and family medicine. At the

same time, enough connectedness needs to be maintained between departments so that one subsystem can actuate another when cooperative effort is needed.

SOCIAL AND BIOLOGICAL SYSTEMS

Despite some similarities a model for formal social organizations differs markedly from that usually proposed for biological systems. The absolute dependencies among subsystems in a formal organization are far fewer and less perfect than for biological systems. Also, because a social system consists of a structuring of regular sequences of events, there is no identifiable structure left when such a system ceases to function. Further, while social organizations can be constructed for a great variety of purposes, much of the energy expenditure in such organizations must be devoted to standardizing the variability and reducing the conflict which the human participants bring to an organization. Finally, and somewhat paradoxically, social systems are both longer- and shorter-lived than biological systems. Social systems components are much less tightly integrated, but can be replaced readily; biological systems components eventually wear out and generally cannot be replaced.

THE NATURE OF BUREAUCRACY

Most formal organizations which people in our society encounter are considered bureaucracies. According to classical theory (sometimes referred to as *machine theory*), the bureaucratic form of organization is based upon the following principles or assumptions:

- 1 A division of labor based upon specialization according to the function performed in the organization. It is assumed that efficiency can be achieved by dividing any operation into its elements. Persons possessing the requisite skills to perform each of these simplified elements are assigned the tasks in sequence. Work tasks become both simplified and standardized.
- 2 A well-defined hierarchy of authority. Officials in a bureaucracy exercise their authority solely by virtue of the organizational position they hold; their personal characteristics or family identities are not involved. Decision making is centralized, with person-to-person responsibility down a hierarchical line and a limited span of control.
- 3 A system of written procedures (rules). Officials are confined to administering and enforcing rules; they should not administer by personal judgment.

- 4 Impersonality as the rule in interpersonal relations. Officials administer rules objectively, neither playing favorites nor punishing scapegoats. Organization members are required by their superiors only to conform to work rules in the work situation; those above them in the hierarchy are not entitled to control their nonwork lives, nor may they depart from written rules in supervising their work situations.
- 5 Selection for the organization and the position and promotion to higher positions, based only on technical competence for that particular position. Each office or position has a clearly defined sphere of competence and is filled by appointment (not election) as the result of a free contractual relationship. Occupants of positions are remunerated by fixed salaries; a position is the sole or primary occupation of the incumbent. Only under carefully specified circumstances may the employing authority terminate the employment in that position, but the official is always free to resign. Employment in the organization generally constitutes a career.

This classical model of bureaucratic organization has been extensively criticized, both as to how modern formal organizations *ought* to function and how bureaucracies actually *do* function. In the light of the open-system model, classical bureaucratic theory completely neglects the vital interchange which must take place between the organization and its environment; it assumes a static, fixed environment and a rigid, unchanging arrangement of relationship of parts within the organization. Specialization of function among subsystems within the formal organization is neglected in the bureaucratic model. Classic machine theory depends solely on individual one-to-one relations down the hierarchical structure for organizational control, neglecting the organized maintenance and adaptive functions as well as the benefits of controlled and directed communication to motivate and direct the organization.

The most severe criticisms of classic bureaucratic organization have been directed at the dehumanizing effects inherent in such a scheme. The organization itself is viewed only as a machine, its members merely as adjuncts to machines. In the process of compensating for the dehumanizing effects of the older traditional and autocratic systems, the classic bureaucratic system carried impersonality and objectivity beyond even the point of organizational efficiency.

What is more, modern bureaucracies do not operate this way (if they ever did). In bureaucratic organizations everywhere the rigid, impersonal formal organization is supplemented by a very personal system of informal relationships. For many people the principal satisfaction derived from

their job with a large bureaucracy comes not so much from their work task accomplishments but from the informal association with members of their work group. Most of the effective functioning of certain large but unwieldy bureaucracies does not come through the formal hierarchical control structure; rather the system is made to function by tyrannical people who circumvent formal rules and the hierarchical chain of command to expedite the needed resources; this is usually accomplished through a network of personal friends and acquaintances. Finally, a great many, if not most, of the administrators who survive in a large bureaucracy learn the merits of applying organization rules flexibly, at least for members of the organization if not for clients.

The Future of Bureaucratic Organizations

Despite the evident shortcomings of the bureaucratic organization form, some students of formal organization predict it will continue to dominate in many functional areas into the foreseeable future. Bureaucracy is believed to be the most efficient structure available for many types of low to moderate skill activities. The more routine functions of hospitals, testing laboratories, insurance companies, and government regulatory agencies will probably continue to be organized bureaucratically, to cite a few examples. The impersonality and rigidity associated with such organizations are being replaced by more informal and informed interpersonal relationships up and down the hierarchy; adaptive and maintenance structures within such organizations are receiving more attention and development. However, the basic bureaucratic structure may well remain and prove to be rather durable.

It is assumed that physicians in training will increasingly need to work with (and within) formal bureaucracies during their professional lifetime. Bureaucratic organization, as it has been practiced, has not proved to be particularly adaptable to high technology, professional activities. Engineers, physicists, and chemists have found it necessary to deal with bureaucratic structure for a longer period of time than has been the case for most other professionals. Some structural forms have evolved from this association which could prove useful to physicians and other professionals. Highly technological, professional, interdisciplinary activities have frequently been organized in a reasonably satisfying manner by use of a temporary, task-oriented, leaderless small group structure, which draws upon the resources of members of several disciplines who have approximately equal occupational status. The group is formed for the purpose of completing a single, well-defined, short-range task; thus, the limited-life feature of the group is built in from its inception. Hierarchical

structures do not have time to develop, nor are they needed. Nonprofessional support personnel provide needed auxiliary services, and a modest administrative component attends to the maintenance, adaptive, and routine governance functions. Comparable organizations might be found (or developed) in the medical field among small numbers of physicians engaged in a group practice, among specific-task-oriented hospital committees dealing with technical matters, and among task- or mission-oriented research and project review committees within government or university bureaucracies. Further development of this organization form for use in complex-technology professional activities deserves careful consideration.

GUIDELINES FOR PROFESSIONALS

Most production activities of any large formal organization are carried out by small, informal, personally interactive work groups. (Examples: surgical teams, physician-nurse-receptionist clinical groups, laboratory research teams.) It has been found that two types of leadership develop spontaneously and simultaneously in such groups. The first type focuses on the work tasks to be accomplished by the group; the second is concerned with the cohesiveness of the group and the personal and social needs of its members. Task leadership and affective leadership may be found in the same person but more usually are not. More often one member of a group develops as the group's task leader, another as the group's affective leader. In a health care setting a physician often emerges as the task leader, while a nurse develops as the affective leader, and both these functions are vitally important to the success of a work group. Group members and the larger organization should encourage the development of such leadership; the task and affective leaders should look upon their relationship as complementary rather than competitive.

The primary mission of formal social organizations is to develop and maintain a reasonably harmonious accord between group objectives and the need-satisfaction of members. Some see this primarily in terms of exchange: wages and intangible job satisfactions are exchanged for a work contribution to the organization of equivalent value. Others see human affiliations as the basic motivating force which binds members to the organization; they claim either that there is no essential conflict between group and individual goals in a well-run organization or that the organic nature of an organization run as an open system will result in the eventual harmonization of goals. Still others claim that the goals of modern formal organizations inherently clash with personal needs; the value system of the bureaucracy itself will need to be changed to solve the problem of motivation.

Simple, straightforward solutions to the problem of harmonizing group and individual objectives are not likely to be found. Members of the most productive groups, for example, are often found to be moderately (but not grossly) dissatisfied; highest job satisfaction does not necessarily correlate with highest productivity. It appears highly unlikely that any simple motivational approach will be found to be "the best," even in a simple, closely specified situation. Further, incentives which motivate most effectively in routine work may be quite different for highly skilled or creative work. For workers in routine jobs, comfortable, socially congenial working conditions plus economic security loom most important; for professional and managerial persons these factors are a source of dissatisfaction if they are absent, but they do not necessarily produce job satisfaction if they are present. Professional and other highly skilled workers also expect personal goal fulfillment from their job accomplishments.

Professionals who find themselves in organizational situations in which they are called upon (at least in part) to act in group leadership or managerial functions might find the following points useful. Since the needs which people seek to fulfill in a job or other organizational position vary so greatly, it is important to try to cast off the stereotypic ideas about job motivation so common in society. A more effective approach is to develop the trust aspects of personal organizational relationships to the point where individual job and career aspirations can be discussed reasonably freely. In part, development of trust relationships can be assisted by a reasonably open attitude on the part of the professional person, especially at the beginning of the association. There are, of course, severe restrictions placed upon the utility of openness in interpersonal relations in a formal organization: most relationships in such organizations are essentially competitive; commitment of the whole self to the organization is usually neither expected nor desired, and a cooperative value is seldom written into a job description. Nonetheless, a degree of openness early on in such relationships can prove to be more effective in building a trusting, concerned, cooperative understanding than even massive revelation of self later on. It is helpful to try to limit that part of organizational behavior which is rigidly specified by rules to the absolute minimum; individual variability and innovation should be encouraged whenever possible. Significant evidence points to the possibility that managers and group leaders can successfully involve themselves both with concern for people affected by the organization and concern for organizational goals at the same time.

In general, the stereotype of the gruff, impetuous, temperamental organization executive, making sweeping decisions on the spur of the moment, is not borne out in real life. On the other hand, most bureaucrats do not fit the image of the mousy, indecisive, insensitive stereotype either. A substantial premium is placed upon blandness in executive decision mak-

ing, provided it is accompanied by carefully reasoned conclusions and a concern for the people affected.

PEOPLE AND FORMAL ORGANIZATIONS

The segmental commitment of self to a work organization, so characteristic of modern bureaucracy, can become an enormous source of frustration to many people. Except for a relatively few highly skilled and creative activities, most work organizations ask for the commitment of only a part of a person's interests, skills, and time; indeed, such organizations usually cannot utilize the complete commitment of self offered by persons "whose whole life is tied up in their job." On the other hand, personal identity and status for adults in our society depend almost completely upon one's association with occupation and job position. The very first question usually asked of a new acquaintance is, "What do you do?" The hierarchical ranking of a great variety of occupations is one of the most stable, agreed-upon public opinion measures found in all modern industrial societies. Climbing this hierarchical ranking constitutes one of the most sought-after goals in our achievement-oriented society. Yet, as an all-encompassing goal in life, the quest comes with built-in frustrations. Seldom can any job encompass all of one's principal interests and talents. The occupational status ladder narrows very sharply toward the top; most occupational status climbers are bound to fail in their quest. For this reason, education will not prove to be the powerful occupational status mover in the future as it was for past generations, and jobs will utilize even less talent and training than in the past. Finally, job as the source of status, identity, and community standing is largely cut off by disability, acute illness, unemployment, or forced retirement.

The frustrations arising from the limited capacity for personal satisfaction found in most jobs, and the inevitable forced separation from even the most satisfying occupations can obviously be thwarted by diversification of personal goal commitments and planning for changing or evolving goals throughout one's career. Since few jobs utilize the jobholder's full range of talents, interests, and training, and because each person to some degree must be socialized or molded to the organization's purposes if the organization is to survive, strains and interest shortcomings need to be relieved in extraoccupational activities. Usually these avocational and family activities must provide both interest satisfaction and status of some sort. The intense satisfaction that some people derive from hobby clubs, competitive displays of personal prowess, and formal community associations can be explained in part by the alternative source of status such activities provide.

This is not the only effective strategy available, however. Even if work functions do not directly satisfy the full range of a person's needs, the work organization itself can be a potent source of need fulfillment in other ways. Many employees, even those who feel they exercise little power or influence in the work organization, gain vicarious satisfaction from feelings of pride and responsible concern for the organization with which they have long been associated; this often continues for many years after they have retired from active participation. In particular, such employees come to feel they play an important part in meeting the organization's maintenance needs in relation to the larger community; indeed they often *do* play an important role in this respect.

Opportunities for socializing in the small, informal work groups within a larger organization can also provide a large measure of satisfaction to individual participants. There are substantial hazards involved, however. Such groups can promote alienation, apathy, and anomie just as effectively as they can build positive satisfaction. Further, the positive satisfaction provided by the work is largely lost upon retirement, disability, unemployment, or prolonged illness.

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13

A Systems Theory Approach to Understanding Behavior

Frank T. Rafferty, M.D.

General systems theory is less a theory than a method of thought for the student learning to become a physician. As a method of thought it reflects the need of the student and practitioner of medicine to gain a perspective on the phenomenal world that transcends the view from any specific theoretical discipline, basic science, or cultural membership. Medicine and psychiatry are in part applied sciences, but these intriguing vocations simultaneously embody several varieties of social roles and social institutions. On other, perhaps nonprofessional, occasions, the physician's behavior may relate to other social roles, such as parent or spouse, and at still other times may be unique, idiosyncratic, or particular for time, person, and place. The important objective for the student is to have a method of locating and informing his behavior with respect to the phenomena he confronts in everyday practice. No matter his age or level of education, no student can start from zero since at the very least evolutionary time and process have built in nonrandom behavior patterns. His two decades of social living have further shaped philosophy, attitudes, and values to such a degree that much of the medical and psychiatric education will be assimilated to the previous knowledge and attitude structure. In such situations becoming a physician becomes the acquisition of techniques, procedures,

and social validation. To the extent that the student becomes interested in the phenomena of people's behavior as whole individual persons or of behavior between individuals and among groups of people, there will be curiosity about the location and shape of self and others with respect to the organized complexity of scientific knowledge of behavior. General systems theory in this sense and use represents a plan or map for beginning to develop awareness of the location, the shape, the levels, the influences, and the sources of behavior.

ENTRY

Entry into a general systems approach to understanding behavior is necessarily general and abstract and therefore requires forbearance from those anxious to acquire tools of control in the real world. A critique of general systems theory would suggest that this generality and abstractness deprives the theory of useful content and of fertility in generation of new concepts. In fact, much of the conceptual power in general systems theory is derived from the specialized scientific disciplines of physics, chemistry, biology, psychology, sociology, and economics. The purpose of general systems theory is to protect the student from identifying the perspective of any discipline with the totality of world phenomena and to provide avenues of transition from one body of knowledge to another. For the student physician emerging from a hard science culture, it is particularly valuable to provide a route to the use of the social sciences and the new disciplines of cybernetics and information theory.

General systems theory begins with the epistemological questions of the nature and source of knowledge. The basic premise is that all knowledge is the product of the acts of knowing of some human individual acting in some human social group. Knowledge is dependent on the human acts of observation, perception, differentiation, naming, categorization, defining, remembering, measuring, comparing, and the transfer of the result through the mediation of language and the techniques of communication to others. All of these processes are modified and limited by the position of the individual observer, learner, and communicator in time and space [3].

It follows then that knowledge is not the absolute ultimate facts of reality, but those facts and relationships as known by human behavior. As such, they are subject to error and therefore to continued reexamination. Pragmatism would hold that their correctness is measured and limited to their effectiveness in the solution of specific problems. If the problem changes or the effective control of problems slips, then the knowledge must be reexamined.

The origin of knowledge in an individual's act of knowing perhaps accounts for the stages in development of knowledge. At first, self-conscious knowledge appeared to be about self-contained units or entities. The characteristics of the essence of these entities were described in great detail. It was assumed that the essence of an entity was contained within and manifested itself in the behavior or phenomena attributed to the entity. Although science has for the most part abandoned this perspective, much folk wisdom, some religions, considerable law, and a number of popular psychotherapy approaches still depend to a greater or lesser degree on the presence of some specific human essence, life principle, or "real self."

This study of self-contained entities was replaced by the rigorous examination of the influence that various units or forces could have on one another. The interaction of two variables, controlling for extraneous influences, became the paradigm of hard science and led to the magnificent growth of major bodies of scientific knowledge, especially in chemistry, physics, and astronomy. The life sciences of biology and the social sciences found the constraints of the two variable paradigms difficult and inappropriate.

General systems theory, in following this evolution of scientific methodology, focuses neither on entities nor on two factor problems, but on organization per se. Organization is the pattern of relationship between two or more units or variables, or the dynamic transactions between the whole and its parts. The term *system* may be utilized to denote the target of study — an organizational whole made up of a number of interrelated components; it represents an extraordinarily general, abstract concept with almost no specific content. Consequently it can be applied to an endless array of phenomena. The human individual may be called a system, but the cell and the family are also systems. There are material, inanimate systems, such as a car, a nuclear reactor, or a solar system. There are abstract or symbolic systems, as in linguistic theory, music, or religion. There are mixtures of physical, animate, inanimate, and abstract, as in the ecological system of a lake. The requirement for designating a system is the awareness of an organization of two or more interrelated components. Then there comes the task of defining the boundaries of the system, the component parts, the interrelationships of the part to the whole and the parts to each other. [1].

As the observer examines the various real and symbolic, live and inanimate phenomena and designates multiple systems, he should soon become aware that systems can also be related one to another. A common form of relationship is the hierarchical nesting of systems, in order of complexity, in which a system with definable interrelated parts is itself definable as part of a larger, more complex whole, which in turn will be

part of a larger, more complex system, and so on. The hierarchical array of systems most useful for the student of behavior is: the cell, the organ, the organ system, the individual, the family, the community, the society, the culture. Each system is in turn a subsystem of the higher or more complex level of organization, while reciprocally each system is dependent upon those interrelated parts that compose it [7].

Much research effort to understand human behavior has been lost or wasted for lack of attention to the structured hierarchy of functioning systems. Obviously, any human behavior depends on the complex, simultaneous functioning of the whole array of systems. It is patently foolish to try to establish schizophrenia, for example, as only a genetic flaw, or as a biochemical error or as the result of learned patterns of behavior, or as a resultant of disordered communication in the family dynamics, or as a manifestation of social oppression. Any and all of these system levels are legitimate targets of study. In fact practical treatment probably intervenes on most of these levels. The cognitive problem is to conceive of the whole not as a simplistic entity, but as an organized complexity.

SYSTEM ANALOGUES

The next step in understanding a systems approach to behavior is crucial and contains the problem that may be most controversial. Once a system is defined as a set of interrelated units, parts, or components, one can begin to perceive that certain kinds of relationships characterize the system, and can be abstracted or generalized to apply to all systems or levels of systems [4]. A simple but abstract and difficult property is relation to time. People live in a sea of time-related variables. Time is a fundamental relationship in physical systems, as in the solar system, in complex man-made systems, as in the countdown for a space mission, in the life of a human individual, or a butterfly, and in social systems, as in the history of a country or strategic timing of a political announcement. The property of ordering by time is a characteristic of all systems. In psychiatry, the age of the patient, the developmental history, the social history, the development of the presenting problem, the precipitating event, the timing of drug administration, and the length of hospital stay are all time-structured variables.

But a vital differentiation must be attended to meticulously in applying the general or abstract properties of relationships, which are conceptualized as relational isomorphisms or analogies. They are not identities, physical or metrical isomorphisms, or homologies. Geologists use time-relational concepts to describe the development of mountains, as do biologists to describe evolution, and embryologists in the processes of reproduction, pediatricians in the management of a newborn nursery, and psy-

chiatrists in the treatment of neurosis. But in each of these the physical units of measurements are different. In fact, the valuable distinction between structure and function that helps us organize our knowledge, as in anatomy and physiology, can be considered as time-determined. In those relationships described as structural, the changes take place so slowly, by usual measurements of time, that they are practically imperceptible to an observer, while those relationships described as functional or process change more rapidly. The units of time used by an observer to describe, record, or measure the relationship between system components will precipitate relative and subjective descriptions.

A significant example of relational problems based on the use of different time scales is provided by the processes of government in the nation's capital. The term of elected office is the essential unit of time that organizes the behavior of an elected official. The congressman, the president, and the senator move in different time frames — two years, four years, and six years, respectively. The person who would like to influence the political process will be totally dismayed, frustrated, and ineffective if he does not build this relational variable into his calculations.

The general problem of analogies, isomorphisms, or models in general systems theory is either the prime contributor to the power and fertility of the theory or is such a fundamental logical error that the theory is invalidated. Some of the most useful isomorphic properties to describe systems are those that may be termed *boundary properties*. Obviously the action of differentiating a system with delineated components immediately divides phenomena into two classes — those relational units within the system and those units outside the system — and defines a boundary between the two. Some boundaries are obvious, probably because of visible physical presence, as in the skin of a human individual. Other boundaries are more difficult to conceptualize, as in the boundary of the family. Some boundaries may be arbitrary, as in the boundary lines of a football field. Years of scientific effort may be necessary to learn the characteristic of certain boundaries such as the cell membrane.

Many of the most interesting therapeutic problems of medicine and psychiatry are boundary problems. The absorption of a particular drug from the gastrointestinal tract or the passage through the blood-brain barrier are well identified. But the family therapist also must be alert to the mechanisms by which people such as he himself or neighbors or the unborn fetus or the mature sibling move in and out of the family.

Input and output relations of any system may be described as boundary phenomena. The boundary is defined by those units and relationships that are different on the inside than on the outside. The boundary is further characterized by the pattern of things that can pass through the boundary. Energy, matter, information, and money flow across

boundaries and activate the processes of system. In conceptualizing the organization of systems these four concepts in a myriad of forms occupy analogous functional positions. Each of them can be produced, transported, converted, stored, and distributed. The measurement of these structural and functional analogies provides the quantitative aspects of systems theory and the delineation of boundaries.

Energy and matter are of course natural phenomena and most people are aware that their transformations make up the major part of physics and chemistry. Even in living systems, such as the human body, matter and energy concepts are commonplace in everyday language. The ingestion (input) of food (matter) and the conversion to calories (energy) by the digestive and metabolic processes of the body with the subsequent elimination of waste materials (output) is a familiar part of daily experience and conversation. Matter, thus, refers to all physical objects, animate or inanimate, alive or dead. Energy is the ability or power to do work and may appear in a number of different forms — mechanical, chemical, electrical, or atomic. Unfortunately, psychiatric theory has introduced terms such as libidinal energy, sexual energy, and psychic energy which cannot be used in systems theory because they are not measurable and do not refer to true energetic processes. It is true that the sexual system and the brain use energy like other systems, but the common psychiatric reference is more a symbolic description of motivation than of energy use.

Money is a fantastic invention of the human mind that serves as an analogue to energy and matter in social and economic systems. Of course it was invented, long before anyone conceptualized it as such, as trade and barter were invented. Energy and materials could be exchanged for a valuable, tangible, measurable symbol that could then be stored over time and transported over space. Money has become one of the most powerful variables to consider in psychiatric and medical practice. A number of diseases correlate with income better than with distribution of infectious agents, for example, respiratory diseases in infancy and tuberculosis. Intelligence in four-year-old children correlates more with the income of parents than the complications of the delivery or the perinatal period. The effectiveness of a system in accomplishing its designated goal may be highly dependent on the input and rate of flow of money. Hospital administrators must be as concerned about their input and cash flow from third-party payments as they are about the input of fresh new residents each year. For years physicians thought it intrusive to ask patients about their financial condition. Now it is well recognized that financial stress is a major contributor to many adaptive problems.

The most recent addition to these four fundamental concepts is that of information. As with the other analogues, information was around long before *Shannon and Weaver* [5] described their theory of communication.

Primitive man had techniques for communicating data that made a difference, data that reduced uncertainty. We can imagine a primitive resident of Olduvai Gorge clearly communicating "Run for your life" by some gesture, expression, or sound. After all, primates and other animals do so even now. But information theory introduces a different world in the conceptualization and quantification of information as the reduction in uncertainty when a sign, signal, symbol, or message specifies an alternative out of all those available. Examples range from a number on a die in a game of craps to the specific amino acid in a specific location on a DNA molecule. Information organizes energy, matter, and money controlling on the on-and-off nature of processes, by determining direction and quantity of flow, and by serving as a measure of complexity and predictability.

The input, output, boundary, and internal processes are, in living systems, in a constant state of interaction and change with one another and the environment over time. The requirements of input and output, the cost of functioning, the efficiency under varying circumstances are all indicators of functioning that are subject to discovery, measurement, and utilization in therapeutic endeavors. Any given system, when it is functioning well, will maintain these variables within a relatively narrow balanced range, which is the familiar process of homeostasis in the living physical system. The analogues are equilibria in nonliving physical systems and steady states in social systems. Regulatory processes maintain the balance by making adjustments. Changes beyond the usual range are engendered by unusual conditions and may be considered stress that produces strains in the balance of the system variables. Specific adjustment and adaptive mechanisms are called into play at that time.

The systems of greatest interest to the clinician are goal-directed systems and the guidance mechanisms are of special interest. A new scientific discipline of cybernetics has evolved around the concerns of self-regulation and self-guidance. Major attention has been devoted to the particular class of systems that utilize negative feedback mechanisms. Such systems feed back a portion of the output to the system input to counteract deviation from the goal or homeostatic balance [6]. Familiar examples are the thermostat and insulin control mechanisms.

APPLICATION

Much of the content of the previous chapters expanded on elements and relationships consistent with this hasty skimming of the introductory concepts of general system theory. But, in fact, general systems theory, though developed over the past thirty-five years, still is not the working theory of most clinicians. Too frequently translation of clinical problems

into the concepts of systems seems like a language exercise that adds little control over the phenomena. Computer simulation of human behavior and the intricacies of information theory have made inroads on understanding of cognitive and language functions. Also, major diagnostic tools have been made available to the clinical pathologist and radiologist. The biomedical engineer developing artificial organs is also well into physical and biological levels of general systems.

In psychiatry, family therapy and community psychiatry are commonly thought to involve a systems approach — while both lend themselves to systems language, actual practice has seldom utilized theoretical discipline. More frequently the concepts have been used descriptively to explain failure of the change process [2].

For example, in the treatment of individual patients the therapist will discover that there are destructive inputs or insufficient inputs from parents, spouse, or employers. Earlier theories such as psychoanalysis were equally attentive to these deficient or pernicious inputs but tended to focus on past influences. The contemporary influence of such past experience would be corrected in the therapeutic situation through the use of transference phenomena. This appears to be effective for enough people so that the concepts continue to inform a major portion of psychiatric practice. Most psychiatrists interested in general systems theory have come to that interest via psychoanalytic theory and continue to utilize those concepts to understand the behavior of the individual psychological systems. The concepts of superego, ego, and id should be considered as heuristic descriptions of classes of behavior of an individual rather than as inferred internal structures. The vicissitudes of libidinal and aggressive energy describe qualities of object relationships in great detail.

However, clinical practice quickly convinces the physician that the present social, economic, and informational environment, the inputs from the environment, and the constraints derived from the behavioral context are of at least equal importance to the internalized experience in the past. Many technical and procedural innovations of the past fifteen years have been directed at achieving some control over these contemporary ongoing forces. Behavior therapies focus relatively narrowly on some precisely delineated behavior and try to identify the environmental stimuli that reinforce, support, and shape that target behavior. If they can be identified they frequently can be changed by the significant responding objects in the environment. Or perhaps some counteracting aversive stimuli can be arranged.

Modern sexual therapies for such problems as frigidity, impotency, premature ejaculation, or nonorgasmic sexual relations have identified the sexually related pair as the minimum unit for treatment. Such symptoms appear to be the problem of the person, but they do not respond well to individual treatment. Conversely, attention to the mutual informational and

reciprocal sensory inputs of the sexually related pair can attain a high degree of success relatively quickly.

The family unit has been identified as a critical level of intervention in most areas of medicine and psychiatry. Even in the medical treatment of coronary infarct, cancer, or in the management of a terminally ill patient, the social and communicative inputs of the family are crucial. Unfortunately though, the word family is more often used in conversation to designate a collection of individuals who may live together and who probably have certain interactions than it is in the specific sense of the family system. It requires an extra cognitive effort to think of the family as a system. With the family considered as a unit, the behavior problem in one member may be a symptom of strain in family unit structure and function rather than an intrinsic illness of one individual member. Intervention must be arrived at by changing family structure, that is, the relationships between members. Recognizing the dependence of the family structure on the hierarchy of subsystems, it is frequently desirable to change the family structure by intervening at the cellular level in one of the individual members, for example, a psychotropic medication, an antibiotic, or digitalis. However, in many instances cellular interventions will be insufficient and intervention will be required at the family level per se. The chapter on family therapies will address itself to those strategies.

Similarly community mental health has the potential of defining a community system level where the stresses and strains at that level of organization may be manifested in people's behavior disorders. The actual practice of community mental health has not been able to sustain that potential for extensive periods or in large community systems. More frequently, as in family practice, psychiatric care is focused on the management of persons in a community rather than on the community as the system. Realistically, the structure of community systems is beyond the mandated authority of social scientists, physicians, or psychiatrists. In fact intervention to change community structure appears to be difficult for even our highest political and judicial offices.

General systems theory is much like mathematics — it can be learned only by its use in solving problems. In other chapters of this volume it will be instructive to use the discipline of systems thinking to provide, at times, a different perspective. Even if a ready solution is not offered, a general systems approach will, at the least, more clearly delineate the gaps in data.

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14

Contractual Aspects of the Doctor-Patient Relationship

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The practice of medicine is based upon the relationship that is formed between a physician, the provider of health services, and a patient, the consumer of these services. This fundamental — doctor-patient — relationship represents the requisite condition for rendering effective health care. It presents many complex aspects including interpersonal, psychodynamic, financial, moral, ethical, legal, humanistic, and philosophical. It is imperative that the medical student, in the process of becoming a physician, acquire a complete understanding of the complex nature of this relationship and develop a deep appreciation for its significance in the practice of medicine. The contributions included in this section of the book deal with the various aspects of this relationship, as well as with many issues that impinge upon it directly or indirectly. This chapter focuses on the fundamental aspect of the doctor-patient relationship as a contract established between the physician and his patient.

The term *contract* is defined as "an agreement between two or more parties for the doing or not doing of something specified." The contracting parties committing themselves to the agreements inherent in the doctor-

patient relationship are basically the physician and the patient. In the case of hospitalized patients, and in general of patients receiving institutional care, the institutional provider of health services is also a party in the contract. The family or the guardian of a patient may also enter the contract, especially in the case of minors or persons with temporary or permanent incapacitation that impairs their competence to understand fully and/or appreciate the nature and consequences of the contractual aspects of their relationship with the health care providers. Since there is generally no signed document legally binding the two parties to the agreements inherent in the doctor-patient relationship, it is understood that the contractual nature of the relationship is implicit and is inferred by both parties to mean the rights and obligations regulating their relationship. There are prescribed roles that determine the behaviors of both physician and patient, and there are mutual expectations in regard to the fulfillment of the terms that are necessary in order to achieve the objectives defining the relationship, the basic objective of which is to provide the patient with health care services. In order to accrue these services, a person agrees to enter into a relationship that defines his role as a patient, either because he identifies himself as sick and in need of help or because he seeks professional advice in order to promote his personal health and welfare, or that of his family and significant others. In agreeing to assume the role of the patient, a person seeking health care enters into a transaction with a health professional with a set of expectations which include not only the delivery of the services he needs — with a level of quality that meets the standards of his community — but also how these services are delivered to him. In addition to technical medical skills, the physician is expected to abide by professional standards of conduct in the delivery of his services, including appropriate interpersonal and communicational skills, proper attitudes, desirable personality attributes, and moral and ethical values. All are necessary for the establishment of an effective doctor-patient relationship and contribute to the attainment of competence.

In this unique transaction, the patient allows the physician to invade temporarily the privacy of his body and mind and willingly surrenders to the physician his inviolable human right to privacy. He places himself in a vulnerable situation which, potentially, may result in personal injury or damage. The physician is permitted to probe into the most intimate and private aspects of the patient's personality, to scrutinize his habits, relationships, and attitudes, including his sexual interests and performance, and to inquire about his financial status. He may also touch and manipulate the patient's body, insert instruments through body orifices, and use other invasive procedures as needed. Finally, he may allow his physician to make decisions for him and perform procedures on his body that may result in his death, if not in serious damage and incapacitation. In many

instances, being ill and in desperate need of help makes the patient psychologically vulnerable, a state that is characterized by regression, extreme dependence on the physician, and potential danger to the patient of exploitation, abuse, or infantilization. The physician-patient relationship is, therefore, one of the most unusual contractual relations in human transactions — on one hand, there is so much at stake for the patient and, on the other, so little in formal definition of the terms of the contract for the physician.

Physicians, as well as other health care providers (hospitals, nursing homes, and so forth), have made efforts, through their professional organizations, to formulate various sets of principles which purport to serve as guidelines in defining the implicit contractual aspects of the doctor-patient relationship. These principles are intended to establish a codification of certain behaviors and attitudes which are viewed to be appropriate to this relationship and to provide the basis for the ethical and moral standards of medical practice. As is clearly stated in the preamble of the "Principles of Medical Ethics" of the American Medical Association (AMA) [1], "they are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public." Nevertheless, the general public has had very little input into the formulation of these principles. The consumer movement in medicine has been an active advocate of patients' rights, and has initiated an impetus for the establishment of formal federal and state regulations mandating the standards of the doctor-patient relationship.

HISTORICAL REVIEW

The first code, that of Hammurabi, set forth in considerable detail the nature of conduct demanded of a physician. However, the most significant oath in the course of medical ethics through the ages, in all cultures, is that of Hippocrates. It has remained the Medical Decalogue, universally accepted as such. The Hippocratic Oath, pledged by young physicians upon graduation from medical school, affirms their adherence to professional standards and ethics and shows that many of its rules are still relevant. The oath reads as follows:

I swear by Apollo Physician and Asclepius and Hygieia and Panacea and all the gods and goddesses, making them my witnesses, that I will fulfill according to my ability and judgment this oath and this covenant:

To hold him who has taught me this art as equal to my parents and to live my life in partnership with him, and if he is in need of money to give him a share of mine, and to regard his offspring as equal to my brothers in

male lineage and to teach them this art — if they desire to learn it — without fee and covenant; to give a share of precepts and oral instruction and all the other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law, but to no one else.

I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice. I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art. I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work.

Whatever house I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves.

What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself holding such things shameful to be spoken about.

If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot [14:13–14].

In spite of the anachronism that characterizes some of these rules, the Hippocratic Oath promulgates several fundamental principles: It clearly recognizes the power of the physician inherent in the doctor-patient relationship and serves as a warning to him against its abuse. Also, it brings out the patient's fundamental need to place himself under the physician's care with complete trust and confidence and emphasizes those behaviors the physician must practice to enhance the development of a trusting relationship: treat the patient according to his best ability and judgment; protect the patient from injury or harm as a consequence of his medical intervention; respect the sanctity of life and attempt to preserve it in all circumstances; recognize the range and limitations of his skills and the need to refer the patient to another professional when appropriate; enter the relationship with his patients without any prejudice; adhere to an absolute confidentiality with regard to all information that he obtains in the course of his interaction with the patient; maintain the highest moral and ethical standards in his personal life; abstain from all intentional acts that may have, directly or indirectly, a detrimental effect on the patient's welfare; and assume full responsibility for his failure to maintain these standards and accept the consequences of failure.

The earliest statement of a Chinese medical ethic, dating from the seventh century A.D., is that of Sun Ssu-miao, frequently called the father

of Chinese medicine. The following excerpts reveal the wisdom and ethical insights of a millennium of Chinese medical practice:

Medicine is an art which is difficult to master. If one does not receive a divine guidance from God, he will not be able to understand the mysterious points. A foolish fellow, after reading medical formularies for three years, will believe that all diseases can be cured. But after practicing for another three years, he will realize that most formulae are not effective. A physician should, therefore, be a scholar, mastering all the medical literature, and working carefully and tirelessly. A great doctor, when treating a patient, should make himself quiet and determined. He should not have covetous desire. He should have bowels of mercy on the sick and pledge himself to relieve suffering among all classes. Aristocrat or commoner, poor or rich, aged or young, beautiful or ugly, enemy or friend, native or foreigner, and educated or uneducated, all are to be treated equally. He should look upon the misery of the patient as if it were his own and be anxious to relieve the distress, disregarding his own inconveniences, such as night-call, bad weather, hunger, tiredness, etc. Even foul cases, such as *nicer*, abscess, diarrhea, etc., should be treated without the slightest antipathy. One who follows this principle is a great doctor; otherwise, he is a great thief. A physician should be respectable and not talkative. It is a great mistake to boast of himself and slander other physicians" [14:19-20].

HUMANISTIC ASPECTS

The AMA Principles of Medical Ethics state, "The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion." This statement implies that the medical profession serves a vital societal function in that man's health, which is one of the most precious aspects of the quality of human life, is entrusted to the care of physicians. The assumption of such responsibility demands of the physician dedication to serving people, devotion to the care of those in need of help, compassion for those who suffer, trust in the goodness of man, appreciation of human life, and respect for the dignity of man. The human aspect of medicine is far more basic in everyday practice than all the truly magnificent progress that science has achieved. Without this knowledge the physician would be utterly helpless, but without the humanitarian motivation which led him into medicine he would become an impersonal technician devoid of his fundamental significance [6]. It is essential that the physician relate to his patients and evoke trust, accept and tolerate, and show respect for the patient's individuality. Although care, attention, and understanding are potent factors in the doctor-patient relationship,

they must be genuine and personalized in order to be effective. Feigned attitudes and gratuitous gestures rarely pass undetected and often serve to damage the physician's credibility. Interpersonal and humanistic competence on the part of the physician demands more than mere style; it requires a capacity to give and care and a commitment of both interest and effort. Francis Peabody said, "the secret of the care of the patient is in caring for the patient" [25:877]. However, patient care is an experience in vacuum unless it stems from one's basic capacity to care for his fellow men. It presupposes a level of humanistic development in the personality of the physician that transcends the narcissistic investments of the self and affords a collective consciousness of mankind. It also presupposes the acquisition of values and moral development that views all human life as an extension of the self, a vision that is enlightened by capturing the meaning of humanness as a unique value and as a quality which, by its nature, is meant to be shared. It is this basic humanistic attitude that gives real meaning to the "contract" in the doctor-patient relationship.

For Heidegger, "when fully conceived, the care-structure includes the phenomenon of Selfhood" [19:370]. Care, also in Heidegger's concept, is the source of conscience; "conscience is the call of care" and "manifests itself as care" [19:319]. Elaborating on Heidegger's ideas, Rollo May [22] points out that care is a function of the whole person, and is ontological in that it constitutes man as man. He argues that "when we do not care, we lose our being; and care is the way back to being" [22:290]. May also writes, "Care is a particular type of intentionality shown especially in psychotherapy. It means to wish someone well; and if the therapist doesn't experience this within himself, or doesn't have the belief that what happens to the patient matters, woe unto the therapy. The common, original meaning of 'intentionality' and 'care' lies in the little term 'tend,' which is both the root of intentionality and the meaning of care" [22:292]. Continuing this existential approach to caring, Rollo May refers to Søren Kierkegaard's concept "in love every man starts from the beginning." He writes, "This beginning is the relationship between people which we term care. Though it goes beyond feeling, it begins there. It is a feeling denoting a relationship of concern, when the other's existence matters to you; a relationship of dedication, taking the ultimate form of being willing to get delight in, or in ultimate terms to suffer for, the other" [22:303]. He further draws a clear distinction between care and sentimentality. "Sentimentality is thinking about *sentiment* rather than genuine *experiencing* the object of it . . . Sentimentality glories in the fact that I have this emotion; it begins subjectively and ends there. But care is always caring *about* something" [22:291]. He further views Paul Tillich's term *concern* to be a synonym for care. Although *compassion* — a "feeling with" someone — has a

similar meaning, it is already an emotion, a passion which may come and go. On the other hand, care is ontological and refers to a state of being.

Compassio medici refers to the humanistic attitude in medicine that reflects care for the patient. The capacity to care for the patient has been viewed, through the centuries, as a valuable attribute and a necessary aspect of the doctor-patient relationship [30]. During the prescientific era of medicine, *compassio medici* was the most important, and in most instances the only, contribution a physician could make in caring for his patients.

With the Flexnerian revolution in medicine (Flexner Report, 1910) [15] and the subsequent developments in scientific research and biomedical technology, the "healing art" became science, based on principles derived from controlled observations and experimentations, laboratory procedures, and technical proficiency. The enormous gains in the treatment and prevention of diseases that resulted from these developments have eminently improved the quality of medical care in terms of effectiveness and technical efficiency. However, along with progress there has been diminishing emphasis on the approach to the patient and gradual disappearance of the "old personal touch" from the doctor-patient relationship. Modern medical practice has been criticized for being impersonal and disease-oriented rather than person-oriented, for disregarding the psychological needs of the patient, and for obliterating the social, cultural, and humanistic perspective of the patient in his relationship with the physician. This dehumanized aspect of the contemporary practice of medicine has been attributed to the sociocultural change that has been brought about by the technological revolution of our times, which affects every aspect of our life, including medical education. It has become apparent that medical educators often pay little attention to the approach to the patient, focus primarily on laboratory findings — to the relative neglect of the patient's personal history and the clinical findings — and foster an impersonal attitude by the example they provide during bedside teaching [24].

Becoming a physician involves a "professionalization process" in which the medical student and young doctor, through their exposure to the institutional "climate of values," acquire by identification the attitudes, roles, and values of their mentors. For instance, the development of cynicism in medical students during the course of their medical education that has been shown by sociological studies [9,13] is one example of this influence. It is interesting, however, that the development of cynicism has been interpreted by others [7] as part of the student's maturation as he adapts to the medical school experience, reflecting the replacement of youthful idealism by greater realism — a change which is thought

to reflect an ostensibly healthy expression of the maturing process as a clinician.

The rapid decline of humanistically oriented physicians appears also to be, in part, a function of the selective process exercised by the admission committees of medical schools, as well as other extraneous influences. Changes in the organization of medical services, governmental intervention in health care provision, malpractice litigations and the resultant "defensive practice of medicine," as well as shifts in medical practice itself — including increased specialization, reliance on laboratory tests, and doctors' heavy patient loads — may all contribute to the dehumanization of medical practice. Nevertheless, it appears that the pervasive process of social change that is affecting society and our institutions is largely responsible for the loss of the humanistic perspective in medicine. This phenomenon can be fully understood only within the context of a rapidly evolving social milieu that is shaped by technology.

It is assumed that contemporary man is experiencing the impact of the technological environment he has created. In the "anomic loneliness" and powerlessness imposed upon him by a technocratic society and a dehumanized ecology, the alienated man has lost the experience of intimacy, togetherness, caring for someone, and participation in his culture as part of a meaningful and symbolically relevant social matrix. The dysfunctional social structure that has resulted from expansive industrialization and technological revolution has been viewed as creating a dissociation between culturally defined aspirations and socially structured means to achieve these aspirations, leading to the inaccessibility of the available avenues for attainment and self-fulfillment [8]. It is this process that, according to Durkheim [12], has produced modern man's isolation from traditional society and resultant state of anomie, through the alienating influences of industrialism, secularism, and mass democracy. With urbanization of industrial man, the disappearance of close relationships between people and the dissolution of the extended family have resulted in cultural disaffection. People are becoming increasingly estranged from themselves and others, a phenomenon that Erich Fromm attributes to the loss of control over a complicated social machine [16]. What is new about alienation in our modern society, Keniston [21] points out, is a sense of estrangement secondary to affluence, increasing rates of social change, lack of creativity at work and a decline of utopian ideas. Manifestations of man's alienation from self are pervasively polymorphous, reflecting the universal presence of a permeating and everexpanding process leading to ecological and sociocultural breakdown. In the emergent social movement to counteract this process of depersonalization and dehumanization one observes the proliferation of encounter groups, the creation of communal

life styles, the popularization of quasi-religious methods that promise self-awareness and consciousness expansion, the renaissance of mystical religious interest, and widespread preoccupation with the occult. In medical schools, the movement has given impetus for the creation of behavioral science departments, the development of courses in humanistic medicine with an emphasis on human values and the quality of life, the concern with thanatology, gerontology, the problems of the technologically maintained "semiartificial man," and in general a concern for humanizing the practice of medicine.

CONFIDENTIALITY

The right of the patient to be secure in the privacy of his communications with his physicians has been recognized since ancient times. The creation of an affirmative and secure atmosphere of confidentiality encourages people to seek medical help when they need it without fear that there will be damaging disclosure to others. The patient's feeling that he can trust his physician to keep information confidential fosters open communication and allows him to be candid in revealing intimate and personal aspects of himself. The patient's freedom of self-disclosure maximizes the eliciting of information relevant to his care. The sharing of information that must be kept secret enhances the bond between the patient and the physician. In addition to the cathartic effect of self-disclosure, the patient's realization that he is understood and accepted becomes a source of strength for him. It is clear that this confidence must not be betrayed.

The confidentiality of private communication between the physician and his patient is generally recognized as a right and has received a measure of protection by government statutory regulations. This right represents an extension of the constitutional right to be secure in home and person, which is the basis of the general right to privacy all citizens are entitled to; however, this right may be waived in circumstances in which it becomes necessary to protect the welfare of the individual or of the community. In recent years, the right to confidentiality of medical information has been extended, in many states, to include minors seeking treatment for venereal diseases and for drug abuse. Under both the federal Constitution and the state Constitution, a patient has a right to privacy which encompasses the right to prevent disclosure and revelations made to a physician. The constitutional right to privacy was noted in the *Griswald v. Connecticut* (1965) decision [17] in which the U.S Supreme Court declared that "Various guarantees (of the Bill of Rights) create zones of privacy," and in the *People v. Belous* (1969) [26] decision. It was clearly recognized in

the *In re Lifschutz* (1970) [20] decision in which the court stated that "a patient's interest in keeping such confidential revelations from public preview, in retaining this substantial privacy . . . draws sustenance from our constitutional heritage," and "that the confidentiality of the psychotherapeutic session falls within the 'zones of privacy' guaranteed constitutionally." This right has recently been thoroughly explored in the *Roe v. Wade* (1973) [28] and the *Doe v. Bolton* (1973) [10] decisions in which, in striking down the abortion laws of Texas and Georgia, the Supreme Court again recognized the role of the constitutional right to privacy in the doctor-patient relationship. In these cases, the Supreme Court held that the right to privacy "is broad enough to encompass a woman's decision whether or not to terminate her pregnancy" (*Roe v. Wade*) [28]. Furthermore, in striking down the provisions of the Georgia abortion statute which required approval of abortions by specially formed hospital committees and a confirmation of the abortion recommendation by two licensed physicians, the Supreme Court recognized the patient's right to privacy in obtaining, unhindered by state interference, the treatment of her and her doctor's choice. In considering the committee approval provision of the Georgia statute, the Supreme Court noted: "The woman's right to receive medical care in accordance with her licensed physician's best judgment and the physician's right to administer it are substantially limited by this statutorily imposed overview" (*Doe v. Bolton*) [10]. As Justice Douglas explained in his concurring opinion, "The right to seek advice on one's health and the right to place reliance on the physician of one's choice are basic to Fourteenth Amendment values." He further noted that "The right of privacy has no more conspicuous place than in the physician-patient relationship, unless it be in the priest-penitent relationship." This right was further recognized in the *Roe v. Ingraham* (1973) case [27].

In psychiatry, the confidentiality rule represents the foundation upon which the practice of psychiatry, and especially psychotherapy, is based. It is the unfettered ability to maintain absolute confidentiality that allows the psychiatrist to create the therapeutic relationship with his patient. The following General Principles Governing Confidentiality were formulated by the Task Force on Confidentiality as It Relates to Third Parties of the Council of Professions and Associations of the American Psychiatric Association:

- 1 Every person has a basic right to the pursuit of health and happiness, and privacy is a necessary prerequisite for this.
- 2 Psychiatric practice cannot properly achieve maximal effectiveness except where there is a secure atmosphere of confidentiality.
- 3 We are, together with the patient, chief advocates of an affirmative atmosphere of confidentiality.

- 4 Any authorized release of information to a third party should be made only after full discussion with the patient.
- 5 Only the minimum information required to meet legitimate needs should be released.
- 6 We should never collude with the patient in making false representation to a third party.
- 7 In rare and special cases where danger to persons, self, or others is imminent and can no longer be handled in the context of treatment, our obligation to society requires that we break confidentiality, but only to the minimum extent necessary to protect life or property.
- 8 The psychiatrist has the responsibility to determine whether disclosure of information to family members or other third parties will work for or against the patient and his treatment.
- 9 The boundaries of disclosure to third parties should be determined with the patient in the early stages of treatment.
- 10 Blanket consent for release of information is never satisfactory. Patients should give specific consent each time for each disclosure to each third party; informed consent should be limited to the specific purpose at issue, and indicate that it is time-limited for the purpose of the claim.
- 11 Insurance companies and other third parties have a legitimate right to certain information about a patient and his treatment.
- 12 Information should be released in a way that will promote the best interests of the patient, and in such a way that it cannot be used against his best interest.
- 13 Information released to meet a legitimate need of a third party should be held in confidence by that third party. Such information must not be released to other third parties without the specific consent of the patient.
- 14 No person should be penalized by his insurance company because of receiving treatment.
- 15 Insurance cost accounting should always be made in aggregate without reference to confidential information concerning individuals.
- 16 Eligibility to obtain insurance or employment should be determined by examination for that purpose, not by reference on information from treatment.
- 17 National Health Insurance laws must have specifically detailed outlined legislative safeguards for the protection, gathering, storage retrieval and distribution of data about patients, and not be cloaked in general terms.
- 18 Schools and employers should get information about treatment only when such release is in the interest of the patient and must take into account that the patient's condition is subject to improvement. School and work records reflecting treatment must therefore not brand the patient unfairly with no longer current information. Furthermore, such records should be destroyed after an appropriate short interval.
- 19 We should apply these same general principles to the problem of privi-

- lege, which is a separate and distinct subcategory of confidentiality.
- 20 We should work for the strengthening of laws and procedures to protect privilege, confidentiality, and the privacy of our patients and to secure the support of the public including our patients in this effort [5].

INFORMED CONSENT

The patient's right to be fully informed about the course of his treatment and to take part in decisions about it has been gaining increasing recognition in this country. The social origins of the forces that have led to growing government legislation on informed consent and other issues concerning patients' rights encompass the rise of the human rights movement, including women's, minority, and consumer movements, the concern about abuses in medical research involving human volunteers, the ethical dilemmas created by the technological advances in medicine, the dehumanized approach to patient care, the public's demands for accountability, as well as the burgeoning malpractice crisis.

The principle of the patient's right to be fully informed about all issues concerning his health care challenges the traditional medical mystique which is summarized in the motto "the doctor knows best." It has been suggested that the rationale of this mystique has been that patients are not capable of knowing the discipline of the medical expert; they are not desirous of knowing or questioning, and further, they do not need to know; finally, patients require infallibility, preferring a paternalistic, passive-dependent relationship, and consequently they are unable to make critical judgments or be involved in decision making [23]. It is argued that patients are much more likely to be satisfied with the treatment they are offered if they understand both its benefits and its limitations. In the patient advocacy view, "perhaps the most important reason of all for respecting and fulfilling the patient's right to be involved in planning his care is that it is a statement of respect for the patient. It is a way of asking him to participate in deciding his medical fate as an adult rather than imposing a course of action on him as a child who must take instructions on faith" [23:5].

Free and open communication between the physician and his patient is vital to the success of the transaction. The physician's inability or failure to enter into an adult-to-adult relationship with his patient renders the relationship antitherapeutic in that it capitalizes upon the sick person's awakened need for an omnipotent and omniscient father, and therefore prevents him from assuming the necessary responsibility for his own health. In the case of those patients who temporarily regress to a dependent relationship with their physician, either because of the stress of a

serious illness, or because of the dependent nature of their personality, it is the physician's responsibility to recognize and appreciate, as well as to meet — to the extent justified by the circumstances — their dependent needs. It is also the responsibility of the physician, in such cases, to make every effort to foster the return to or growth of more independent and adult patterns of behavior, which is the prerequisite of successful rehabilitation.

Generally, patients routinely participating in the decisions concerning their health are more likely to change their health behavior if they feel they are invested in the decision. This can be accomplished by respecting the patient's right to be fully informed. The right to question a doctor is highly valued by patients who feel that they are constrained by the medical mystique. Patients have a right to information without the confusion of jargon and lingo. Even more important and subtle than the obfuscation of technical language is the emotional block that illness often brings. Patients often do not hear what their doctor tells them, because of their psychological need to obliterate from conscious awareness information that they are not prepared to handle. A common psychological mechanism used in such instances is denial. It is again the responsibility of the physician to recognize these psychological barriers in communication, appreciate their significance, and attempt to remove them when they are detrimental to the effective care of the patient and therefore maladaptive in nature. The physician-patient communication is not a one-way process but a dialogue, an exchange, a mutual participation, a partnership.

The issue of whether a patient has a right of access to his medical record remains controversial. So far, physicians and hospitals have denied this right to patients, on the grounds that the patient's access to information contained in the medical record may be to the patient's detriment. It is reasoned that patients do not have the necessary technical knowledge for understanding and appreciating the medical information contained in their records, and thus, should this information become available to them, they may become subject to misunderstandings and misconceptions detrimental to their care. Furthermore, records may contain interpretive data about the patient's health, personality, and family that may be misconstrued by the patient as being judgmental or having labeling connotations, or they may contain potentially threatening information about him that he is not prepared to handle psychologically. According to this viewpoint, the medical record is the exclusive property of the physician or of the hospital and, therefore, patients can be legitimately denied any access to it. However, various "patient advocates" [23] point out that health care providers decide unilaterally what information they are willing to give to patients and challenge whether or not it is their right to make those decisions. They contend that voluntary bills of patients' rights adopted by

organized medicine in this country are not patient-oriented. They are primarily intended to protect the physician and the hospital from potential litigation, to the neglect of the patient's right to have full access to any information about him, especially in regard to the quality of care he received. Further, it is unfair that the patient is continually asked to sign authorization of release of information from his medical record to a host of agencies when he has no idea of what is contained therein.

Informed consent is a special category of the right to be informed applicable to patients receiving institutional care and participating in research projects as human volunteers. It means the competent, knowing, and voluntary assent of a person on whom a medical procedure is to be performed, as evidenced by a document signed by such person. It is a signed contract with legally binding enforceability of the terms contained therein, as compared to the implicitly contractual agreement characterizing the doctor-patient relationship in general. The various requirements pertaining to informed consent, in situations involving institutional care or human experimentation, are governed by mandatory federal and state regulations or voluntary codes such as the American Hospital Association's. In recent years, state legislatures have been establishing, in increasing numbers, statutory regulations purporting to protect the right to informed consent of patients receiving care in various health facilities (general hospitals, mental hospitals, nursing homes, and so on). The basic elements for informed consent include: (1) a reasonable explanation of the procedures in as timely fashion as circumstances permit and their purposes, including identification of those procedures which are experimental, irreversible, or have serious or probable adverse effects; (2) a description of attendant discomforts, disadvantages, and risks — long and short term — reasonably to be expected, including the assessed risk of failure; (3) a description of benefits reasonably to be expected; (4) a disclosure of reasonable alternative procedures; (5) inviting and providing answers to any inquiries concerning the procedures; (6) instructions that the patient is free to withdraw consent and discontinue agreement to the procedure at any time without prejudice regarding receipt of such alternatives as may be available within the health facility. In Maryland these regulations require the establishment of an informed consent committee by each health facility under state jurisdiction, with the purpose of providing continuing assurance of compliance with established policies pertaining to obtaining informed consent for all medical procedures. They require that such consent be obtained from every patient or, where appropriate, from the parent of a minor or the legal guardian of an individual who has been declared to be incompetent due to physical or mental incapacity or age by a court. The consent must be witnessed and signed by the person directing the procedure and by an impartial third party, and a copy of the

consent must be given to the patient. Federal regulations governing human experimentation have introduced stringent requirements for informed consent. These regulations require the establishment of a human volunteers committee charged with the responsibility of screening, approving, and monitoring every research activity involving humans — with special regard for informed consent — in institutions engaging in human experimentation. Special regulations have been established to strengthen the protection of experimental subjects having "limited civil freedom," including children, and captive populations such as prisoners, the mentally ill, and the mentally retarded.

The right to refuse treatment by institutionalized patients is subject to debate. The medically certified commitment of the mentally ill patient to an institution deprives him of his liberty on medical grounds, with the purpose of protecting the patient while guaranteeing treatment. Involuntarily incarcerated patients often refuse treatment for various reasons, which may or may not be associated with an impaired capacity to appreciate the need for treatment. Many psychiatrists support the view that individuals certified as involuntary patients have no right to refuse a treatment, especially where the treatment is seen as the major therapeutic modality applicable to the case. There are others, however, who defend the patient's right to refuse treatment and object to any medical encroachment on the patient's consent.

The right to refuse treatment is closely associated with the legal doctrine of *informed consent*. The latter means not only the *competent knowing* but also the *voluntary assent* of a person on whom a procedure is to be performed. The voluntary assent in the informed consent may be express or tacit; that is, there may be an affirmative verbal assent, or the patient's behavior or course of conduct may constitute the equivalent. Generally, informed consent is deemed to exist when the patient "has an understanding of the probable risks and benefits to him/her" and raises no objection thereto. In the case of *implied consent*, where there is no actual consent at all, the assent to treatment is assumed to be implied against the will or over the objections of the patient. The application of implied consent is circumscribed and thought to be limited to two situations: where it is reasonable to assume that "if the person were competent and able to make a rational decision" he would have given an informed consent and where he is "unable to control his impulsivity to inflict serious harm upon himself or others." Case law and some statutory authority limit the legal concept of implied consent to the emergency situation. An unconscious or comatose patient would receive emergency treatment on the basis of implied consent and so, too, would an overtly disturbed psychotic patient. A person who is judicially declared incompetent lacks the capacity for informed consent, and, therefore, is denied the right to refuse treatment. In

general, most state statutes do not support the presumption of incompetence for involuntarily institutionalized persons. For instance, the Maryland code (articles for the mentally ill and mentally retarded) provides that no person in the respective facilities "shall be deprived of his right to vote, receive, hold and dispose of property unless he has been declared to be incompetent by a court in accordance with the provisions of the Courts Article of the Code." Involuntarily institutionalized patients who are not considered to be incompetent by statutory or judicial action have generally been denied the right to refuse treatment on the assumption that the hospital has a right to make decisions as to treatment with the exception of operative procedures. In addition, many hospitals have relied on consent of family members, the legal validity of which is considered doubtful. The law has been moving in the direction of recognizing the rights of the mentally handicapped in all respects, and the right of such persons to refuse at least some kind of treatment has been judicially recognized under the due process clause of the Fourteenth Amendment.

There has also been growing recognition of the right of an individual to refuse bodily and other intrusions under the expanding First Amendment right to privacy; it has been suggested that, based on other First Amendment rights, a patient should have the right to refuse to undergo organic therapies which interfere with his thought processes, including psychosurgery, electroconvulsive therapy, drugs with dangerous side effects, and aversive behavior modification techniques. While this right has been termed *the right to refuse treatment*, what is really involved in these situations is the right not to be treated without informed consent. As a result, in light of legal developments, a physician or health facility cannot, without risk of liability, administer any kind of medical procedure without the consent of a patient who has not been judicially declared incompetent. Viewing the available judicial procedure for establishing incompetence as being time-consuming and too cumbersome, the Maryland state legislature has moved to establish mechanisms for obtaining "substitute consent," without a judicial determination of incompetence, for patients who have the capacity but refuse to give informed consent. The Maryland statute governing substitute consent mandates that every health facility shall establish a substitute consent review board for a determination of capacity and the appointment of a substitute decision maker, if indicated. The Substitute Consent Review Board shall consist of one physician, one lawyer, and one member who is not a lawyer or a physician, all three to be appointed for a three-year term by the chief administrator of the health facility. The patient is entitled to representation by counsel or a trained patient advocate during the procedure. If the board determines that the patient lacks the capacity to give informed consent, it is empowered to order and proceed to appoint a "qualified" individual as the substitute decision

maker — if one is available — and, if there is none, the board becomes the substitute decision maker. It appears that the intent of state legislation for statutory authority to support substitute consent mechanisms is contrary to that of federal legislation protecting the right of informed consent.

THE RIGHT TO TREATMENT

The patient's right to treatment — and to refuse treatment — is most relevant to involuntary institutional care. The deprived conditions of mental hospitals and mental retardation facilities, and the inadequacy of treatment of patients who have been involuntarily committed to such facilities, have given the impetus for seriously considering the right of these patients to treatment during the period of their incarceration. Several federal court decisions have elaborated upon the institutionalized patient's constitutional right to receive treatment (*Rouse v. Cameron*, 1966; *Wyatt v. Stickney*, 1972; *Wyatt v. Aderholt*, 1974; *Hathaway v. Worcester City Hospital*, 1973; and *Donaldson v. O'Connor*, 1974). The following brief review of this complex issue is based on the argument contained in the brief of the American Psychiatric Association as *amicus curiae* [2], in the Supreme Court, in the case of *Donaldson v. O'Connor*.

The Fourteenth Amendment guarantees a right to treatment to persons involuntarily committed to state mental institutions. Civil commitment of the mentally ill results in deprivation of the precious right to liberty — an interest of "transcending value." It affects "fundamental rights" which are encompassed by the due process of the Fourteenth Amendment. It is well established that government actions affecting such constitutionally protected interests must bear at least a rational relationship to legitimate state ends and that this principle applies to procedures for the involuntary confinement of the mentally ill or disabled. The Court has identified two basic state purposes for civil commitment of the mentally ill — a *parens patriae* rationale, that is, to benefit the person committed; and a *police power* rationale, to protect society from dangerous individuals. Under either rationale, involuntarily committed mental patients have a constitutional right to psychiatric treatment. The *parens patriae* power generally refers to the state's power to serve as guardian of persons under legal disabilities to act for themselves. Whatever the limits of this doctrine, at the very least, when a state involuntarily confines one of its mentally ill citizens to an institution on the ground that it is acting in a humanitarian way pursuant to its *parens patriae* power to aid that individual, due process requires that the individual in fact be given such aid and treatment as would be reasonably calculated to benefit or cure the citizen, and that the nature and duration of commitment bear some reason-

able relation to that purpose. "To deprive any citizen of his or her liberty upon the altruistic theory that the confinement is for humane therapeutic reasons and then to fail to provide adequate treatment violates the very fundamentals of due process" (*Wyatt v. Stickney* [31]). The state's police power as a rationale for commitment of mentally ill individuals who are found to be dangerous to society does not absolve the state from the obligation to provide treatment to such patients. The court has held that due process requires the state to provide treatment as a quid pro quo to the civilly committed mental patient, regardless of whether the commitment was under a *parens patriae* or police power rationale. When the state acts under its police powers to detain people *full time* in state institutions for *indefinite periods* of time, then treatment has to be provided by the quid pro quo society for the denial of individual liberty.

As to the question of what constitutes adequate treatment in the constitutional sense, the Court in *Wyatt v. Stickney* [31] held that there are "three fundamental conditions for adequate and effective treatment programs in public mental institutions. These three fundamental conditions are: (1) a humane psychological and physical environment, (2) qualified staff in numbers sufficient to administer adequate treatment and (3) individualized treatment plans." The definition of adequate care and adequate treatment by the APA's Task Force on the Right to Care and Treatment [3] comports with the above tripartite judicial standard.

OTHER ASPECTS

The Patient's Right to Choice of Physician

In this country, the right to seek advice on one's health and the right to place reliance on the physician of one's choice are basic Fourteenth Amendment values. Nevertheless, there are many factors that appear to interfere indirectly with the patient's ability to fully exercise his right to choice of physician, without which there is really no free choice. One must be fully informed about what the available health resources are, in order to be able to judge the quality of these resources, and have full access to them. There appears to be a widespread need to educate the public about the availability of health care services in the community. Many patients, especially those of lower socioeconomic status, are not aware of the range of services that are available to them, and, therefore, they are hampered in their capacity to choose what might be best for them. There also appears to be a widespread need to provide the public with the necessary information about health care providers with regard to their competence, standards, and quality of care. Patients cannot make an

informed choice unless they have access to such information and are adequately educated about what criteria to use for discriminating competence among the providers and for assessing quality in the services received. Finally, there are many factors that appear to thwart the patient's access to quality health services — economic considerations, age, sex, race, ethnicity, local manpower shortage, and geographic inaccessibility of health resources. The financial limitations of a large section of the public, coupled with the soaring costs of health care, represent a major factor in the inaccessibility of quality health care to all citizens of this country. The right to treatment, advocated by the consumer movement as being part of a fundamental civil right to health, needs first to be fulfilled in order to make the patient's right to choice of doctor a true right. In referring to the health of the public, Aristotle wrote, "Health of mind and body is so fundamental to the good life that if we believe men have any personal rights at all as human beings, they have an absolute right to such a measure of good health as society, and society alone, is able to give them." In contemporary societies, the challenge to make health care a right for all has received wide recognition. A number of countries have already made the right to health a reality. It is incumbent upon the medical profession in this country to adopt this philosophy, in anticipation of the forthcoming National Health Insurance Program.

Age is another factor that limits the choice of health providers. The unavailability of adequate health care services for children and the elderly is an example of this limitation. Under the impetus of the feminist movement, women — representing an underprivileged group in this society — have brought into focus the inadequacies of the health care system in meeting their needs, especially with regard to issues concerning abortion, rape, contraception, and wife battering. Persons are likely to be treated differently because of race and ethnicity. The physician's right to choose whom to serve is not immune to prejudice and may serve as a barrier to those patients from minority groups seeking to exercise their right to choice of doctor. Finally, the unavailability of quality health care services that exists in many rural communities and in poverty areas of large cities — because of geographic or transportation barriers and health manpower shortage secondary to maldistribution and inadequate production of physicians — represents a major hindrance to the patient's right to choose a doctor. Physicians need to scrutinize their obligations to society in their role as providers of health care. They need to reexamine prevailing philosophies regarding many aspects of the practice of medicine, including the physicians' responsibility to promote public health, to assure patients that the health services available to them meet high quality standards, to take affirmative action in the areas of concern, and to become advocates for the availability of comprehensive quality care to all.

The Physician's Right to Choose Whom He Will Serve

This right is sanctioned by the American Medical Association, and represents one of the Principles of Medical Ethics (section 5) of that organization [1:23]. This code further defines what constitutes a reasonable response to request for care, limiting it to emergency cases. If one views the practice of medicine as a public service, on the basis that the commodity of health services should be available to all as part of the right to health, it would be necessary to reexamine the civil and moral basis of this principle. The American Psychiatric Association has added the following annotation to this principle, as being "especially applicable to psychiatry" [4]: "A psychiatrist should not be party to any type of policy that excludes, segregates, or demeans the dignity of any patient because of ethnic origin, race, sex, creed, age, or socioeconomic status." This principle appears to have universal applicability to the practice of medicine.

The Physician's Obligation to Maintain Standards of Professional Competence

If the objective of the doctor-patient relationship is to provide services to the patient, it is the responsibility of the physician, as a provider, to achieve an acceptable level of professional competence, and to be able to maintain that level, through continuing medical education and peer review. The institutionalized procedures by which a physician's competence is evaluated — graduation from a recognized medical school, satisfactory completion of internship and residency training, as well as national board, state board, and specialty examinations — allow a certain measure of competence to be established. Nevertheless, there are significant limitations in all evaluative methods; therefore, it becomes necessary to depend on the physician's own sense of responsibility for the maintenance of standards of competence. One of the most important criteria for the selection of medical students should be the presence of a self-engaging responsibility for the achievement and maintenance of competence, and of a capacity to pursue one's own education independently. Competent medical practice requires a lifelong commitment to learning. Although physicians are held responsible for their own continuing medical education, it has recently become necessary to establish institutionalized procedures for the assurance of every physician's continuing medical education through appropriate certification. It is most desirable that the medical profession succeed in establishing and maintaining an effective self-regulatory system of continuing medical education.

A physician is obligated to practice within the area of his professional competence; otherwise, he is considered unethical, as well as liable

in case of malpractice. The AMA Principles of Medical Ethics states that "A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby" (section 8) [1:53]. The physician may suggest possible consultants of recognized competence, but the patient or the family of an incompetent or minor patient should be given free choice of the consultant.

Peer review emphasizes the profession's own responsibility for the maintenance of standards of competence and quality of care. It is the responsibility of the ethical physician to allow his practice to be periodically scrutinized by his peers, as a means of assessing his level of competence. Failure of the peer review process will eventually lead to externally imposed government controls through coercive legislation and the development of external regulatory agencies.

Terms or Conditions for Physicians' Services

The AMA Principles of Medical Ethics states that "A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care" (section 6) [1:31]. The American Psychiatric Association's (APA) annotations to this principle, which appear to be applicable to the practice of medicine in general, provide the following elaborations:

Contract practice as applied to medicine means the practice of medicine under an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization, political subdivision, or individual whereby partial or full medical services are provided for a group or class of individuals on the basis of a fee schedule, for a salary, or for a fixed rate per capita. Contract practice per se is not unethical. Contract practice is unethical if it permits features or conditions that are declared unethical in these Principles of Medical Ethics or if the contract or any of its provisions causes deterioration of the quality of the medical services rendered. The ethical question is not the contract itself but whether or not the physician is free of unnecessary nonmedical interference. The ultimate issue is his freedom to offer good quality medical care. In relationships between psychiatrists and practicing licensed psychologists, the physician should not delegate to the psychologist or, in fact, to any nonmedical person any matter requiring the exercise of professional medical judgment. When the psychiatrist assumes a collaborative or supervisory role with another mental health worker, he must expend sufficient time to assure that proper care is given. It is contrary to the interests of the patient and to patient care if he allows himself to be used as a figurehead. In the practice of his specialty, the psychiatrist consults, associates, collaborates, or integrates his work with that of

many professionals, including psychologists, psychometricians, social workers, alcoholism counselors, marriage counselors, public health nurses, etc. Furthermore, the nature of modern psychiatric practice extends his contacts to such people as teachers, juvenile and adult probation officers, attorneys, welfare workers, agency volunteers, and neighborhood aides. In referring patients for treatment, counseling, or rehabilitation to any of these practitioners, the psychiatrist should ensure that the allied professional or paraprofessional with whom he is dealing is a recognized member of his own discipline and is competent to carry out the therapeutic task required. The psychiatrist should have the same attitude toward members of the medical profession to whom he refers patients. Whenever he has reason to doubt the training, skill, or ethical qualifications of the allied professional, the psychiatrist should not refer cases to him. Also, he should neither lend the endorsement of the psychiatric specialty nor refer patients to persons, groups, or treatment programs with which he is not familiar, especially if their work is based only on dogma and authority and not on scientific validation and replication. In accord with the requirements of law and accepted medical practice, it is ethical for a physician to submit his work to peer review and to the ultimate authority of the medical staff executive body and the hospital administration and its governing body [4].

It is especially interesting to examine the responsibilities of psychiatrists and other physicians employed at state institutions, such as mental hospitals and facilities for the mentally retarded, where the standards of patient care are often found to be unacceptable because of conditions which tend to cause deterioration in the quality of medical care. The brief of the American Psychiatric Association as *amicus curiae* [2] in the Supreme Court of the United States in the *O'Connor v. Donaldson* litigation, states that "Psychiatrists employed at state institutions should be immune from personal liability for damages when they have made a good faith effort to comply with constitutional requirements for treatment." The brief further argues that, in view of the great differences in the range of resources available to psychiatrists in such hospitals, "the treatment that psychiatrists provide must be viewed in this institutional context in order to judge fairly whether they have made a good faith effort to treat their patients." The court did not uphold the argument that qualified immunity based on good-faith performance of duty applies to the case of psychiatrists employed at institutions in which patients have no access to adequate treatment and care. The physician's liability in such situations is based on the recognition of the fact that the patient's constitutional right to treatment is violated.

With regard to the financial aspects of the physician-patient transaction, the AMA code states: "In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should

be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient" (section 7) [1:39]. The AMA code further provides that "charging for a missed appointment or for one not cancelled 24 hours in advance need not, in itself, be considered unethical if a patient is fully advised that the physician will make such a charge. The practice, however, should be resorted to infrequently and always with the utmost consideration of the patient and his circumstances." The APA annotations to the code similarly state, "Psychiatric services, like all medical services, are dispensed in the context of a contractual arrangement between the patient and the treating physician. The provisions of the contractual arrangement, which are binding on the physician as well as on the patient, should be explicitly established. It is ethical for the psychiatrist to make a charge for a missed appointment when this falls within the terms of the specific contractual agreement with the patient" [4].

Moral Aspects of the Physician's Character

The AMA code states: "The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession" (section 4) [1:19]. The APA annotations to the code offer the following elaborations: "It would seem self-evident that a psychiatrist who is a lawbreaker might be ethically unsuited to practice his profession. When such illegal activities bear directly upon his practice, this would obviously be the case. However, in other instances, illegal activities such as those concerning the right to protest social injustices might not bear on either the image of the psychiatrist or the ability of the specific psychiatrist to treat his patient ethically and well. While no committee or board could offer prior assurance that any illegal activity would not be considered unethical, it is conceivable that an individual could violate a law without being guilty of professionally unethical behavior. Physicians lose no right of citizenship on entry into the profession of medicine" [4].

Special consideration should be given to those physicians who, because of mental illness, alcoholism, or drug abuse, jeopardize the welfare of their patients and their own reputations and practices. According to the APA principles, "It is ethical, even encouraged, for another psychiatrist to intercede in such situations" [4].

THE CONSUMER'S VIEW — PATIENT ADVOCACY

It was the civil rights movement during the 1960s that first aroused in this country a new social awareness and brought into focus the recognition of a pressing need for change and social reform to meet the demands of various underprivileged groups in society. During the past fifteen years there has been an interlocking succession of protest movements advocating the rights of racial groups (blacks, Puerto Ricans, Indians, and Chicanos), poverty groups (welfare recipients and the elderly), women, and youth. The reverberating themes dramatized by these protesting groups and by their advocates resonate their unmet needs, as well as feelings of powerlessness, alienation, marginality, and exclusion from participatory access to unprecedented prosperity. The new demands created by rising expectations among the public have led to the current period of public alliance and social pressure that is expressed in the movements for consumer advocacy, patient advocacy, child advocacy, and others. In the field of health care, this social change has made urgent the need to respond to pressing public expectations for more and better health manpower; more and better health care facilities; better financing arrangements for the health care of the population; better planning for health manpower and health care delivery; and better doctor-patient relationships. It is the consumer movement in this country that reflects the emergent social values for patient advocacy. These new ideas have evolved into compelling socio-political and economic issues which are formulated as "patients' bills of rights", and are progressively becoming incorporated into government policy. Since 1974 federal standards for facilities participating in the Medicare and Medicaid programs have included patients' bills of rights and other provisions designed to assure protection of the dignity and humanity of the patients served. Federal government agencies are developing programs that address the dual problems of safeguarding the rights of individual patients and involving the patient and the general public in the planning, development, and evaluation of health care programs. A further development in this area was the National Symposium on Patients' Rights in Health Care [23] held in 1976 and sponsored by the Health Services Administration of the Department of HEW with the participation of representatives of the health professions, consumers, government agencies, and private interests concerned with providing health care services. The following discussion highlights some of the issues presented at that symposium.

There is a rising expectation for this country to accept and endorse the World Health Organization's definition of the word *health* as embodying the total needs and supportive needs of a person. The recognition of

the right to health mandates the establishment of a national health insurance program which guarantees all residents of this country quality and comprehensive health care with dignity, regardless of income or ability to pay. A starting point in the protection of patients' rights in health care is through the protection of basic constitutional rights. Many inequities in health care resources and inhumane or callous approaches by health care institutions and personnel reflect problems of the total society.

Health care as such is diverse and includes many types of providers and infinite variations in the purpose, intensity, and length of episodes of care. Special attention needs to be given to the protection of patients' rights — when the patient is most helpless (the mentally retarded, the severely disabled, the terminally ill, the elderly, and the mentally ill); when the patient is unable to gain access to the kind of care he needs; and when care has been provided in a way that has left the patient confused, angry, feeling belittled and helpless or unable to understand treatment procedures or the consequences of his illness or disability.

Much of health care is provided in complex and large institutional structures which have taken on a life of their own and become self-protecting of vested interests even though their original and basic purpose is to serve the sick. In order to achieve a viable partnership between consumers and providers of health care, there is need for improved communications, professional education, consumer information, consumer advocacy, more effective regulatory activities, broad community involvement in health care concerns, and continuous staff training. Some of the more specific recommendations include the following [23]: (1) Patients on entering any health care facility ought to receive an immediate statement of the rights of the patient, as well as instruments on how the patient can go about endorsing those rights. (2) Every health care facility receiving federal funds should have a formal health education and advocacy department to teach patient competency skills. (3) In order to allow accessibility for patient advocates to the system and the people within the system, it was felt that, within an institution, "there should be a patient advocate who is clearly identified with and responsible to the patient." Also, "outside of the institution there are various community-based advocacy programs which need to be part of the advocacy network and must be allowed access to patients in facilities." (4) There is need for "a properly financed, trained consumer network with the mandate and ability to articulate consumer needs effectively, and to help to create consumer responsive developments and changes in federal health policies and programs."

The doctor-patient relationship itself often minimizes the patient's right to know or to participate in decisions that affect his well-being and identity. The potential effectiveness of this relationship is often hampered

by poor communication and power and status differences. It is usually characterized by ambivalence, unrealistic or unattainable expectations, unrealistic images of the other person, unequal distribution of knowledge (seen on the part of the patient as "power"), and lack of a clear definition of responsibilities. Again, the key to solving these problems was thought to lie in education and patient advocacy. The following recommendations were made [23]: (1) In order to create a reciprocal relationship, there is need to establish an agreement of "rightful expectations" between every patient and health care professional, with provisions for ongoing assessment of outcomes. (2) In order to bring about a much needed change in attitudes of health professionals, to increase their sensitivity, motivation, and awareness of the patient as a person, it is necessary to make each professional an advocate of the patient, through a program of basic and continuing education. It was specifically recommended that, as a condition of federal funding, health professional schools require experiential and didactic courses in human relations, communication skills, geriatrics, community resources and involvement, nutrition, and ethics. Further, it was recommended that the existing in-service training requirements be strengthened to insure ongoing training for all facility personnel at all levels in the humanistic care of patients, with an emphasis on the team approach, to insure an involved, caring staff. (3) In order to enable people to enter the health care system in a competent and participatory way, there is need to educate the public. "Health education is a fundamental right of every person and should be included in all curricula on an ongoing basis." For example, definition of patients' rights, general education at levels in the school system and community outreach to teach people how to be their own advocate, to know their rights and to understand their own health status and needs."

In addition to the above observations and recommendations, the following areas of concern were identified [23]: (1) Patients have a right of access to their medical records; a patient-oriented record system needs to be developed for continuity of care; (2) the need to view care in terms of continuity (including discharge planning); (3) the patchwork nature of a system which, though set up for the convenience of the professional, often makes no sense to him and even less sense to the consumer; (4) the priority of a system attuned to acute rather than long-term care; (5) the need for more research and especially for dissemination of information about factors affecting the patient-professional relationship.

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15

Psychodynamic Aspects of the Doctor-Patient Relationship

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HISTORY

The doctor-patient relationship is the vehicle by which health care has been delivered throughout history. When rapport between physician and patient is secure, the relationship is a source of strength and comfort for patients and career fulfillment for physicians. The development of such rapport, which has been referred to as bedside manner in hospital care, requires effort on the part of the physician and patient; it does not come naturally. Effective rapport can be recognized more easily than understood; it is characterized by both the physician and patient sensing that they are involved in a mutually respectful, trustworthy, collaborative effort to improve the quality of the patient's life and health and to care for him in illness. An understanding of the psychodynamic factors that enhance the relationship as well as those that detract from and block the development of rapport is an essential component of every physician's knowledge.

People are probably aware of the general public's ambivalent attitudes toward medicine, but may not be aware that in spite of the status that is generally accorded the physician, there has, throughout history, been an opposite trend — a simultaneous undermining of the position of the doctor in society. In days gone by, the physician had little to offer but comfort and solace. The frustration that ensued was experienced by both patient and physician and seems to have been a serious impediment of trust. Consider the advice of a physician from the school of Salerno, quoted by Friedson

Entering the sick room you should have neither proud nor greedy countenance . . . you praise the neighborhood, commend the arrangements of the house . . . then turning to the patient you may ask how it goes with him, and have him put out his arm . . . you should consider the pulse only after the patient has become steadier (very good advice) . . . next have the urine brought to you that the sick man may see you study his illness not only from the pulse but the urine . . . after which you promise the patient that with the help of God you will cure him. As you go away, however, you should say to his servants that he is in a very bad way, because if he recovers they will remember that you despaired of his life from the beginning. [6:24].

Until recently communications between physicians and very ill patients were similar to the advice given by the writer from Salerno. Patients were not told the diagnosis, "for their own protection," but families were. The awkward communications that ensued became a source of trouble on their own. Patients who really knew that they were terminally ill without having been explicitly told could not share the experience in a forthright way. Families felt it a great burden to keep the secret from the patients and physicians were active participants in these charades. Current practice is to be more forthright where tact and empathy so dictate and patients become less isolated by the communications and participate as equals with physicians and families to the fullest.

On their part patients were often led by experienced frustration to noncompliance as reflected in the behavior of Benvenuto Cellini: "I put myself once more under doctor's orders, and attended to their directions, but grew worse. When fever fell upon me I thrived on having recourse again to the wood; but the doctors forbade it, saying that if I took it with the fever on me, I should not have a week to live. However, I made my mind up to disobey their orders, observed the same diet as I had formerly adopted, and after drinking the decoction four days, was wholly rid of the fever" [6].

In 1848 medical practice was beset by competition from quack empiricists and the regard of the American for the professional physician was described by W. Hooker: "As it now stands the professional is in a somewhat false position before the public . . . The confidence reposed in us is

not as intelligent as it should be. It is unsettled and capricious. It is overweening at one time and it is entirely withheld at another, and for most frivolous reasons. The inconsistencies of the well informed on this subject are surprising" [7:2].

THE PSYCHODYNAMIC APPROACH

Psychodynamic meaning is an approach that assumes that certain behaviors that are inexplicable and/or seem inappropriate at first notice make sense when underlying conflicts are taken into account. The frustration experienced by both patients and physicians before the development of modern treatment techniques makes some of the curious and irrational behaviors of both physicians and patients more understandable. It might be thought that with the advent of modern techniques for primary prevention, early detection, and definitive treatment, the attitudes of patients would be more uniformly positive and rational.

A patient who was taught self-examination of her breasts did so routinely every month until she found a lump. She did nothing concerning the lump except to stop examining her breasts. An inoperable carcinoma was found during a routine physical exam sometime later.

The tragic outcome in this patient's case is all too common. One might assume that a patient who examines herself religiously would have a good enough relationship with her physician to report finding the lump in her breast. As is too often the case, such rational assumptions are unwarranted. The behavior of both patients and physicians is often dictated by irrational attitudes. The woman who failed to report the lump seemingly behaved in a frivolous fashion by failing to appreciate its meaning. When one takes into account the fear of death that the lump must have signaled, one is in a position to understand her use of denial. In psychodynamic terms, the wish for life, evident in her repeated self-examination, is in conflict with the threat of death. Her denial of the significance of the lump is an attempt to resolve the conflict; she exiles the meaning of the lump from consciousness.

Irrational attitudes do not always work to the patient's detriment. Sometimes the overweening dependence referred to by Hooker causes chance remarks by physicians to have major beneficial effects.

A couple who were having serious difficulty communicating visited their physician for an annual checkup. The physician advised the couple to take a two-mile walk together because they both needed exercise. The daily routine was accepted by the couple and did much to reverse the problems from which the marriage was suffering.

These phenomena indicate that there are powerful influences underlying the doctor-patient relationship. At times they affect the relationship in useful ways, but at other times tragedy ensues. An understanding of these powerful influences is important if the physician is to gain control of the doctor-patient relationship so that the interaction with the patient can be more predictably and beneficially directed.

It is apparent that the powerful influences that underlie the doctor-patient relationship include contradictory tendencies. Hooker [7] put these well when he talked of confidence "overweening at times and entirely withheld at others." However, when he described the reasons as "most frivolous," Hooker was inaccurate. We now are in a better position to understand that reasons that appear frivolous on the surface hide deeper meanings. The search for the meaning of the contradictory attitudes that influence the doctor-patient relationship is a search for psychodynamic meaning.

The elucidation of the psychodynamic meaning of phenomena could be considered as a process that occurs in stepwise fashion. The first step is noticing behavior that is to be explained. Behaviors are noticed because they catch the attention of the physician as either inexplicable, irrational, inappropriate, bizarre, or unusual in some other way. Noticing such behaviors includes tension in the observer that becomes the impetus for seeking a psychodynamic explanation. Such behaviors include non-compliance, signing out of the hospital "against medical advice," perpetual complaining, seductive behavior of patients, and so forth. In other words, the first step is that the behavior intrudes on the physician in such a jarring way that the behavior seems to attract attention to itself. The second step is to assume that the jarring effect of the behavior on the physician is purposeful. The physician assumes that the patient is seeking attention by behaving in this inappropriate manner. The third step is to wonder just why this particular patient at this particular time seeks attention by behaving inappropriately. "Why is this patient complaining, or not losing weight, or still using salt?" The fourth step is the elucidation of the conflicts that the patient "advertises" by behaving inappropriately. The fifth step includes helping the patient to share the underlying conflicts in such a way that the need to advertise the conflicts by behaving inappropriately is no longer necessary.

A young unmarried woman was admitted to the hospital for surgical treatment of a nodular goiter. The thyroid problem had been extensively investigated on an outpatient basis and the patient was scheduled for surgery. Because the woman was tense and agitated she was placed in a private room. After two days she signed out. A month later the patient was readmitted and signed out again. When the patient was admitted a third time, the surgical resident called for a psychiatric consultation. The

psychiatric resident gathered a history that revealed that the woman developed her symptoms shortly after an elderly aunt with whom she lived was hospitalized in a home for the aged. The patient had lived with her aunt for many years, was completely devoted to her, and spent most of her time caring for her in a completely self-sacrificing way. The patient mentioned how much she enjoyed doing all these things for her aunt because of the deep affectionate bond between them. The conflict between caring for others and attending to the needs of the self is often resolved by patients who develop hyperthyroidism by opting for such self-sacrificing behavior. Once this conflict was elucidated, it became apparent that placing this woman in a single room where her care was maximized only aggravated her anxieties. Complete bed rest was discontinued, and she was allowed to be up and about on the ward. The nursing staff was told to encourage the patient to help them as much as she desired by caring for the other patients as well as herself. The patient responded quickly and became very active in caring for other patients in addition to doing much of the menial work around the ward, such as mopping floors. The patient's medical condition stabilized and she easily accepted the indicated surgery [10].

The conflicts that this woman advertised by signing out of the hospital on two occasions were lifelong personal characteristics. The daily practice of medicine and surgery includes many examples of irrational behavior on the part of patients, physicians, and the health care delivery system. The physician who is not keyed to search for underlying conflicts when he is confronted with irrational behaviors is likely to feel bewildered and helpless. Alternatively, the physician may get angry and attempt to respond to irrational behavior in a way that does violence to the doctor-patient relationship. The physicians whose patients in acute congestive failure continue to use salt or continue to smoke despite end-stage pulmonary disease, whose alcoholic patients continue to drink despite imminent liver failure must develop an understanding of the psychodynamic meaning of these behaviors: the physician must come to respect the anxiety caused by the conflicts that leads patients to persist stubbornly in behaving inappropriately if he is to practice the art of medicine effectively.

Elucidating the psychodynamic meanings of behavior includes more than the here-and-now conflicts in the patient's life. How patients behave is determined not only by their striving to find a contemporary resolution to conflicts and the associated anxiety, but also by how similar conflicts were resolved in the past. The patient with the goiter was made anxious by the attention centered on her not only because of the here-and-now reality of the single room but also because of a lifelong devotion to caring for others. That lifelong history of self-sacrifice was a lively component of the psychodynamic meaning of her behavior. The physician must search for

the here-and-now conflicts that are associated with inappropriate behavior and also include the precedents in the patient's life for resolving similar conflicts.

The doctor-patient relationship is concerned with conflicts at many levels. There are, first, the reality conflicts inherent in the practice of medicine and surgery. Second, one must consider the universal conflicts that are inherent in everyday life. Third, one must consider conflicts between cultures. Fourth, one needs to take into account idiosyncratic conflicts of neurotic and psychotic proportions.

The reality conflicts inherent in the practice of medicine and surgery are of great moment and are the source of much of the status and power of the physician. These conflicts include concern for the patient's peace of mind versus the disquiet of making the patient more aware of illness and death. The very cost of health care versus its benefit is a lively issue that threatens the practice of medicine.

The controls imposed on the practice of medicine by third parties create conflicts between physicians and patients on one side and third party payers and government on the other. Recent decisions of Congress and the Supreme Court limiting federal funds for elective abortions are an example. Some of the more dramatic conflicts are the right of the fetus to live and the desire of a pregnant woman for an abortion, to continue or discontinue life support systems, to donate or to withhold one's organs, to prolong life in the face of intractable and severe pain rather than permitting life to be terminated. These conflicting realities make the practice of medicine both passionate and troubling; they are not only ethically perplexing, they are also often sources of psychological conflict because the conflicting realities overlap with the universal conflicts of everyday life.

The universal conflicts of everyday life are those of estrangement versus familiarity, of trust versus mistrust, of autonomy versus shame and doubt; of initiative versus self-effacing guilt; and of a capacity for empathic ethical behavior versus acting without a genuine regard for others. It is a central task of the physician-patient relationship to keep the dynamic conflicts of everyday life in mind in order to maximize collaboration and minimize resistance to accomplishing health-related tasks. We will later see how the dynamisms of trust and familiarity versus mistrust and estrangement are important considerations at the beginning of the doctor-patient relationship. We will note how a respect for the patient's autonomy is crucial to the continuing doctor-patient relationship and how a genuine regard for the other's being in the world is tested by chronic illness.

Although other chapters in this book cover the psychopathological syndromes that result from attempts to resolve personal conflicts in great detail, it must constantly be kept in mind that people with chronic psychiatric problems also have a need for primary health care and that people

with severe medical illnesses develop neurotic and psychotic reactions to those diseases. Whether particular psychiatric diseases are to be treated by the primary care physician or referred to a psychiatrist must be decided in each instance. In either event, there is no escaping the fact that the psychiatric syndromes will complicate the primary health care relationship. In other words the primary care physician will be called upon to care for the organic illnesses of people who suffer from psychiatric disease. Whether the patient is treated for both psychiatric and organic problems by the primary care physician, or whether the care is split between the psychiatric specialist and the generalist, the effect of the psychopathology on the relationship must be dealt with and faced squarely. This includes assuring that communication between patient and physician is as open as it can be, and that communication between physicians is adequate.

BEGINNING OF THE DOCTOR-PATIENT RELATIONSHIP

There is anxiety at the beginning of every new relationship, which recedes as estrangement is reduced. At the beginning of the relationship between a physician and patient one must therefore add "stranger anxiety" to the anxieties of the patient about bodily integrity. The stranger anxiety experienced by the patient, and to some extent the physician as well, is linked to the stranger anxiety of early childhood. Even as estrangement is reduced and familiarity established, conflicts about separation and separation anxiety arise. There are at least three issues that should alert every physician to the developmental line that begins with eight-month stranger anxiety and continues through the phases of separation rapprochement and individuation. First, the patient will grant the physician license to explore his life and body in a way that only his parents were permitted to do. Second, in the face of a threat to bodily integrity, the patient's attention is riveted on himself, which implies narcissistic preoccupation. Narcissistic preoccupation in turn exerts a regressive tug toward childhood. Third, in the event of illness the patient will want helping attention from the physician and to some extent will feel dependent. The dependence on the physician carries with it separation anxiety and the patient with an illness becomes afraid of not being able to reach his physician.

The precedent for these anxieties is universally set in early childhood [9]. As soon as the child is able to form a gestalt of his mother's face, he becomes anxious as the difference between his mother's face and the face of others is perceived. This anxiety typically occurs around eight months of age and is called *stranger anxiety*. Later, after the child has mastered the art of walking, he becomes fretful when he wanders too far away from his mother. This fretfulness is called *separation anxiety*; the anxiety is relieved

when child is reunited with his mother. The phase in which the separations and reunions elicit anxiety is called the *rapprochement phase* and lasts from about a year and a half to three years. Anna Freud [3] coined the useful term *developmental line* which refers to a series of experiences that are classified together. For example, the eight-month stranger anxiety forms a starting point for the child's capacity to experience estrangement. Each subsequent experience, reduction, of estrangement will add meaning to the child's (and subsequently the adult's) conceptions of strangers. A life characterized by many moves to which the child had difficulty adapting could bias the child's conception of strangers and heighten his mistrust of them. Furthermore the child's concept of separation might lead him to keep all relations tentative. The understanding that paradoxical and self-destructive behaviors may be intrusions from the patient's childhood adds another related dimension to psychodynamic meaning.

Conceptions or attitudes formed in childhood are unconsciously maintained by adults and are reflected in meaning and value systems; they will also be transferred onto the physician. A physician who encounters difficulty establishing rapport with such a patient is helped to assume a tolerant attitude if he realizes that the patient's difficulty may be long-standing and out of the patient's awareness. What makes certain behaviors so persistent is that they are not only related to conflicts in the here-and-now doctor-patient relationship, but are also rooted in childhood experience. Moreover, the conflict-related behavior may have been adaptive (useful) during childhood even though the behavior is not purposeful in adult life. Such "reinforcement" of useful conflict-related behavior makes it all the more difficult to eradicate. For example, the child who is moved every two years finds an aloof attitude toward peers useful. That utility becomes an integral part of the meaning of behavior in relationships and separation. A physician who is able to perceive that aloof child as an aloof adult and who is alert to the possibility of this behavior being a "transference" is better able to understand.

PRACTICAL ASPECTS OF THE BEGINNING PHASE

The new patient makes his first contact by phone, and it is usually an employee of the physician who responds. It is important to instruct one's employees in telephone behavior, for first impressions are crucial. It is just as important to listen to employees' accounts of patient behavior — they will often provide the first clue that a particular patient is going to be difficult. The secretary or nurse will be the first to know that patients cancel appointments for either frivolous or valid reasons. The patient who cancels

appointments for frivolous reasons is also the one who is less likely to collaborate in his own health care, one who needs more attention at the beginning of the relationship.

The cues provided the patient by the physician's employee, by the furnishings of the waiting room, by other circumstances of the initial visit — for example, the length of time the patient has to wait — all make an impression on the patient. The physician's attitude toward these cues should be the same as that of a host welcoming a respected guest into his house. If a patient, new or familiar, has been kept waiting, the physician who explains the reasons for the wait is fostering a collaborative attitude; the physician who does not makes the patient feel unwelcome. Moreover, the patient concludes that the anger he experienced during the wait is judged inappropriate; the physician implies that his time is more important than the patient's and causes the patient to feel more childlike in relation to the physician, fostering the development of dependent attitudes. Patients who continue to visit the physician who makes them feel childish are those for whom such an attitude is compatible. Patients who would rather be treated as equals would be less likely to return.

During the initial history taking and physical exam the patient is not only informing the physician about the reasons for his visit, he is simultaneously providing behavioral cues about the extent to which he will or will not be a partner in his own health care. The wise physician makes note of these cues and acts to foster a collaborative attitude.

The opening phases of the doctor-patient relationship set the tone for subsequent interactions. Even though the first encounter may be the only one, it is important to act with the same tact and compassion that would characterize a continuing relationship.

TRANSFERENCE AND COUNTERTRANSFERENCE

The concept of *transference*, a term coined by Freud [4] to help him understand the behavior of a hysterical woman, is basic to the understanding of the psychodynamic aspects of the doctor-patient relationship. Ferenczi [2] extended this concept to include behavior rooted in childhood that is displayed by an adult in all relationships. In 1912 Freud [5] distinguished positive (friendly or erotic) transference from negative (hostile) transference. A patient experiencing a positive transference "is dominated at that moment by an association which is concerned with the doctor himself or with something connected with him." Some aspect of the doctor triggers off an unconsciously determined set of behaviors that were originally directed at a person from the patient's past, for instance, a parent. In the

doctor-patient relationship, the patient is usually unaware of the significance that the physician has for him in representing figures in his past, and he rarely understands the meaning of the treatment situation in satisfying or frustrating his needs for dependence or independence.

During illness, many patients undergo a psychological regression to earlier periods of emotional experience. As a result they are more prone to reexperience a child-patient relationship in their interaction with their doctor. The fear and helplessness associated with illness often make the patient feel as dependent as a child. For patients in such a dependent state the emotional significance of being treated by a physician involves a reliving of early infantile trust, faith, and confidence in an all-powerful and benevolent parent [1]. Patients who expect their physician to relieve their distress by magical methods are those who expect relief as quickly as it was obtained in their childhood.

An executive in a large corporation was hospitalized for postherpetic (shingles) pain. He was renowned on the ward as an extremely difficult belligerent patient. A new intern rotating onto the service, who was aware of this patient's reputation, decided to seek out the underlying causes of the belligerence. In a short interview, it was discovered that the executive was used to getting his way; was not told that postherpetic neuralgia was often intractable, and therefore felt that he was being ignored. After having been informed in an adult-to-adult manner about his illness the patient changed his behavior — he was no longer a management problem and indeed was friendly to the ward staff.

Many adult patients expect the same understanding attitude from their physician, the same omniscience and omnipotence that they believed their parents possessed. The transferring of such benevolent powers onto the person of the physician is classified as positive transference. As long as the positive transference enhances the work tasks of the doctor-patient relationship, it is best left alone. When, however, the positive transference presents an obstacle to the work task, as exemplified by a patient who will not act on his own behalf but unrealistically expects the doctor to do it all, it is important to confront the patient's positive transference.

The positive transference may intrude on the relationship in another, more covert, way. There are patients who are afraid that the doctor will find out what they despise about themselves, and that he will criticize them, or become angry with them and discharge them from his care. Many of these patients try to make a good impression on the doctor and hide some important facts about themselves. Others may try to placate, seduce, praise, and/or idealize the doctor. In elevating the doctor to such heights some patients are setting him up for failure. Some patients protect

themselves from expected criticism or rejection by criticizing themselves first. A very interesting and paradoxical manifestation of the positive transference is by hostile or aggressive behavior. Such a paradox occurs because the patient feels such a need for the doctor's positive regard that he is made extremely anxious and anticipates rejection. By acting in an aggressive, critical, hostile manner, the patient attempts to bring about the rejection himself. Such patients may put up a facade of boldness, show an abrasive style of communication, or become critical of the doctor and/or the medical profession. The executive cited above is an example of this paradoxical manifestation of the positive transference.

There are patients who are so afraid of their own tender and affectionate feelings that they are impelled to criticize their doctors. They may be afraid of closeness and threatened by the implications of intimacy, they may fear seduction by the doctor, or they may be frightened by loss of control over their own impulses.

Negative transference phenomena include the direct transfer to the physician of hatred and resentment experienced toward one or both parents during childhood. These patients may show a disparaging and critical attitude toward the doctor or complain about the doctor's lack of interest, selfishness, or incompetence, although such accusations appear to be unwarranted. Some of the negative transference phenomena are augmented by here-and-now displacement onto the doctor of hostility actually felt for a contemporary — a spouse, colleague, or boss — toward whom the patient is unable to express hostility.

A transference expectation that the physician will disappoint the patient leads some to try to test their physician's devotion. Some patients try to provoke the doctor with all sorts of taxing demands. Others, anticipating rejection or abandonment by their doctor, terminate the relationship in order to protect themselves from being hurt. Thus termination becomes a self-fulfilling prophecy, for such patients fail to recognize their responsibility in terminating the relationship and wrongly blame the doctor.

From all this it is evident that the same behavior may be a manifestation of either negative or positive transference. A critical attitude, for example, may be a direct transfer of resentment felt toward a parent and thus a manifestation of the negative transference or a defense against feared rejection, in which case it is a manifestation of the positive transference. An even more confusing group of patients are those who chronically complain about various physical symptoms which are never relieved, regardless of treatment, and who seem to have a need to suffer. These patients may be unconsciously trying to provoke their physician to become angry with them, to scold them, and to treat them harshly and severely. Others

tend to be uncooperative in following advice, misinterpret what the physician tells them, break appointments, are continually dissatisfied, and yet insist on remaining in the physician's care [1].

Such patients seem to consult physicians not for relief from pain, discomfort, or distress, but because they unconsciously seek greater pain and suffering than their original complaints provided. They find satisfaction in suffering in an effort to relieve their unconscious sense of guilt or to satisfy masochistic strivings. It is common to find a history of depression in a parent of patients with these strivings and the patient is transferring onto the physician feelings of abandonment and of deprivation of attention experienced in childhood. A reliable way to get attention is to become sick, but getting well carries with it the threat of abandonment. The vicious circle of complaints that resist amelioration is thus set up.

Countertransference feelings may seriously distort the physician's relationship with his patients, and therefore need to be fully understood. The physician may transfer to his patients sexual feelings, hostile or aggressive feelings, his need to be liked and admired, his need to dominate and control, and other attitudes or feelings rooted in childhood. A physician, for example, may have chosen medicine as a career because he expected the status accorded the physician to make up for experienced low status in childhood. He may act arrogantly toward patients, inadvertently inflicting upon them the hardships that he experienced in childhood.

It is important from the very beginning of the doctor-patient relationship to be on the lookout for transference as well as countertransference phenomena. The doctor is then in a position to structure the relationship in such a way as to minimize the impact of the unwelcome behaviors that block the work task. How this is done may become clearer as we consider some personality types encountered in the practice of medicine and surgery.

PERSONALITY TYPES

Kahane and Bibring [8] described some typical personality types that complicate medical management — the dependent, overdemanding personality; the orderly, controlled personality; the dramatizing, emotionally involved, captivating personality; the long-suffering, self-sacrificing patient; and the guarded, querulous patient.

The Dependent, Overdemanding Person

The major conflict experienced by the dependent, overdemanding personality type is dependence versus hostility. At times this type of patient

seems compliant and willing to permit the physician to control the treatment and at other times is quick to anger, easily hurt, prone to depression and feelings of helplessness and apathy. This type of patient seems to require special attention, is likely to be considered a "pet" by some of the staff and to be rejected by others. As long as his perceived needs are being met he is compliant. Perceived unmet needs are responded to with hostility and the other side of the conflict can quickly emerge. Being sick arouses strong feelings of being abandoned and helplessness, feelings from which this type of patient is never far removed. Sickness comes in on the side of dependence and threatens the patient's chosen "equilibrium" on the continuum of dependence to hostility. In the face of sickness the patient may become noncompliant and resist all needed care. Alternatively the hostility may take the form of attempting to extract the impossible by repeated and excessive demands upon the physician, to which the physician must respond with an understanding of the underlying conflict. The patient's compliance must be suspect, and the excessive demands responded to with both understanding and firmness. Attempts should be made to help such a patient take a more active role in the doctor-patient relationship and in life in general.

The Orderly, Controlled Person

The person who is very orderly, controlled, precise, punctual, conscientious, and preoccupied with right and wrong issues is threatened by the unpredictable. The conflict that underlies this coping style is between predictability and unpredictability. The resolution is skewed to the side of needing control and predictability and the aspects of life that are unexpected are a source of anxiety. Illness is an unexpected, rarely anticipated event and this type of patient is threatened by unforeseen illness and needs to be supported by the physician, whose support should come in the form of clearly prescribing regimens and giving the patient as much control as possible over appropriate health-related activities. There is the danger that a patient of this type will turn these prescribed activities into an intrusive ritual. For example, a person of this type, if advised to take his blood pressure daily, may take the blood pressure many more times than is warranted. These patients as a rule are considered "good" patients; they are always compliant and cooperative. It could be divined that they were also good children raised by parents with more than the usual amount of rigidity. These patients, therefore, may be experienced by their children and spouse as difficult to live with, as overly suppressing pleasure and autonomy. Sudden changes in life as, for example, the acquisition at work of a computer that changes the routine or the death of a relative are experienced as especially stressful and may precipitate disease.

Whereas it is easy to treat such patients whose coping style is quite compatible with a scientific medical approach, it is extremely difficult to help them to change their coping style. The physician might encourage such a patient to develop predictable sources of pleasure that could be shared with family members.

The Dramatizing, Emotionally-involved, Captivating Person

The person with this coping style uses sexuality and sex-role characteristics to communicate in situations where other communicative styles may be more appropriate. Paradoxically, in situations that are explicitly sexual, such people may have difficulty experiencing and giving pleasure. Other people, usually of the opposite sex, including physicians, find the person with this coping style fascinating, charming, and challenging. Such patients tend to react to the doctor in eager, warm, and very personal ways, and expect to be responded to in kind. They "sexualize" the relationship by dressing in provocative ways, by trying to impress others with their manliness or femininity, and indeed may attempt to seduce physicians and nurses. The underlying dynamic may be understood as a conflict derived from the time the child was considered adorable by the parent of the opposite sex and a rival by the parent of the same sex. They become skilled at eliciting adoration and as long as the going is smooth they are successful. However, when the vicissitudes of daily life intrude on relationships they may lack the ability to communicate effectively on other levels. For example, people who are the life of the party may, in another setting such as a work group, be extremely disruptive. The doctor-patient relationship, is, of course, characterized by tasks that include some of the most threatening and difficult, and such patients may become "management problems." Illness threatens their coping style in a central way. Will they continue to be attractive? Strong? Potent? These threats are so central that they often defend against the reality of illness by denying and overcompensating. For example, a man in incipient heart failure may continue to exercise to an extent that would severely stress a person with a normal heart. Because they tend to act their feelings out in dramatic fashion, in contrast to verbally describing how they feel, they are often considered "poor historians." The dramatic style and relative paucity of words lead others to consider them shallow people, and they are often suspected of malingering. Because their coping style is based on seeking adoration they are sensitive to rejection, become jealous of other patients, extremely resentful of the physician's unavailability, and may summarily terminate relationships, including that with their physician. The relative in experi-

ence these patients have in putting ideas into words and their tendency to perceive life as a sequence of acts leads them to take their fantasies seriously while keeping their dreads to themselves. It is useful, therefore, repeatedly to help these patients voice their concerns, and the physician may need to reassure them more than most other patients.

The Long-suffering, Self-sacrificing Person

The patient with hyperthyroidism exemplifies the coping style, which is based on suffering and sacrifice and is extremely difficult to understand. Previous attempts at understanding the underlying conflict have focused on the relationship of pleasure to pain. Indeed, there is no pleasure that does not include pain or the threat of pain if one includes the pain of disappointment. The conflict between pleasure and pain is a lively one for persons with this coping style who attempt to resolve it by skewing their experience toward suffering. This coping style may also be described as a combination of the controlled and the dramatic coping styles. There is less competition for the undesirable outcomes in life so that a life skewed to self-sacrifice and suffering seems more predictable. Others are less likely to reject efforts that are directed at helping them so that the fear of rejection that characterizes the dramatic style is countered by the self-sacrificing behavior. Instead of attracting people with the lure of sexuality, however, the long-suffering person seeks to bind others to him with indebtedness. As could be expected, his childhood included interaction with parents that combines that of the dramatic and controlled persons. His parents were probably overly rigid and pushed their children to accomplish goals, not for the children's own pleasure and mastery, but to compensate for experienced lack of accomplishment in the parents' own lives. Children raised in such homes are strongly discouraged from expressing anger, from aggressively seeking their due, and are led to experience guilt over pleasure. Their parents take little pleasure in child rearing and are too constrained to share the pleasure in mastery that leads a child to become enchanted with life. Illness and suffering may be costly ways to seek attention but this coping style is predicated on the premise that some attention is better than none. The management of the patient with hyperthyroidism included giving her burdensome tasks. People with this coping style, who complain, do not seek relief from the physician. They want the physician to commiserate with them about their burden, but by no means to remove it. For example, compliance would be enhanced if prescribed medicine were accompanied by the message, "I know it will be a bother to take these but please do."

The Guarded, Querulous Person

Persons with this coping style cannot be comfortable sharing tasks with others. They feel vulnerable in such situations and suspect they are being taken advantage of. They are consequently very guarded in social situations, watching for signs of others' intentions. They mistrust the world, cannot be a comfortable part of it, therefore feel let down by it, and tend to blame others for misfortunes rather than themselves. They are prone to feeling slighted and consider the attention directed toward them ineffective. To understand the underlying psychodynamic one may observe children blaming the table they bumped into as causing the hurt and calling it a bad table. The somewhat older child may say "I didn't do it, the doll did." The underlying conflict includes the self-concept as comforting and all-good versus the concept of the world as all-bad and dangerous. These are patients who easily become dissatisfied with treatment and initiate malpractice suits more quickly than others. It is incumbent on the physician to inform patients with this coping style clearly and precisely and in as much detail as possible about the process of diagnosis and treatment. Illness threatens their coping style in a most central way because they find it difficult to conceptualize misfortune as deriving from themselves. Such patients have a tendency to consider their ill bodies apart from themselves. It is extremely important not to become argumentative with people with this coping style. They will respond to an attempt to convince by argument with further mistrust.

An understanding of the coping styles reviewed, the underlying psychodynamic conflicts, and the typical childhood patterns is relevant to effective health care. Such coping styles constrain the doctor-patient relationship in certain ways; they are long-standing and relatively immutable. Doctor and patient must work within these constraints. Also, a primary physician may be called upon to help a family adjust to such constraints and understanding them is an aid in providing such counsel.

The important criterion by which one may determine the quality of the doctor-patient relationship concerns the sharing of information. Doctors and patients who can face the issues of health care in a direct and forthright manner work well together. Conversely, those relationships in which information is concealed and/or managed deviously will not prove as effective. Although it has not been positively demonstrated, it is probably true that morbidity is higher in those relationships in which the issues cannot be shared in an effective manner. Understanding psychodynamic issues as a doctor-patient relationship unfolds from beginning to end is the key to establishing effective rapport.

TRANSFERENCE IN THE CONTINUING CARE RELATIONSHIP

We shall now consider the continuing relationship with a patient who only occasionally suffers from acute episodes of disease.

Everyone wants to take health for granted; the existence of a health care relationship represents not taking health for granted. Moreover, the physician is the one who tells the patient that he is or is not healthy. This threat to the patient's wish to take health for granted leads to resentment that is directed by the patient at the physician and at himself. For example, most patients do not enjoy a vaginal exam or a proctoscopy; they submit to such procedures for early detection of cancer but harbor resentment either consciously or unconsciously. Most patients are relieved to be told the test was negative. The continuing care relationship is thus strained by conflicting meanings, namely, threat of illness, resentment about intrusion, reassurance about health, and fear of being viewed as a malingerer versus the wish to take health for granted and consider none of the above. Because of such conflicts patients may break off contact with physicians in order to deny any possibility of illness and weakness.

The ordinary child with an ordinary illness resents the illness but does not experience anxiety. The ordinary mother of such a child is more concerned than the child. Indeed the child resents his mother's concern almost as much if not more than he resents the illness and maternal efforts of "primary" and "secondary prevention" (for example, for the former, "Remember your galoshes!" and "Put on a sweater!" and for the latter, "Stay in bed!" and "Why don't you get some sleep!"). Resentment of techniques used by concerned mothers is compounded by the "guilt-tripping" injunctions that accompany the words. These maternal techniques serve as precedents for the adult's response to the physician's primary and secondary preventive techniques. When a physician recommends that a patient lose weight or stay in bed there is a chance that he will be "heard" as an overconcerned parent. The here-and-now resentment of the intrusive attention of the physician may be compounded by the past resentment of maternal attention. To the physician who is unaware of the psychodynamic meaning of the patient's resentment, the latter may seem bewildering. The physician is only doing his job — preventing and/or diagnosing and treating illness. (A moment's thought about a physician's response to a dentist who found two or three cavities at each checkup might make the here-and-now component of the patient's resentment clearer.)

Conflicts that affect the continuing phase of the health care relationship may be exemplified by the treatment of hypertension. A patient with hypertension does not feel ill. A physician's recommendations to stop smoking, to lose weight, to cut out salt, and to take medications may

be received as unwelcome intrusions; patients often experience resentment and threat at not being able to control their own lives. The resentment may in turn lead to denying the import of bad news, and non-compliance and failure to continue the relationship often follow.

These negative reactions to the therapeutic efforts of physicians can best be avoided by a thorough exploration of the affective responses of patients to being told that they are ill and need to adjust their daily lives accordingly. This means that physicians need to be alert to how patients feel about symptoms, diagnosis, and prescribed alterations in their daily living. The physician who is truly interested in establishing continuing relations with patients must be willing to share the chagrin of patients occasioned by the news he delivers to them.

The chagrin and disappointment experienced by patients at no longer being able to take states of health for granted also lead to resentment directed at the self. Some patients become guilt-ridden and unconsciously blame themselves for the illness. Others respond with shame and doubt; their continued acceptance by others and their capacity for ordinary social relations become impaired. An example of a shame response is "If they find out about my high blood pressure they will fire me." It is just as important to share these responses to an illness as it is to share the resentment of the physician. The resentment directed at the self is derived from an almost universal unconscious fantasy of perfect bodily integrity and continuing power. This mostly unconscious fantasy may be stated as, "I will continue to be as I am now forever, and will be able to do almost anything I set my mind to do." This fantasy persists in almost everyone in spite of much realistic evidence to the contrary. The storm of rage at the self occasioned by illness is therefore a combination of realistic disappointment and the explosion of an unrealistic personal myth of omnipotence. It is not expected that the ordinary patient will provide data that illustrate this almost universal unconscious myth of immortality. Rather the exaggerated responses of patients become more understandable if the physician is aware of such personal myths. Occasionally one encounters an unusually perceptive patient who is able to get in touch with such deeply buried myths and who lets us know about the others.

"Some patients aren't really ill, they're just seeking attention." This kind of statement is always partly true. If a physician is to label a patient as primarily an attention seeker, he must have gathered the information that serves as a valid foundation for the statement and a prescription for a course of action. Merely ruling out the presence of structural pathology is not sufficient; the physician should have searched for the lacks in the patient's interpersonal support systems that led him to turn to the doctor for attention. Such lacks and conflicts need to be spelled out before the patient is labeled. There are patients who "somatize" their conflicts.

A twenty-eight-year-old woman was having great difficulty separating from her mother. She worried periodically about the possibility of breast cancer. Since she had chronic cystic mastitis she could usually find a lump in her breast that would furnish a basis for escalating her worry. On one occasion she visited a surgeon to check out a lump she found and experienced great anxiety in the waiting room. The surgeon examined her and reassured her that all was well. Three days later the patient developed the vesicles of zoster (shingles) and pain in the exact location of the lump. She said, "Even I can now say that there is no clear borderline between the psychologic and the somatic."

The patient was in conflict as she tried to free herself from a dependent-hostile relationship with her mother. She transferred the problem from her relationship with her mother to her relationship with the surgeon, and the anxiety she experienced about the lump found expression in a viral disease. In psychodynamic terms we consider the primary gain of a symptom to be that meaning which permits a compromise resolution of conflict. The attention that accrues from the symptom itself is called secondary gain from the illness. It is not enough to label the often vicious cycles that attend seeking attention for symptoms; familial and other social support systems must be investigated and attempts made to intervene, as was done in the case of the woman with hyperthyroidism.

PSYCHODYNAMICS OF THE TREATMENT OF CHRONIC DISEASE

The chagrin experienced by a patient with a treatable illness is nothing compared to that experienced by a patient who suffers a chronic disabling disease for which the physician has not only no cure but for whom the physician can offer only partial relief. The disability and pain that accompany chronic disease can lead to embitterment and social withdrawal; the psychological disability that accompanies chronic disease amplifies the physical pain and disability. If the physician and the patient with chronic disease do not face and share the unpleasant realities, the psychological disabilities may quickly become unmanageable. The patient and/or the family begin to "shop" unrealistically for the doctor or the clinic that has something to offer. Such patients often wind up prey to charlatans and/or are prematurely extruded from families and placed in chronic care facilities. The time to face the realities of chronic illness is when the diagnosis is made and treatment initiated. With each exacerbation attention to the social and psychological consequences must be thorough. If such attention is not forthcoming the ensuing depression and withdrawal become as chronic and untreatable as the original disease.

The person suffering from chronic illness must come to grips with disenchantment. As the downward trajectory of his illness becomes ever more evident, often accompanied by chronic pain, he becomes disenchanted with self, with life, with family, and with his physician's efforts to provide hope and relief. Psychodynamic understanding of such severe disenchantment must include a consideration of enchantment. Enchantment with life begins, of course, in childhood. The roots of disenchantment thus go as far back as people have memory and include attitudes toward the self that are unconsciously maintained. None of us consciously remembers our first steps, but anyone who has watched the "interpersonal field" in which children take their first step will understand the response of both self and family to an illness that deprives a person of the ability to walk. Consider the parent hovering around the yearling child eager and expectant. Consider also the child of a year and three months who is so proud of his ability to walk. A child who has learned a new skill feels omnipotent, very much the master of the universe. As each developmental task presents itself the child is challenged anew and mastery leads once again to feelings of omnipotence. Adults have such feelings as they walk into a strong wind or breast waves in the ocean. Curiosity about things not yet known or accomplished and faith that within average expectable limits the problems of life will be mastered are some of the components of enchantment. They are also the components of disenchantment.

We have all known people who, despite much chronic pain and disability, preserve the feeling of enchantment with life, self, and others. The goal in the management of chronic illness is to help the person preserve his feeling of enchantment as long as possible. This is more difficult for some than it is for others. Understanding the psychodynamic issues will help physicians understand the problems encountered in more depth and breadth.

It is self-evident that the physician must strive to do what he can to minimize the impact of the pathophysiological process on the patient. At each and every turn, however, it must be kept in mind that the patient and the family are aware that these attempts are only palliative. The disenchantment experienced by both patient and family raises the possibility of noncompliance that will accelerate the downward trajectory of the disease. All that has been said about establishing that quality of rapport between physician and patient in primary and secondary prevention applies to the management of patients with chronic illness "in spades." Because both the patient and the family worry about exacerbations and medical crises, preparation for such crises must be made. These patients and their families become more dependent on their physicians, more afraid of separations, and if they are not fully informed about what to do and whom to contact for certain specific criteria, feelings of insecurity are heightened. It

might be thought that "what the patient and family don't know won't hurt them" and the physician could adopt a policy of underinforming patients with chronic disease. Nothing could be more off the mark. Patients know more than physicians think they do, but their knowledge is full of gaps. If he is underinformed, the patient will act on his own in a way that is detrimental to his well-being.

In the era of prescientific medicine the impact of disease on a patient's life was often less than the impact of the "cure." The treatment for chronic mental illness was once to deplete patients of half their blood volume. Although this ancient procedure has no parallel in the armamentarium of modern medicine, at least from the physician's point of view, patients and their families might think otherwise. Patients evaluate prescribed regimens according to the degree to which they intrude, their side effects, and the effect the regimen has on the patient's conceptions of self in relation to disease.

A diabetic patient had been treated with oral medication. The time came when a switch to insulin was indicated. With the switch the patient became more fearful. She had managed to deny the severity of her illness while on the oral medication. When she was switched to insulin she was reminded of family members on insulin who had died from diabetes.

Along with efforts to use the techniques of modern medicine in the service of patients, the physician incurs the responsibility of sharing the realities of the patient's future. Patients must be given full opportunity to vent their frustrations about both the disease itself and the inability of the physician to prevent the downward trajectory. Often such feelings can be expressed around the prescribed regimen that in order to be able to share the patient's frustrations at the limitations of modern medicine the physician must first fully acknowledge such limitations to himself. Failure to do so makes it more likely that the physician will respond defensively to the complaining patient. Defensive responses to complaining patients represent an important roadblock to achieving the goal of preserving a patient's feelings of enchantment.

A defensive response is one in which the doctor's anxiety is communicated to the chronically ill patient along with whatever else is being said. The patient perceives the doctor's anxiety, most often unconsciously, but as the disease progresses the anxiety accompanying the messages of others may enter the patient's awareness. Defensive responses generally occur when meanings are in conflict. The conflicts posed for others by patients with chronic illnesses are many and varied. Patients with disabilities and pain are difficult companions, and the desire to be rid of them or to leave their presence is a common conflict. When the patient is a family member, particularly a child, the conflict and related anxieties may be immense. Although chronic illness is common and one out of four people are stricken, chronic illness is considered more uncommon than it really is. So

the second major conflict concerns the meaning of chronic illness as reflected in its expected frequency. Is chronic illness a common part of life, to be responded to in a matter-of-fact fashion, or is chronic illness to be regarded as an uncommon tragedy? For the relative there is also the conflict "better he than I," versus "why not me instead of him." The latter is typical of parents for whom a child's illness is often a tragedy of immense proportions. These conflicts and others underlie the defensive response to patients suffering chronic disease. Defensive responses "advertise" that conflicts about major issues are not resolved and the communications of ordinary life become awkward. The disenchantment of the suffering patient with self and others combines with awkward communication and leads to social withdrawal. In such an atmosphere it becomes impossible to preserve the patient's sense of enchantment.

The physician should provide a model for the patient and the family and indeed should help them to overcome defensiveness in their relationships. The goal of preserving the patient's sense of enchantment with life includes the subgoals of establishing trust and preserving as much of the patient's autonomy and initiative as possible. These may need to be reestablished after each medical crisis. This effort continues to the end so that the physician's regard for his patient's dignity and enchantment with life continues to be manifest as the downward trajectory reaches the point of death.

There are people with chronic illness who also have manifest psychiatric problems in living and there are those who develop psychiatric problems as concomitants of chronic disease. There is little hope that people who were disenchanted with life prior to the advent of chronic illness will develop the capacity to respond gracefully to the downward trajectory of chronic illness, but it occasionally happens that the realities of a physical illness facilitate coping with psychiatric disability. Of course such psychiatric impairments need to be acknowledged in the development of management plans which should include specific psychiatric treatment. The physician should be as straightforward in his approach to the patient's psychiatric impairment as to every other aspect.

COUNTERTRANSFERENCE AND ATTITUDES OF PHYSICIANS TOWARD PATIENTS

The idealized attitude of physicians has been described as a composite of opposing qualities such as detachment-concern, and nonpossessiveness-warmth. The use of such opposing poles indicates that we have no single word that reflects the attitudes we desire and that in turn means that the attitude is difficult to achieve. Furthermore, the opposing poles imply that

each represents an undesirable outcome when present to an extreme, a desirable outcome when present in appropriate combinations. A physician who is overly sensitive to the distress of his patients will soon develop a protective barrier. The physician's manner will have the effect of "turning off" patients — of preventing them from describing themselves in such a way that the physician becomes distressed. The overly sensitive or overly concerned physician, in such a fashion, becomes indistinguishable from the overly detached physician. The overly detached physician is one who feels comfortable with the technical and scientific aspects of medical practice and is unaware of or not open to the more passionate human significance of medical phenomena. It seems clear that the psychodynamic meaning of the idealized attitude is anchored in the conflicts that all people have over participant involvement in the lives of others versus an avoidance of involvement. Medical school admission committees that rely on grades achieved as five applicants compete for one slot are quite likely to admit applicants who are more competitive than compassionate. The dilemma of such committees is more easily accepted when one realizes that there is no adequate quantifiable predictor of the appropriate attitude.

Our understanding of inappropriate attitudes of physicians is better than our ability to teach appropriate attitudes. The inappropriate attitude may be thought of as a culmination of a lifelong history of being inappropriately responded to. A physician who as a child was not accurately attended to will have difficulty attending accurately to others. The physician who is unable to pay accurate attention to his or her patients as individuals is in the grip of a vicious circle. He assumes without asking that he knows where patients are "coming from" and is therefore unable to correct faulty hypotheses. In contrast, a physician who takes the time and effort to find out where his patients are "coming from" learns that there are similarities and differences between patients and is in a position to modify his ideas about people. Further understanding of how such skewed attitudes come about can be sought in other chapters in this text and from personal therapy. The stresses of the practice of medicine are such that personal therapy is rarely contraindicated; quite often the career and clinical usefulness of a physician are much enriched by it.

PSYCHODYNAMIC MEANING OF CERTAIN DICTA

A physician who treats himself has a fool for a doctor. Physicians should not care for their family members, nor should a physician treat close friends. The surface reason for these dicta is that the physician is unable to attain the degree of objectivity that would permit a cool pondering of

medically relevant issues. This chapter is, however, about the more subjective side of the physician-patient relationship, and from the subjective point of view these dicta are similarly wise. The ordinary reason for not treating relatives and close friends concerns the need for detachment. Our understanding of the quality of appropriate involvement is furthered as we understand the differences between involvement with close friends and relatives and involvement with patients. If the physician and patient are unfamiliar with each other they know that they must expend effort in the context of the professional relationship to achieve an accurate determination of "where the patient is coming from." On the other hand, if the physician and patient are closely acquainted they can all too easily assume that they know where the patient is coming from without expending effort in a professional context. It is this coming to know a patient in a professional context that provides a key to what is meant by the involvement of the physician. As much of the information collected is about the patient, the physician participates more as an audience than a partner in a social transaction. When a close acquaintance reveals some gossip it is common to say "how about that!" A physician hearing a similar piece of information is not involved in the same sense as is the friend. The physician registers the information not with relish for the transaction with an equal, but as a piece of information about his patient. This should not imply that a physician must not say "How sad!" or "How great!" in his emotional responses to a patient. The exclamations are, however, about and for the patient. It is exceedingly difficult to shift back and forth from involvement as a physician to involvement as a friend. Information exchange between a patient and a physician when they are also close associates or relatives is compromised. (We plead ignorance of the nature of the relationship between physician and patient in rural areas where friends and patients must overlap.) Perhaps Rosalyn Carter offered a clue to the difference when, responding to a question about the effect of publicity on her private life, she said, "People in Plains have always known everything about me," implying that she was accustomed to being in the public eye.

The doctor-patient relationship is the traditional vehicle for health care delivery; it is vulnerable to conflicts that intrude on the quality of care delivered. They include the passionate realities of the practice of medicine and surgery where cost, both psychological and financial, is pitted against benefit. Conflicts also include the interpersonal dynamisms of everyday life that have a developmental history for both patient and doctor. It is incumbent on both patient and doctor to search for the psychodynamic meanings and roots of conflict in order to accomplish the task of health care delivery. Conflicts are the basis for the often strange, irrational, self-destructive behavior patterns that are observed daily in the practice of

medicine and surgery. The perception of such behavior should instinctively alert the doctor to begin the stepwise unraveling of psychodynamic meaning.

Doctors who would include such a search for the meaning of troubling behavior of both patient and physician will be more helpful to their patients and will have an understanding in depth of the great import of the care they render to patients. The sense of career fulfillment is enhanced. Doctors who don't include such a search abandon the act in the practice of medicine and set themselves up for a career prone to depression and anguish. After a decade and a half of practice one should be able to place oneself in one group or the other. However, the time to begin exercising the art of medicine is at the start of one's career so that the search for meaning becomes as automatic as one's skills at percussion and auscultation.

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Interpersonal Aspects of the Doctor-Patient Relationship

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Knowledge and understanding of interpersonal relationships has increased dramatically over the past decades, and we are now at a point where some of this learning can be applied to vital areas of human concern: international negotiations, business and labor relations, and the relationship between doctors and their patients. In this chapter I hope to show that interpersonal skills are essential to a physician's work with patients.

IMPORTANCE OF INTERPERSONAL ASPECTS

Compliance

In view of all of the other methods physicians have for treating patients, why is it important for them to utilize the interpersonal aspects of the doctor-patient relationship? One reason is compliance. Research on patient compliance indicates that as many as 50 to 60 percent of the medications, instructions, and suggestions given to patients by physicians are not followed. Physicians often assume that when they give a prescription

to a patient, that prescription is followed by the patient according to the instructions on the label. It is alarming to realize that this is true only half the time.

The reasons for noncompliance are complex and varied. However, we do know that a positive physician-patient relationship increases the likelihood of the patient's carrying out the physician's instructions.

Managing Illnesses

A positive doctor-patient relationship can also be helpful to physicians in managing many of the illnesses for which there are no "cures" — diabetes, heart disease, and hypertension are all problems that have no simple medical solution. They require, rather, that the physician and patient enter into a relationship in which the physician attempts to assist the patient by helping him or her to "learn to live with" the problem. Other difficulties — excessive smoking, eating, or drinking and emotional disorders — require the doctor-patient relationship to be strong enough for the physician to counsel the patient about changes in behavior, or in some cases, a completely different life-style.

Malpractice Suits

A positive doctor-patient relationship also may be helpful in avoiding suits by patients. Research has shown that specialties such as psychiatry, whose treatment modality relies heavily on the relationship between the physician and patient, have fewer malpractice suits than other specialties in which the doctor-patient relationship is not part of the intervention. The commonsense notion behind these data is simply that we usually are more forgiving of those we know than strangers.

The Healing Process

Some writers have noted that a patient's ability to recover from illness is dependent as much on the inner state of the patient as on the external therapeutic procedures initiated by the physician [4,5]. These writers postulate a healing process within each of us that must join with the external medication and therapeutic procedures in order to effect recovery from illness. A positive physician-patient relationship is a strong element in helping patients in this way.

ESTABLISHING A PERSON-TO-PERSON RELATIONSHIP

One of the first steps in establishing effective relationships with others is an awareness of the various components involved in the interaction. Virginia Satir [12,13] has identified three component parts of any human transaction: self, the other person, and the context in which the interaction occurs. Thus, my ability to make a person-to-person contact with someone else begins with my awareness of what is going on inside of me. Like others, I have many parts that make up my total person, some of which I am consciously aware of and some of which are outside my awareness. The more parts of my person I recognize, the more persons I will be able to connect with.

Another advantage to self-awareness concerns issues of survival. The more aware I am of the various parts of my own person, the more likely I will be able to find within myself the necessary means for my own survival and self-dependence. Thus, when I come into contact with others, my relationship with them will be free of overdependence that often interferes with positive relationships.

These two aspects of self-awareness — contacts with others and self-survival — are crucial for physicians, who often must deal intimately with scores of people who are very different from themselves. The physician who is self-aware will be able to relate to many more people than one who is aware of only one or two internal dimensions. This concept takes on even more importance when we realize that it may indeed be the *healer* part within the physician that activates the healing process in the patient [4].

Physicians must be skilled in utilizing their internal resources for their own survival in their demanding work. Awareness of these internal strengths and resources will prevent physicians from falling into the trap of believing that their survival depends on how well they are liked by patients (and by colleagues), how many of their patients they "cure," how much money they make, or how high their status is in their community.

Awareness of Others

A person's nonverbal behavior is often a good source of clues about his inner state. In presenting ourselves to others, each of us provides certain indications about our feelings. Our facial expressions, eye movements, the position of our hands, and the movements of our fingers and feet all give information to others [1,2,8]. Sometimes our nonverbal behavior matches or is congruent with what we say; at other times it is not. Research has shown that when a person's nonverbal behavior is incongruent

with his verbal behavior, the listener tends to believe the nonverbal behavior. Our bodies have not yet learned to lie.

If physicians are aware of the nonverbal clues their patients give them, they have important information about the patient's feelings. Patients almost always have a number of different feelings about the illnesses and problems they bring to the physician, and the physician's ability to discern and comment on these feelings is often very helpful in establishing a positive relationship with the patient.

For example, a woman who has been coming to the doctor regularly for examinations and checkups arrives at the clinic because she has received a card asking her to come back for a repeat of her Pap smear. She is highly anxious, because never before during the ten years in which she has been undergoing this examination routinely has it been necessary to repeat the test. In addition, she reports that since her mother and father died of cancer, she is worried that she, too, may have cancer.

The doctor assures her that the second Pap smear is quite routine and does not mean that she has cancer. He explains that the questionable cells found in the first smear could be caused by various conditions including a slight infection in the vagina. If the physician is also able to comment on the woman's anxiety and nervousness, a person-to-person relationship is begun, and the physician assists the patient in an important way, making it possible for her to comply more readily with the second Pap smear and the physicians' subsequent recommendations.*

In addition to being aware of the nonverbal cues sent out by patients, physicians should also endeavor to become aware of their own nonverbal signals and the feelings behind them. For physicians, the situation may be even more complicated. For example, if the physician appears to be worried and upset, the patient may guess that it has something to do with his condition. In fact, however, the doctor may be upset about an earlier argument with his spouse or some other personal matter entirely unrelated to the patient.

Awareness of the Context

It is also helpful to be aware of the context in which one's interactions with others take place. Physicians find that treating patients in their own office is different from treating them in the hospital ward, in the emergency room, or in the clinic. While it is possible to establish a person-to-person connection with patients in almost any setting, quiet and privacy are usually more conducive to sharing feelings and inner states.

*This vignette is part of a simulated physician-patient interview developed for teaching purposes by Jean Wiese and others at the University of Kentucky School of Medicine.

ACCEPTANCE OF SELF AND OTHERS

Acceptance of self is an important step in one's growth and development and in making effective contacts with others. The popularity of many books dealing with self-acceptance indicates that, for most of us, this issue is not completely settled [6,7,9].

All of us are young for a very long time, and in the process of growing we must learn to make our behavior conform to the expectations of others. Many of us receive a great many "not O.K." messages about our behavior and are quite baffled to realize, when we reach adulthood, that we really have a low opinion of ourselves. It may take some effort to move beyond this point of low self-esteem so that we can credit ourselves for our efforts and achievements. Some persons are troubled by the notion of self-acceptance, because they are aware of many parts of themselves with which they are not completely satisfied. They reason, "If I accept myself, then that means I accept this part of me that I don't really like." Understanding and accepting ourselves does indeed imply accepting parts with which we may be dissatisfied. However, this acceptance, rather than precluding any personal change, is often the first step in enabling us to discard a part of ourselves that we do not like or that does not work well for us, and substitute for it a part of a behavior that is more satisfying and functional.

It is also important for us to accept ourselves over and above any role that we might be playing. Some of us fall into the trap of saying to ourselves, "If I can just get to be a physician (or a lawyer or a social worker or a mother or a father), then I'll be O.K." This implies that if I am able to occupy a particular role in society, others will accept me and I will accept myself. This is often a dangerous trap, because roles are linked with tasks. Therefore if I link my self-esteem to the performance of a task or set of tasks, this important aspect of my personal growth is hooked to my ability to perform my tasks well. If I am unable to do so (because of illness, retirement, or other circumstances), I will suffer a severe blow to my psychological well-being through diminished self-esteem.

Another trap for physicians and other health care professionals is overidentification with their roles. The role of the health practitioner is often so demanding and absorbing that many professionals lose sight of their own person while performing their tasks. This is most unfortunate, for in laying aside their humanness, with all of its faults and limitations, they may no longer feel free to be themselves. As professionals, they may feel that they have assumed the responsibility to be something better than mere persons. This terrible burden of responsibility often interferes with their ability to grow and develop as individuals and to establish effective person-to-person contacts with their patients or clients.

There is a link between a person's ability to accept himself and his ability to accept others. Often those aspects of ourselves that we have difficulty in accepting are exactly the characteristics that we cannot tolerate in others. It is also difficult for us to accept and appreciate persons whose lifetime experiences are vastly different from our own. Since I am a white middle-class male professional from the urban east coast of the United States, it is difficult for me to appreciate and communicate my acceptance to a black lower-class female from a rural area. Similarly it would be just as difficult for me to relate to an older, very rich, politically prominent person. It is as if each of my social characteristics has evolved into a set of filters that organize my perceptions and ideas selectively, permitting some to pass through and separating others out. Although these filters are useful as an ordering device, they inhibit my ability to perceive accurately and accept other persons fully.

What, then, am I to do, since so many of the people who come to me for help are vastly different from me? A technique that is helpful for me is trying consciously to suspend my filters long enough to perceive accurately what the other person is saying. Then I try to accept that other person's situation and point of view. This acceptance has nothing to do with "truth" or "right" or "wrong"; it merely is an acknowledgment of how the world looks to that other person [10,11]. Although this can be a rewarding experience, it can be somewhat disquieting. By putting myself in the other person's shoes, by trying to understand accurately how he thinks and feels, by seeing the world as he sees it, I run the risk of upsetting my own world view and having to change my behaviors, attitudes, and opinions. By becoming knowledgeable about another person's experience, I invite the possibility of having to reinterpret my own.

In managing patients who suffer from diabetes, heart disease, or hypertension, who misuse alcohol, nicotine, or other drugs, who are obese or malnourished, it is essential for physicians to understand the meaning these problems and diseases have for their patients. Frequently doctors have in mind the "right" behaviors for dealing with all of these problems; however, we know that simply informing patients of the "right" way to behave is no guarantee that they will comply. What then, is the physician to do? By momentarily suspending his personal judgments the physician may be able to catch a glimpse of the meaning of a given problem for the patient. By communicating understanding and acceptance of the situation as real for the patient, the physician may activate the patient to begin working on his own behalf. The physician can then enter into collaborative problem solving with his patients that will aim at restoring whatever degree of health is possible.

How can the physician indicate to the patient that he is listening and trying to accept the patient's view of the situation? A number of methods

are available [3]. Nonverbal acceptance is one. The physician can show that he is listening to the patient by attentive posture, eye contact, an occasional nod of the head, or some other nonverbal sign of attention and acceptance. The physician can also invite the patient to say more by using short, simple phrases such as "I see," "Yes," "Mm hummmm," and others that communicate the physician's interest and acceptance of what the patient is saying.

Another form of attentiveness is called by some proponents *active listening*. Using this technique, the listener refashions in his own words the message he has received from the sender, and repeats it to the sender for verification. The listener does not try to include a message of his own, but simply reflects the content and feeling of the sender's message. Active listening has a number of positive consequences. First, it enhances the patient's self-esteem. Second, the patient may feel that the physician "really understands." This should encourage the patient to speak more openly; communication between the doctor and the patient is thus facilitated. If the patient feels free to talk honestly with the doctor and to communicate his feelings about the problem or illness, physician and patient have entered into a person-to-person communication with each other.

These forms of communicating acceptance to the patient should be genuine. Patients and others can usually tell when someone is trying to manipulate them by pretending to accept them and their feelings. This often results in the highest degree of distrust and withdrawal on the patient's part.

COMMUNICATION STYLES

Effective communication is possible between two persons if both are aware of and can comment on what is going on within themselves and what they are aware of in the other person and in the context in which their interaction is taking place. The three aspects of interpersonal relationships: self, other, and the context [12,13] are central. When we are stressed or believe our self-esteem is on the line, we run the risk of leaving out one or more of these important elements. The result is communication that is unproductive and often damaging to the relationship. The following are some dysfunctional communication styles and how they might occur between physicians and patients.

Blaming

If I am under stress, or believe that my self-esteem or some other important aspect of my psychological survival is on the line, I may run the risk of

forgetting that you are there. I may overlook the importance of establishing effective person-to-person communication with you, and concentrate only on myself and what I need. Under these circumstances, I run the risk of being highly critical of you and blaming you for what is not going right.

Physicians are often under a great deal of stress and may sometimes feel overwhelmed by their responsibilities for helping others. When confronted with patients who have not taken care of themselves, the doctor may be tempted to blame them for their improper behavior. "You should have come in earlier!" "You're drinking and smoking too much, Mr. Jones!" "You're simply going to have to lose some of that weight, Mrs. Smith!" In such situations the physician fails to be aware of the other person and to perceive the context in which the problem exists. Curiously enough, the blaming physician's inner feelings may not be reflected in his outward behavior. The physician may feel quite frustrated at confronting serious problems that he feels helpless to deal with. Such physicians may also feel isolated because they are cut off from the persons they wish to help.

Placating

If I learned during my own growing-up that the best way for me to survive was to try to please others at all costs, I am a good candidate for placating. Placators often believe that they can do nothing to help themselves; therefore, their survival depends upon others. Physicians may fall into the placator's communication style if they lose touch with themselves and concentrate too hard on helping others.

More often, however, it is patients who present themselves to the physician as placators. Forgetting that their health depends upon themselves and not the doctor, patients often consider the physician to be solely responsible for their survival. They may apologize for being late or for taking up so much of the doctor's important time, or they may agree to do whatever the doctor suggests and promise to follow his prescriptions to the letter. The doctor may be conned into believing that the placator will indeed follow orders, only to find on the return visit that the patient has not fulfilled any of the promises that were made. The doctor may then resort to blaming. "Why do you always tell me that you will follow my instructions, and then never do it?" "I'm really terribly sorry, Doctor, but you see . . ." The placating patient has found the perfect foil—the blaming physician.

Obviously, this pattern of communication between physician and

patient is not only highly unproductive but also unsatisfying for both. It comes close to being tragic when one realizes that this pattern can be repeated visit after visit for the lifetime of both physician and patient. It does not have to be this way. Other modalities of communication exist that are more productive and rewarding for both physicians and patients.

Superreasonable

Some of us have learned from early childhood that the best way to survive is to use our minds and our abilities to think and reason. In a highly complex and technological society, this skill is important for everyone. However, problems occur in communication when I forget about you and me and can comment only on the facts involved in a situation.

For example, my wife says she is feeling sad. I reply coolly and calmly, "It is known that women suffer depression in greater numbers than men." My friend at the office says that he is depressed. My reply is, "Research has shown that men between thirty-five and forty-five years of age often go through a midlife crisis which involves questioning their basic life goals, values, and assumptions. This often results in periods of depression." Instead of acknowledging my feelings to you or commenting upon what I have heard from you, I offer only some fact or set of facts that I believe to be appropriate to the context in which you and I are relating. In these situations, my wife and my friend will not feel that they have made person-to-person contact with me, nor will they feel that I understand what they are experiencing.

Physicians, of course, possess a great deal of factual information about illness and disease. The very depth of their knowledge can easily lead to the mistake of supplying facts and data to patients who are not ready to hear them and who are really asking for something else from the physician. For example, the anxious woman in the earlier example was really asking her physician for some reassurance and assistance with her anxiety when she appeared for a second Pap smear. While the physician could easily supply the basic facts and information about the examination, the woman probably would have difficulty hearing them because of her high anxiety level.

If the physician leaves out self and other and concentrates on just the facts, he may have real trouble in establishing positive, productive relationships with patients. Again, persons who follow this communication style often do not feel inner satisfaction. Because of their inability to relate to others (which may extend beyond the doctor-patient relationship), they often feel lonely and isolated.

Irrelevant

The irrelevant communication style is infrequently used by either physicians or patients. In this mode all three essential elements of effective communication are omitted. Persons who use an irrelevant style of communication seldom respond directly or accurately to what is said to them; instead, their responses are usually tangential and off the point. Sometimes they elicit laughter, and sometimes they laugh themselves. However, their laughter and that of others tends to be hollow because they are unable to make meaningful contact with others.

The relation between communication style and attitude toward survival is missing in this form of communication. The blamer relies on himself for his survival; the placator, on others. The computer relies upon his thinking and reasoning faculty to marshal the facts necessary for survival. In this fourth, irrelevant style of communication, all of these anchoring points are gone. Such a person often seems like a very small ship being tossed about in the rough sea of interpersonal communications. In its most florid form, irrelevant communication is termed psychosis. Physicians and other health care personnel must watch themselves carefully to guard against losing touch with the anchoring points of self, other, and the context.

It is essential that the physician attempt to establish some form of person-to-person contact with any patient who is an irrelevant communicator. Such a person may not have sufficient resources for helping himself. If the physician is successful in interacting with this patient, the physician provides much needed help and increases the probability that whatever subsequent suggestions are offered to the patient have some chance of being heard and accepted.

CONGRUENT COMMUNICATION

Satir suggests that effective communicators are aware of their own internal states, what they are experiencing from others, and the context in which the relationship is taking place. In addition to their awareness effective communicators are able to comment on their own internal states and the clues that others present. They are also able to comment on the various contexts in which they may find themselves.

However, many of these prescriptions for effective communication are easier said than done. Being able to comment on myself and my own inner state may mean sharing with you feelings that I think make me look weak or foolish or stupid. Even though I know that these are real feelings,

and even though I realize that I am not the only one who has them, it is still difficult for me to share myself openly with you in this way.

Similarly, if you are angry or close to tears or feeling very upset and disconnected, I may find it difficult to acknowledge your feelings. Once they are acknowledged, I am aware that feelings must be dealt with, and that this often takes time and energy for me to listen effectively and appreciate the situation as you see it.

Sometimes it is even difficult for me to comment on the context in which I find myself. When I am in a group where everyone else seems to understand and assent to what is going on, I am often reticent to acknowledge that I do not. It is risky to be the first one to say, "The king has no clothes."

Nevertheless, despite these difficulties, I have found that when I am courageous enough to share myself with others, when I can genuinely appreciate what they are saying and experiencing, and when I am free to comment on the context or situation in which I find myself the resulting experience of a person-to-person relationship is one of life's most rewarding events. Those who do clinical work are privileged to experience these rewards frequently.

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17

Placebogenic Aspects of the Doctor-Patient Relationship

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The doctor-patient relationship is the requisite condition for rendering effective health care. It represents the interaction of two persons in a help-giving/help-receiving transaction, in which both parties experience reciprocal influences affecting the outcome. The psychological factors that mutually influence the behavior of the members in this relationship constitute its psychodynamic aspects. Most of the psychological processes that underlie these behaviors remain at an unconscious level and need to be understood so that they may be monitored in a manner that would allow their conscious control in order to maximize the therapeutic outcome. This chapter deals with the so-called placebogenic aspects of the doctor-patient relationship; that is, with those nonspecific psychological factors that play a role in the therapeutic outcome of every medical intervention, particularly drug treatment.

The term *nonspecific* describes all those factors that are not part of the specific therapeutic action characteristic of a given procedure but have an influence on the intended outcome. The factors that are nonspecific but have an effect on the therapeutic outcome are referred to as *placebogenic*. They constitute a significant part of the psychodynamic aspects of the doctor-patient relationship, and may also be observed in any situation in

which an expectational set exists with regard to the outcome of an activity. It is the subject's mental set and the setting within which an activity occurs that determine its nonspecific effect. The term *mental set* refers to the subject's conscious or unconscious expectations and psychological attitudes regarding the outcome of behaviors that are intended or expected to affect him in some manner. The term *setting* defines all the surrounding circumstances or environmental contingencies in which the above behaviors take place and secondarily affect the subject's set. All the nonspecific factors associated with the set and setting of behaviors that are performed with the expectation of having a certain effect on a subject are encompassed by the term *placebogenic*. The placebo effect describes the outcome of such factors, and can be observed in a variety of situations. Of particular interest are the placebogenic factors associated with the so-called placebo effect of drugs, either prescribed by a physician or obtained by self-medication. Nevertheless, one should be aware of the fact that placebo effects represent a much broader phenomenon that can be observed in situations outside the doctor-patient relationship as well as in every aspect of medical practice, [16] including, besides drug prescription, the medical procedures of interviewing, physical examination, surgical operations [15], physiotherapy [164], and psychotherapy [54]. Placebogenic effects also play a significant role in a variety of other situations, including hypnotic phenomena, faith healing, self-medication, and drug abuse. Wolf defines a placebo effect as ". . . any effect attributable to a pill, potion, or procedure, but not to its pharmacodynamic or specific properties" [197:689].

PLACEBOGENIC CONTRIBUTIONS TO THE PRACTICE OF HEALING

Drug Therapy

Drug prescription is the most common procedure in medical practice, as it is primarily through the use of drugs that doctors attempt to treat patients. Not long ago, and before the advent of modern pharmacology, most drugs used in medicine were inactive substances (placebos) or active chemicals void of any specific therapeutic effect, which, however, were able to exercise powerful placebo effects thought of as "cures." With the introduction of potent and effective drugs in the practice of medicine, physicians have relied heavily on their faith in the specific therapeutic effects of drugs, with an increasing tendency to overprescribe them. The problem of "polypharmacy" appears to be widespread, as is the problem of prescribing excessive amounts of drugs. In evaluating national and international trends in prescribing drugs, one observes that there has been a steady increase in

their availability as well as in their social acceptance [136]. This increase is particularly notable in the prescription of psychoactive drugs, including hypnotics, sedatives, major and minor tranquilizers, CNS stimulants, and antidepressants. These drugs present the highest potential for placebo effects, in view of the fact that their pharmacological effect is subjectively experienced. Both the nonspecific placebogenic factors and the specific pharmacodynamic action of the psychoactive drugs use a common pathway, namely, introspected changes of the conscious experience, through action on the mind. It is pertinent to review some of the evidence concerning the widespread increase in the use of these drugs.

According to Sharpless [167], "Since 1954 over 360,000 kg (approximately 800,000 lbs) of barbiturates have been produced in the United States every year (enough quantity to fill 33 x 60 mg barbiturate capsules for every person in the United States." Similarly, estimated numbers of prescriptions of barbiturates and other hypnotics in England and Wales rose by more than 20 percent from 1961 to 1970 [136]. Commenting on the use of hypnotics, Dunlop [45] writes, "Very roughly these represent sufficient tablets to make every tenth night's sleep in the United Kingdom hypnotic induced." With the recent introduction of government controls on prescribing and dispensing barbiturates, most of the increase in the prescription of hypnotics has been caused by prescription of nonbarbiturate hypnotics. Prescription for these, in the United Kingdom, increased by more than 144 percent during the period from 1965 to 1970.

The number of prescriptions for tranquilizers and antidepressants has shown a similar increase over the past two decades. The number of prescriptions for tranquilizers in England and Wales rose by more than 250 percent, from 6.2 million in 1961 to 17.2 million in 1970, and for the antidepressants by more than 300 percent, from 1.4 million to 6.4 million during the same period [136]. Copperstock [34] in Canada found 99 prescriptions for psychotropic drugs per 100 adults in 1965. The comparable figure for the United States in 1969 was 133 per 100 adults [136]. None of these increases can be explained in terms of rise in population. With the multiple increase in the prescription of sedative and psychotropic drugs, there has been a parallel increase in their indiscriminate use and abuse, as judged by the rising frequency of their use in self-poisoning (overdosing) [135]. For example, Lawson and Mitchell [105] report, in a series of more than 900 patients in the United Kingdom, that the proportion of people using psychoactive drugs for self-poisoning increased from 4 percent to more than 20 percent during the period from 1965 to 1970.

Similar trends have been observed in Canada and the United States [136]. Thus, according to Whitehead [191], the known cases of self-poisoning with barbiturates in Canada rose from 197 to 487 and those with tranquilizers increased from 63 to 973 between 1961 and 1967. Rathod [135]

points out that "These examples show that indiscriminate use (abuse) of drugs is directly related to national trends in prescribing, that is, to availability and social acceptance." The problem of drug abuse, which reached epidemic proportions in this country during the 1960s, continues to be a major social concern in most developed countries [138]. In view of the significant role that drugs play in modern societies, it is important that physicians understand the psychodynamic aspects of drug treatment within the context of the doctor-patient relationship. It is hoped that the physician's understanding of and appreciation for the placebo aspects of drug therapy will enable him to develop a more rational approach to prescribing drugs.

It has become increasingly apparent that drug effects are the result of a large number of factors which seem to determine what is universally recognized as "individual variability" of response to drug action. Factors that enter into a complex interaction to produce this variability include the drug, body tissues, personality structure, ego functions, the past experiences of the subject, and the transactional or interpersonal aspects of the setting in which the drug is used. It has been demonstrated that in animals individual differences are crucial determinants of drug effects, and are even more so in humans, in whom cultural, sociological, historical, symbolic, and psychodynamic factors make them highly variable even if one disregards the physiological differences among them.

Considered from a communication viewpoint, drugs constitute a highly complex informational input carrying a variety of messages at different levels, the meaning of which depends on the particular interpretive characteristics of the various system levels of the receiving organism. For example, the biochemical messages of the drug will be interpreted in accordance with the interpretive characteristics of the tissue enzymes at the site of drug action which are peculiar to that organism. On the other hand, the perceptual, psychological, interpersonal, and symbolic messages associated with the administration of a drug and its subjective effects within the context of the various transactional aspects of the doctor-patient relationship would be expected to be interpreted in accordance with the particular way in which the patient understands the meaning of these messages. It is, therefore, evident that such messages may have different meanings for different individuals and for the same individual at different times. Furthermore, the behavioral and experiential changes produced in the patient by these input-output exchanges would be expected to have a feedback effect on the patient and would exert significant influence upon the physician and all who transact with the patient. The placebo effects of an active drug are the nonspecific drug effects, as experienced by the patient, which are independent of the physiological or pharmacological action(s) of the drug. Stated differently, the placebo effects constitute the interpretive outcome of the drug-host-environment interaction. People are

integrated into complex interpersonal systems, in which information exchange occurs at their interfaces, by means of reverberating, circular transactions. One may also view the doctor-patient relationship as a transactional system in which several subsystems interact with each other and result in behavioral and psychological changes that affect all the members involved in the transaction. In drug therapy, the major factors that enter into this transaction are the drug, the patient, the physician, and the setting. The dynamic interaction influences each factor in a complex manner, which is generally poorly understood [81, 183, 195].

Other Medical Procedures

The following examples illustrate the significance of placebo effects in medical procedures [16] other than prescribing drugs. A common occurrence is the situation in which an anxious patient, suffering from acute "physical" pain, exacerbated by his fear that it might be due to a serious underlying illness, may experience significant relief from the pain after examination by a physician and feel assured that he will receive competent care. Similarly, a patient with a "functional" pain, such as chest pain secondary to an anxiety attack, may experience immediate disappearance of the pain once he is brought to the emergency room of a hospital and is seen by a doctor — without any other medical intervention. Also, there is a group of patients who chronically complain of various physical symptoms of functional origin and seek relief from their suffering by consulting several doctors until they find one who is willing to perform surgery to relieve the symptoms. Such patients may profess a temporary remission of their functional complaints as a result of the placebo effect of surgery; that is, their expectation that the operation would be beneficial was realized. Some of these patients, described by Karl Menninger [123] as "poly-surgery patients," consult physicians not for relief from their disturbing symptoms but because they unconsciously seek greater pain and suffering than their original complaints provide. These patients find satisfaction in suffering in an effort to relieve their unconscious sense of guilt or to satisfy their masochistic strivings. When they finally have an operation, the suffering associated with it, perceived as punishment, temporarily lessens their guilt, and secondarily, their physical discomfort. However, this is a short-lived effect, and the patient will soon experience a relapse of his previous symptoms or a new crop of symptoms, as he repeats the pattern that eventually leads to polysurgery.

Another example of a placebo effect is the so-called transference cure or flight into health. This is commonly seen in psychiatric patients suffering from psychoneurotic disorders, with symptoms of anxiety and depression, who often show a dramatic improvement after the first or second interview with a psychiatrist, professing a rapid "cure," which invariably

does not last very long. The placebo effect is again associated with the patient's expectation for an instantaneous or magical cure by an omnipotent doctor, an attitude that develops as a transference phenomenon within the doctor-patient relationship. The placebo effect in all these instances involves changes in the subjective experience of a symptom. The remarkable fact, however, that placebos can produce objective physical change as well is not widely recognized [2,17,74,78,93,184].

Of special interest is Beecher's [15,17] investigation of the existence, nature, and extent of the placebo effect in surgery and the role that the surgeon's enthusiasm plays in producing postoperatively significant mental and physical change. This change can be extensive enough to account for differences in results of the treatment of two patients, one who believes in the procedure involved and the other who does not [17]. Beecher studied patients who underwent ligation of the internal mammary arteries for the relief of angina pectoris. He points out that when this procedure was first introduced in the United States, it was received with enthusiasm and the results were spectacular, as reported in early uncontrolled studies. However, it was soon realized that the results were fleeting — lasting for a number of weeks. It was subsequently demonstrated that the benefit was due not to changes in blood flow produced by the ligation but "to what happened in the minds of the patients and the surgeons involved." Thus, Beecher [15,17] showed that, although ligation of the internal mammary arteries did indeed lead to a decrease in angina pain, to a reduction in the nitroglycerin consumed, and to an increase in work possibility, the same things occurred just as well when only skin incisions were made in a properly designed study. In this study it was also demonstrated that "enthusiasts can get decidedly better therapeutic results than skeptics." Enthusiastic surgeons, as compared to skeptical ones, obtained four times more complete angina pain relief.

In addition to positive placebo effects, one may observe negative effects, namely, adverse reactions, side effects, or worsening of the subjective complaints for which the patient is treated. This is most likely to occur in patients who feel that they have not been helped by their doctor, who harbor resentment and hostility toward their doctor, or who fear that the medical procedure was injurious to their health. Furthermore, patients who derive significant secondary gains from their symptoms and incapacitation, such as increased attention or gratification of their dependency needs, may also experience negative placebo effects from a treatment. Patients with a strong masochistic need to suffer may fail to experience the specific therapeutic effect of a procedure, such as surgery, and may continue complaining of distressing symptoms in spite of the removal of the underlying cause of their illness. Finally, serious negative placebo reactions may develop following the surgical removal of an organ which is invested with a special meaning. Thus, following hysterectomy, a woman

may develop various subjective physical complaints or psychiatric symptoms associated with the personal meaning that the loss of her uterus has for her.

Hypnotic Phenomena

The placebo effects are closely related to the hypnotic phenomena. Thus one may be able to modify the subjective aspects of a physical symptom through the use of posthypnotic suggestion, or be able to induce a variety of symptoms in a hypnotizable subject during a hypnotic trance [4]. Barber [5] has shown that unselected subjects given suggestions in the waking state are just as responsive as are unselected subjects exposed to "trance induction," and thus has confirmed Bernheim's observation that there is nothing that can be achieved by hypnosis that cannot also be accomplished in the waking state. A capacity for vividly imagining things suggested to a subject, in any state of subject awareness, increases his responsiveness, as does a covert verbalizing of suggestions to himself, along with an inhibition of contrary thoughts. The nature of hypnotic phenomena involves mechanisms associated with expectation, motivation, and positive attitudes, as is also the case with the placebo phenomena. It appears that in both instances expectational attitudes, either induced overtly or covertly through suggestion, or self-generated, seem to account for these phenomena.

Psychotherapy

The placebo effect represents the result of psychological mechanisms. As a psychological phenomenon of therapeutic relevance, it belongs to the same category of phenomena that constitute the healing art of psychotherapy [165]. To state that the placebo effect works in a manner similar to that of psychotherapy would amount to an inappropriately tautological statement, emphasizing the fact that both phenomena utilize psychological mechanisms. The placebo effect is a ubiquitous phenomenon expressing the pervasiveness of psychological responses to all life experiences which are invested with some expectation. It occurs naturalistically in uncontrolled situations, as well as in experimental situations in which certain aspects of it are placed under investigational control.

The placebo effect is a limited example of psychological mechanisms having therapeutic effectiveness, as well as side effects ("behavioral toxicity"). It is referred to as nonspecific in order to distinguish it from the focused specificity of the therapeutic effect of a procedure under consideration. It is also the ubiquitousness of the effect, being present in every

treatment intervention, that justifies its labeling as nonspecific. On the other hand, it would be inappropriate to define the outcome of psychotherapy as a "nonspecific effect" [175,177], since psychological mechanisms in psychotherapy are specific for this type of therapeutic procedure. It would also be inappropriate to define the outcome of psychotherapy as a "placebo effect" [149], in the same way that it would be inappropriate to define the outcome of pharmacotherapeutics in terms of the effect of a certain specific phenomenon of pharmacologic action. Psychotherapy is based on a conceptual scheme and technical procedure and occurs under controlled situations. There are many schools of psychotherapy, each characterized by a theory and procedure that distinguishes it from others. They all use psychological mechanisms to effectuate therapeutic changes in the behavior of a patient.

There are primitive forms of psychotherapy as well as more sophisticated and more scientifically based psychotherapies. The latter utilize knowledge gained from careful clinical and experimental studies of psychological mechanisms in health and illness. In the example of pharmacotherapy, it can be pointed out that there were primitive types of practice in the prescientific era of medicine by herb doctors and physicians ignorant of the modern understanding of pharmacodynamics that are now being seen in the contemporary patterns of self-medication and consumption of patent drugs sold over the counter. In both instances — the herb doctor and the scientific prescriber of drugs — the common denominator is the utilization of the pharmacological mechanisms of the action of drugs. Similarly, in the instance of the primitive or "wild" psychotherapist and the well-trained clinical psychotherapist, the common denominator is the utilization of psychological mechanisms as a means of producing therapeutic effects. Both pharmacological and psychological mechanisms are powerful means of affecting behavior. Psychological mechanisms are viewed as having specificity when used in the context of controlled situations and on the basis of knowledge and clinical skills acquired through clinical and experimental investigation and adequate training of the user. The professional psychotherapist, therefore, must not be viewed as producing nonspecific placebo effects.

A number of authors have attempted to identify common features shared by all psychotherapies [23,54,110,149,171,175,177,187]. These shared features represent basic psychological mechanisms that are present in any therapeutic or healing transaction, including situations involving placebo effects. It needs to be noted, however, that the various schools of psychotherapy, depending on their particular conceptual scheme, utilize different procedures or techniques to elicit the operation of these mechanisms. Furthermore, a number of these psychotherapeutic techniques are capable of tapping additional psychological mechanisms in variable de-

gree and, thus, one may consider them as being endowed with a more specialized effectiveness for a certain type of pathology.

Those basic features that are thought to be shared by all forms of psychotherapy include persuasion [54], suggestion [14], hope [176], faith [36,155], moral support [54], nurturing one's dependency needs, attainment of mastery over one's problems [54], and others. Behavioristic schools emphasize the role of conditioning in terms of positive or negative reinforcement of certain behaviors that occur in all forms of psychotherapy (for example, studies on verbal conditioning) [23,187]. Susceptibility to persuasion, and its enhancement through communication, suggestion, and expectation of compliance and acceptance are commonly emphasized as basic features shared by all forms of psychotherapy, including religious healing [165]. Jerome Frank [54:23] in his book *Persuasion and Healing* presents a systematic review of the literature on this subject and discusses what he considers to be these common features. Frank suggests that "features common to all types of psychotherapy probably contribute as much, if not more, to their effectiveness than the characteristics that differentiate them." He further suggests that the core of the techniques of healing "seems to lie in their ability to arouse the patient's hope, bolster his self-esteem, stir him emotionally, and strengthen his ties with a supportive group, through several features that most methods share. All involve a healer on whom the patient depends for help and who holds out hope of relief. The patient's expectations are aroused by the healer's personal attributes, by his culturally determined healing role, or typically, by both" [54:76]. After reviewing experimental studies of persuasion relevant to the process of psychotherapy, Frank concludes:

One set [of experiments] shows that a patient's interpretation of bodily feelings becomes incorporated into his experience of them, suggesting one way in which psychotherapeutic interpretations could affect a patient's subjective state. The others are concerned with aspects of the interpersonal influencing process. One series showed that a person's active participation increases his susceptibility to persuasive communications. Other studies found that expectations of both experimenter and subject can strongly influence the subject's behavior and speech. These expectations may be conveyed by the 'demand character' of the total situation which leads the subject to surmise what is expected of him, as well as by cues emitted sometimes unconsciously by the experimenter which have been shown to influence the patient's productions in 'nondirective' psychotherapy [54:134].

He asserts that "psychotherapists whose theory demands that they do not directly influence their patients may grossly underestimate the indirect influence of their own expectations on the patient's productions" [54:135]. Commenting on studies involving response to placebo he writes:

Although persons predisposed to trust others and to accept socially defined symbols of healing are most likely to respond favorably, the response seems to depend primarily on interactions between the patient's momentary state and aspects of the immediate situation. Important among these are the attention and interest of the healer. Relief of anxiety and depression by psychotherapy closely resembles the placebo effect, suggesting that the same factors may be involved. Psychotherapeutic success depends in part on congruence between the expectations a patient brings to treatment and what actually occurs; hence shaping these expectations through instructions or a preliminary role induction interview enhances the effectiveness of short-term psychotherapy [54:164].

With respect to sociocultural factors that influence the therapist-patient relationship and the therapeutic outcome of this interaction, he finds that

the extent of social and educational distance between therapist and patient affects their acceptance of each other. Personal qualities of a therapist that contribute to his success include a capacity to convey concern for his patient's welfare, as well as healing qualities that elude precise definition. Patients' personal qualities predisposing to a favorable therapeutic response include good adaptive capacity and attributes similar to those heightening susceptibility to methods of healing in nonindustrial societies, religious revivals, thought reform, experimental manipulation of attitudes, and administration of a placebo. These include accessibility to other persons, self-dissatisfaction, and emotional distress. When psychotherapy is viewed as a system, its success seems related not only to aspects of the patient-therapist interaction that affect the therapist's zeal and the patient's confidence in him, but also to a convergence of the therapist's and patient's values [54:198-199].

The basic hypothesis in Frank's thinking is that features common to all types of psychotherapy combat a major source of the distress and disability of persons who seek psychotherapeutic help. He terms the source of this distress *demoralization*, defined as "a sense of failure or of powerlessness to affect oneself and one's environment."

Faith Healing

Faith healing is another example of the power of the placebo effect. Throughout the history of mankind the art of healing and curing has been intimately associated with the power of persuasion and faith, within the context of magic, shamanism, religion, or modern science. The ancient wisdom of the healing priest, tribal shaman, or medicine man of primitive societies contains the "mystic" roots of all therapies that one can observe

even in contemporary healing practices within as well as outside the medical profession. The mystic rites, supplications, incantations, ritualized performances, religious excitement, and trances, and other cultist activities that have been used through the centuries in the service of healing, are endowed with the power of suggestion which enhances persuasion and faith and introduces expectational attitudes for relief from suffering by miraculous cures or by salutary intervention of a supernatural nature [30,36,96,113,121,137,185]. Masserman [122] writes "Faith, cant, and conformity became necessary to allay man's renewed anxiety as to his existence and purpose, remained necessary for a thousand years of priestly therapy." In contemporary societies these ancient practices of communal beliefs and rituals continue in the form of many religious or quasi-religious activities that aim to cure illness and relieve suffering. Faith healing is practiced today by many organized systems of religion and faith, and is part of numerous mystical, magical, or cultist performances in our everyday life, including seance cures, yoga, transcendental meditation, wearing electromagnetic belts or copper bracelets, self-cures, autosuggestion and will-training [115], and a variety of other healing cults [137].

According to Jerome Frank [54],

All forms of healing are based on a conceptual scheme consistent with the patient's assumptive world that prescribes a set of activities. The scheme helps him to make sense out of his inchoate feelings, thereby heightening his sense of mastery over them. Non-medical healing rituals are believed to mobilize natural or supernatural healing forces on the patient's behalf. Often they include detailed confessions followed by atonement and reacceptance [121] into the group. Many rituals also stress mutual service, which counteracts the patient's morbid self-preoccupation, strengthens his self-esteem by demonstrating that he can do something for others, and, like confession, cements the bonds between patient and group. Confession and mutual service contribute to the feeling that performance of the healing ritual confers merit in itself. If the patient is not cured, he nevertheless often feels more virtuous. If he is cured, this may be taken as a mark of divine favor, permanently enhancing his value in his own and the group's eyes. This may also help maintain the cure, for if he relapses he is letting the group down. Finally, in religious healing, relief of suffering is accompanied not only by a profound change in the patient's feelings about himself and others, but by a strengthening of previous assumptive systems or, sometimes, conversion to new ones [54:76-77].

Frank further suggests that

religious healing, revivalism, and thought reform all highlight the importance of emotions in facilitating or producing attitude change and in affect-

ing one's state of health. Some degree of involvement seems to be a prerequisite for susceptibility to any of these procedures. Maintenance of emotional detachment is the most effective form of resistance to them. Religious healing underscores the inseparability of mental and physical states. Thought reform and revivalism highlight the importance of a person's immediate social milieu in sustaining or shaking his self-image and world view. Thought reform, in addition, illustrates the use of detailed review of the sufferer's past history, with special emphasis on guilt-arousing episodes, followed by opportunity for confession and atonement, as a means of producing attitude modification [54:104-105].

Cloaked under the magic of science and modern technology, there are widespread practices of faith healing in the form of household cures and self-medication including taking unnecessary vitamins, patent medicines, and over-the-counter drugs, and a vast body of preventive and therapeutic folk medicine and practice. Chiropractic treatments, professed "cures" by the "Church of Scientology," quackery as practiced inside and outside medicine, as well as many legitimized medical practices, all have in common the capacity to heal through the magic power of faith [36,115]. The placebo effect was the most powerful means available to a physician during the prescientific era of medicine, and it continues to represent a significant part of the contemporary physician's capacity to help, constituting what one might refer to as the practice of magic in modern medicine. Relevant to this is Masserman's [122] observation that "Unfortunately, our faith that our modern thaumaturgists can save us all through a conquest of the universe by a scientific technology devoid of human self-understanding is as irrational as the savage's complete reliance on the magic powers of his tribal shaman."

Self-medication and Drug Abuse

The placebo effects of self-medication are clearly exemplified in the contemporary "drug culture" by the use and abuse of psychotomimetic and related consciousness altering drugs, in which both set and setting are powerful determinants of the experienced effect of these drugs. The experiential content of the so-called psychedelic response to LSD-25, mescaline, psilocybin, and other hallucinogens, as well as the altered states of consciousness induced by marijuana, tetrahydrocannabinol, sedative or stimulant drugs, can be greatly modified by a variety of placebogenic factors, including the user's personality, attitudes, motives, and set of beliefs at the time of the drug experience, and the total milieu within which the drug effect is experienced. These factors are decisive in shaping the quality as well as the content of the drug-induced "trip," and determine whether the experience is going to be a "good trip" or a "bad trip." Ex-

amples of psychedelic effects which are greatly dependent on the user's expectations include the reported experience of a self-revealing transcendental state, the attainment of stunning "insights," and the enhancement of creativity, either during or after the experience [85]. These controversial effects have been attributed to subjective convictions resulting from the peculiar experiential state of the subject. Under the influence of the drug, objects that are void of any aesthetic, emotional, or intellectual connotation become overwhelmingly beautiful or are invested with new and profound significance.

According to Freedman [55], "qualities become intense and gain a life of their own; redness is more interesting than the object which is red; meaningfulness more important than what is specifically meant. Connotations balloon into cosmic allusiveness. This can be experienced religiously, aesthetically, sensually." Also, in this state, the familiar acquires the characteristics of a *jamais vu* quality and becomes novel and portentous. It is "the capacity of the mind to see more than it can tell, to experience more than it can explicate, to believe in and be impressed with more than it can rationally justify, to experience boundlessness and 'boundaryless' events, from the banal to the profound," that Freedman calls *portentous*. "Bad trips" or "freak-outs" that occur under the influence of psychotomimetic drugs are transient acute panic reactions usually associated with fear of loss of control or fear of "losing one's mind" in the absence of outside support and reality orientation. These reactions can best be understood in terms of the subject's psychological response to the experience of the drug effect within the context of his anticipatory attitudes toward it and its consequences, and in relation to his conscious and unconscious interpretive distortions of the drug effect as perceived by him in terms of the significant experiences of his past life and as reflected in his immediate relationships with others [3]. Sometimes this state of anticipatory hypervigilance may result in the emergence of paranoid ideas which are commonly associated with the subject's apprehensive expectation of retaliatory retributions for using the drug, an act considered illicit in this country and, largely, culturally deviant. This adverse effect is most commonly seen among novice users of such drugs, especially those who are ambivalently motivated in using it. Confused motives and unstable non-supportive environments are likely to precipitate such reactions [55]. In the state of hypervigilance, impaired control of critical and discriminatory functions, dissolution of the "body ego" organization, impaired autonomy and labile affect of the psychedelic experience, there is a tenuous contact with reality which may easily lead to acute psychotic episodes characterized by misinterpretations, ideas of reference, delusions, or catatonic-like postures and to impulsive, aggressive, or self-destructive behavior and marked disorganization of personality [55].

The significant role that the set and setting play in the occurrence of these reactions is exemplified by Weil's [186] observation that their frequency varies greatly in different communities. They may be extremely rare in communities where the use of an illicit drug (marijuana) is well accepted as a "recreational intoxicant," or, on the other hand, very common in places where use of the drug represents a greater degree of social deviance.

Several authors have placed major emphasis on the role that the group plays in influencing the drug effect. Marijuana, LSD, and other hallucinogens have been described as exerting a "sociogenic" or "cultogenic" effect [29,69,188]. Drug taking is a communal affair. Goode [69] asserts that "being 'turned on' for the first time is a group experience" and that "marijuana use, even in its very inception, is *simultaneously participation in a specific social group*." He further states that "Marijuana is not merely smoked in groups, but is also smoked in *intimate* groups. The others with whom one is smoking are overwhelmingly *significant* others." The continuous use of the drug serves as "a catalyst in generating and reaffirming commitment to a drug using subculture," and is richly invested with the elements of "a tribal ritual," including its symbolic reaffirmation of membership in the subcommunity of users, the strong feelings of brotherhood, belonging, and loyalty, the sharing of something of value and of special meaning, and the development of a distinct mythology.

According to Freedman [55], "For this group, magical transformation of reality, omniscient union rather than painful confrontation of separateness and effort is a lure." The so-called cultogenic and sociogenic effects of LSD and marijuana that are thought to contribute to the formation of the tribal affiliations of fringe groups and the development of the characteristic drug subculture appear to be placeboogenic in nature. In a study of chronic LSD users, Blacker and associates [27] noted that the group shared a set of mystical-magical beliefs and profound nonaggressive attitudes, which were attributed to learned consequences of frequent, intense LSD experiences in susceptible individuals. A study by McGlothlin and associates [118] on the effect of one LSD experience on the personality of normal subjects revealed some evidence of a more introspective and passive orientation in the experimental group in the postdrug period. On the other hand, the findings relating personality variables to attitude toward the response to taking LSD confirmed the commonly reported observation that persons who place emphasis on structure and control generally have no interest in the experience and tend to respond minimally if exposed. Those who respond intensely tend to prefer a more unstructured, spontaneous, inward-turning life and to be less aggressive, less competitive, and less conforming.

PLACEBOS AND PLACEBO EFFECTS OF DRUGS

The term *placebo* generally refers to an inert or pharmacologically inactive substance that is intended to be used as a potent drug without the awareness of the person who is using it. In its broader meaning, placebo is any drug that lacks the pharmacological effects ascribed to it by its user. Others have defined placebo as a pharmacologically inert agent which produces effects normally associated with the administration of an active compound. Fisher and Dlin [48] define the placebo as "the agent employed with or without some ritual, but always with the suggestion or implication of its power or helpful properties." This reaction can be positive and beneficial, or it can be negative and detrimental. According to Pichot and Perse [132], "The placebo effect can be defined as a group of somatic and psychological modifications produced by the administration of a substance without pharmacodynamic action to a subject who has accepted it as having a therapeutic effect." Wolf and Hagans [200] believe that the placebo must be recognized as "a symbol of the availability of doctors to help." Generally, it appears that whatever one's definition of placebo, the doctor-patient relationship is essential to its use. However, these definitions need to be further extended to include not only the contingency of the doctor-patient relationship but any interpersonal relationship, the subject's previous experience, his personality structure, and the various environmental and internal conditions and contingencies associated with the pill-giving ritual.

The placebo is usually administered in a form mimicking that of an active drug (negative, or form-simulating, placebo), and in some instances it is further disguised by adding another drug which mimics the side effects of the compound under study (positive, or action-simulating, placebo). A combination of the two is referred to as *action-form-simulating placebo*. Although placebos have been used as therapeutic agents for many centuries [165], their use as an instrument of drug research began early in this century [147] and attracted renewed interest in the 1940s after the publications of Pepper [131] and Gold [64]. With the introduction of the various psychoactive drugs (neuroleptics, antidepressants, and minor tranquilizers) in the 1960s, placebos have been used extensively in double-blind studies to assess the therapeutic effectiveness of these drugs. Furthermore, recognition of the problem that placebo effects made generally difficult the evaluation of efficacy in drug research, through their contaminating effect on the pharmacodynamic action of potent drugs, led to the widespread use of the double-blind technique in medicine and gave impetus to studies attempting to detect subjects who reacted strongly to a placebo (placebo reactors). Beginning with the studies of Beecher and his associates [13] on the psychosocial characteristics of placebo reactors, and

the controversies raised by Wolf [198,199], there has been a systematic investigation of a large number of variables, identified as placebogenic factors, or nonspecific drug factors.

One may subscribe to the view advocated by Honigfeld [81,82] that there are multiple determinants of the placebo response. These determinants include: (1) *demographic variables*, such as sex, age, social class, education; (2) *expectational factors*, such as treatment expectations, previous drug treatment, and treatment set, as determined by the complexity of the doctor-patient relationship, the attitudes and expectations of both the therapist and the patient, and the day-to-day variations in the patient's psychosomatic state; (3) *personality factors*, such as level of anxiety, compliance, acquiescence, level of hostility, verbal intelligence, self-striving toward mental health, ego strength, emotional lability, neuroticism, extraversion-introversion, and other; (4) *illness-related variables*, such as somatic versus emotional symptom focus, degree of initial psychopathology, duration of illness, nature of psychopathology (anxiety versus depression, primary versus secondary schizophrenic symptoms, for example); (5) *setting* in which the drug is prescribed or administered, such as ward, hospital clinic, private office; and (6) *placebo variables*, such as size, shape, color, form.

According to Lehmann [108] "the effects of a placebo while being unspecific are not unstructured . . . They have meaning and their meaning is dependent on the influence of impulses coming from the cerebral cortex." It is evident that whatever is considered to be a placebo effect must be exposed to careful experimental scrutiny. Determinants of variability in drug response cannot be attributed to the action of placebogenic factors without systematically excluding their relationship to heredity, race, age, presence or absence of disease, presence of other drugs, constitution, temperament, base-line level of activity, and environmental factors such as ambient temperature and other [87]. Honigfeld [83] further points out that one should be able to assess the outcome of placebo treatment itself versus the spontaneous course of the disorder, such as spontaneous remission. This emphasizes the need to combine both a placebo control group and a no-treatment control group with identical treatment except for the presence or absence of the pill-giving ritual. Honigfeld [83] also asserts that, because of the lack of no-treatment control groups in placebo research, there is little well-documented evidence for the true incidence of this phenomenon. The use of no-treatment controls is particularly important in the case of the depressive disorders, since a good number of these conditions have a tendency toward either spontaneous remission or a cyclic course. He further indicates that

"it is now rather clearly established that in most depressive disorders therapeutic response to placebo treatment follows a roughly normal distribution.

However, in the case of retarded depressions the therapeutic response distribution to placebo tends to be bimodal. This implies that within the retarded depressive category there are really two subclassifications, one group of patients exhibiting no change under placebo treatment and another group of patients exhibiting good response during placebo treatment. This latter group is itself probably composed of two subgroups: those in whom we observe simply the spontaneous course of disorder and another group who are exhibiting a true placebo response, in the sense of responding positively to the pill-giving ritual" [83:99-100].

THE RANGE OF PLACEBO EFFECTS

Placebos are powerful agents that can mimic the therapeutic as well as the adverse (side) effects of a variety of potent drugs. It has been observed that there has been no study utilizing placebos in which some degree of placebo reactivity was not reported. The detailed correspondence between effects of placebo and active compounds is indeed impressive. An interesting review of both therapeutic and adverse effects reported in the course of placebo administration was presented by Trouton [180]. More recently, the multifold effects of placebos were reviewed by Honigfeld [81,82] and Lehmann [106]. Lasagna et al. [103] have reported data to indicate that subjective response to placebos can mimic drug-producing peak of activity, cumulative effects, and carry over effects. Of particular interest in this study are the long-term, or carry-over, effects of placebo. Lasagna and co-workers offered an interpretation of the long-term effects of placebo in terms of simple learning theory, with abrupt withdrawal of a cue, followed not by immediate cessation of a response but by gradual and irregular decline.

Therapeutic Placebo Effects

In the literature, placebos have been claimed to influence favorably numerous symptoms, syndromes, and diseases. Examples in which placebos have been found to show significant effectiveness include the following: the treatment of headaches (effective in 52 percent of cases) [90]; in the control of coughing (as effective as codeine) [78]; in treating hay fever, common cold, nausea, vomiting, and seasickness; for controlling blood sugar levels of diabetics (62 percent of patients) [93]; in the treatment of adrenalin-resistant asthmatics [184]; in the treatment of peptic ulcer patients (92 percent of patients improved) [2]; in intermittent claudication (better results compared to those of tolazoline, a vasodilator) [74]; in the control of postoperative pain [12,18]; in the treatment of rheumatoid arthritis and other rheumatic conditions [179]; in their use as muscle relaxants (placebo is equal or superior to mephenesin) [75,197]; and in the

treatment of various psychiatric conditions, including anxiety [25,41,44,91,139,143,145,146,148,182], depression [20,44,83,168,181], and schizophrenia [21,32,43,67,192]. Beecher [10] found that placebos have an average effectiveness of 35.2 ± 2.2 percent. According to him, the degree of constancy of this average placebo improvement, from one response to another, suggests that "a fundamental, even if poorly understood phenomenon is present, one that merits study" [17:29]. He further points out that "the fact that average data may be relatively constant does not rule out the possibility that certain variables may cause systematic variations." Thus, Beecher [11,12,14] found that one of the factors that causes variation in placebo effectiveness is the degree of stress (pain). His evidence indicates that the effectiveness of placebo is higher when stress is greater than when it is less. Thus, working with patients who suffered severe postoperative pain, Beecher [17] compared placebo and morphine, administered alternatively at different intervals following surgery. In calculating the percentage of effectiveness of each of the two agents, he found that the placebo is at its highest level of effectiveness when the pain is greatest. Beecher observed that at the first dose, morphine relieved 52 percent of all patients, placebo 40 percent; the placebo's effectiveness amounted to 77 percent of morphine when the pain was most severe. At the fourth period, when the pain was much less, the placebo's effectiveness was only 29 percent as much as morphine's. Further, Beecher estimated that morphine in dose of 15 mg per 70 kg body weight relieves only 75 percent of a given population with severe postoperative pain, and concluded: "Thus half of this morphine effect can, on the average, be attributed to its placebo effect" [17]. Commenting on the general reluctance to accept pain relieved by a placebo as "real," and the temptation to consider relief from a placebo as proof of the "imaginary" nature of the complaint, Beecher notes, "That the incidence of placebo relief may bear a relation to the psychological components of the illness seems reasonable. On the other hand, relief by an analgesic need not prove the non-psychologic nature of the pain. One portion of the pain experience, sometimes described as 'reaction to pain,' is that elaboration, including anxiety and fear, is provided at the cortical level. It is not possible at present to say how much of the analgesic action of various drugs is due to an effect at this level" [17:37].

Adverse Placebo Effect

Placebo-induced adverse effects (side effects or placebo toxicity) encompass a wide variety of symptoms. There are several reviews of these effects. [13,71,95,133,201]. In an extensive review Pogge [133] found that

symptoms associated with depression of the central nervous system (drowsiness, weakness, motor retardation, fatigue, heaviness of limbs) were reported most frequently as adverse effects of placebos. Next, in sequential order, followed headache, central nervous stimulation manifested in nervousness and insomnia, nausea, constipation, and, less frequently, vertigo, dry mouth, gastrointestinal symptoms and anorexia. Honigfeld [83] points out that "From a methodological point of view it is necessary to evaluate these findings against the base rate of such symptoms in the untreated population." He concludes that "clinical effects and side effects of placebo medication do occur, but that their parameters are at this point very poorly understood." Pichot and Perse [132] view the concept of the "nocebo effect" as expressing the subject's attitude of refusal and negation (as in response set), which can exert a negative action on the pharmacological action of a drug. They argue that "if a nocebo effect obtains in a particular subject, then in a sense the two actions are opposed, nullifying the pharmacodynamic effect. An analogous conflict is evidenced when one administers a potent drug while evoking in the subject an attitude of expecting an opposite effect." The question has been raised whether one could identify placebo-prone and placebo-resistant functions. In a study by Lehmann and Knight [107] it was found that placebo-prone functions include autonomic reactions and psychological functions which require considerable integration, while placebo-resistant functions include fundamental psychological processes which require only a minimum of integration. They also reported that the accuracy of performance is relatively placebo-resistant, while the speed of performance is relatively placebo-prone.

MECHANISMS OF PLACEBO EFFECTS

It is recognized in the literature that placebo reaction is generally accepted as a manifestation of suggestion which introduces certain affectively invested expectations. The importance of expectation as a function of suggestion in placebo reactivity is dramatically emphasized by Wolf and Hagan's [200] in the case of their patient Tom who, suffering from a gastric fistula, had learned to despise the administration of prostigmine because it caused intense engorgement of his gastric mucosa with a marked increase in acid production. Prostigmine also caused intestinal cramps, frequently followed by diarrhea. Soon Wolf noticed that no matter what he administered, he could get the typical prostigmine-like effects including engorgement of the gastric mucosa, increased acid production, and diarrhea — to the mere statement that he was given prostigmine. This case emphasizes the importance of considering the placebo effect from prior

experience. Therefore, studies on suggestibility and its parameters are highly relevant to the understanding of the placebogenic mechanisms [166]. Although for a time it was felt that clinical improvement under placebo administration depends in some important way upon suggestibility, Gliedman and associates [63] failed to support this assumption in studies using the postural sway test of suggestibility. The relationship between suggestibility and the placebo response was reexamined by Steinbrook et al. [174] by employing the press test instead of the sway test. They found that suggestibility scores were positively correlated with the decline in number and severity of psychopathological symptoms in the first two weeks. This correlation became much less significant toward the end of the therapy. They concluded that suggestibility must be operative in the placebo effect. Beecher points out that placebos "offer a fine opportunity for putting one aspect of the elusive problem of suggestibility, as influenced by chemical agents, on a quantitative basis, and in this way allow us to move toward our goal of a quantitative psychopharmacology" [17:27].

Nevertheless, research has not been successful in demonstrating reliable relationships between suggestibility and placebo response. According to Honigfeld [83], a more promising area deals with the concept of persuasibility. "Persuasibility involves not only the characteristics of the person being persuaded, but the entire sociopsychological framework in which the act of persuasion takes place, including the characteristics and credibility of the source. This conceptualization, which takes account of the doctor-patient interaction, appears to have the greatest potential for explaining the apparently inconsistent fluctuations of placebo responses in the same individual over time" [83:98]. Studies on bias and its relation to placebo effect could further elucidate the underlying mechanisms. Although bias on the part of the physician or the patient, in connection with a given procedure, is a complex factor with many components, it appears that placebo effect is one of its powerful outcomes that can be separated and examined [17]. The relevance of hypnotic phenomena to the understanding of placebo effect is evident. All these situations involve processes associated with suggestion [71], expectational attitudes, compliance [94] or conformity, receptivity and acceptance, [19] and persuasibility [83].

Placebo reactivity considered from the point of view of learning theory has been studied by the use of both operant and Pavlovian procedures. Such studies attempt to understand the conditions under which stimuli associated with drug administration become conditioned to drug-induced changes in behavior, such that the subsequent presentation of the conditioned stimuli associated with placebo administration will reinstate the behavioral change. The evidence from these studies suggests that certain phenomena associated with placebo reactivity in humans are conditioned drug effects and therefore could be understood and investigated from the standpoint of learning theory.

From the point of view of the operant conditioning paradigm, suggestion may be considered as a complex discriminative stimulus (effect expectation) which is defined as the behavioral and physiological changes expected or anticipated by the subject to occur as the result of the administration of a drug and in general as a result of any procedure aiming at producing such changes. Effect expectations can be further distinguished into (1) reward expectation, including relief expectation (relief from distress), and euphoria expectation (euphorizing effect of a drug); (2) dysphoria expectation (induction of headache or nausea); (3) stimulation-sedation expectation; and (4) effect expectation without significant effect. It appears that the necessary requirement for inducing placebo phenomena is for the patient to have had experience which, following the suggestions of an authority, had been reinforced by beneficial consequences. This kind of history is acquired according to an extension of the principles of operant behavior in human subjects and is necessary for placebo effect. This, too, emphasizes the importance of considering the placebo effect from prior experience. Therefore, the basic principle of this approach is that the characteristics of an organism's behavior are to a considerable extent determined by what the environmental consequences of that behavior have been in the past.

In this connection Gliedman et al. [62] demonstrated (1) how a person's affect can be conditioned, making it possible for him to realize his expectations from a therapeutic situation, and (2) the importance of "preexcitatory states" for conditioning which suggest that the ability of doctors to produce such states is related to the type of response subsequently observed. Feldman [46] showed the positive nature of this relationship in a study comparing the doctor's attitude toward a drug being administered and the patient's response.

In addition to operant conditioning considered to be necessary for the development of placebo effects, Pavlovian or classical conditioning also occurs with specific compounds. Pavlov [130] introduced the notion of "social reflexes" and Gliedman et al. [62] extended this concept to the total group of placebo effects. Though there is uncertainty about this view, it appears that its adoption should have posed the problem of the role of expectation and attitude in conditioning and learning [132]. The Pavlovian process is presumably involved when the patient has experienced relief from drugs administered by a physician on numerous occasions. In the subsequent administration of a placebo, the physician and his procedure function as a complex stimulus in the Pavlovian paradigm. There seems to be a logarithmic relationship between the intensity of a conditioned stimulus and the elicited conditioned response [178], a fact which may also be connected with the placebo phenomenon if the doctor is looked upon as a complex signal for a conditioned response. Since the conditioned response varies logarithmically with the strength of the stimulus, the greater

the stimulus (distress) the greater the response. The placebo acquires properties as a signal in addition to its physical characteristics and the same signal may produce, at different times (according to the inner state of inhibition), a positive reaction, a negative one, or no reaction.

While it is not within the scope of this review to discuss conditioned drug effects in animals, a number of these studies are germane to human experiments. Herrnstein [77] found injection of normal saline to mimic the effect of scopolamine on rate of response for food reward when the saline injections were alternated with scopolamine injections. Using Pavlovian conditioning procedures, Gantt and his colleagues [62] obtained placebo effects in dogs conditioned in the presence of human experimenters. In both studies, the Pavlovian conditioning model was used to explain the occurrence of placebo-like phenomena in animals. Conditioned drug effects have been obtained from unconditioned behaviors. Ross and Schnitzer [150] observed changes in general activity level when saline injections followed the administration of *d*-amphetamine. It has been suggested that conditioned drug effects are specific for certain compounds or classes of compounds. Gantt [58] presents negative evidence for conditioned heart rate responses using acetylcholine and reports studies in which there was failure to obtain salivary conditioning with such compounds as pilocarpine and atropine. In a theoretical interpretation of his results, Gantt proposes that only "effects which have a central (usually cortical) representation through afferent fibers (even though interoceptive) as well as efferent control can be conditioned." Gantt's statement points up drug specificity as a factor in the presence or absence of conditioned effects. In a Pavlovian conditioning situation with dogs, Cook and Kelleher [33] demonstrated that three compounds, L-epinephrine, L-norepinephrine, and acetylcholine could become effective conditioned stimuli. Gantt [57] also showed that the strength of conditioning increases with intensity of the unconditioned stimulus. Several investigators have shown that behavior acquired in the presence of a drug effect is weakened under subsequent testing when the drug is absent [19, 26]. An interpretation of these results is that drugs generate unique internal stimuli which may be conditioned to the ongoing behavior. The stimulus change results indicate that drugs function as conditioned as well as unconditioned stimuli.

A phenomenon analogous to the placebo effect is the so-called response set, which is observed in response to various psychological tests and inventories administered by psychologists. Pichot and Perse [132] have argued that the "discussion of the nature and the determinants of the placebo effect and the response set shows a remarkable parallelism." Therefore an understanding of the response set may shed some light into the nature of the placebo effect. (Cronbach [37] defined the concept of response set as a tendency to respond in a biased fashion among seem-

ingly equal categories. As is the case with placebo effect, response set has been of interest in regard to its effect on invalidating personality questionnaire results. The concept of *acquiescence* is closely related to that of response set. The attitude of acquiescence leads the subject to respond affirmatively or negatively and quite independently of stimulus context. Factors constituting acquiescence have been discussed by several authors [9,35,38]. Damarin and Messick [38] examined the concepts and the evidence concerning the psychological significance of response set and the possibility of relations between these attitudes and other personality characteristics independently measured. They concluded that, if response set in questionnaire responses is a function of basic personality characteristics, these same characteristics would tend to affect biases in other situations. The placebo response appears to represent such a situation. Pichot and Perse [132] argue that "the placebo effect exists only when the subject expects that what has been given to him produces an effect; in other words, when he adopts a particular attitude." They conclude that "the placebo effect represents, thus, a positive response to the situation and an acceptance of the therapeutic value of treatment, an acquiescence of the stimulus." In drug studies involving placebos, one of the most controversial points is the postulated general reactivity to placebo; that is, the existence of a placebo reaction tendency independent of the particular circumstances, resulting in a definition of a group of subjects who respond in a consistent manner to placebos, referred to as *placebo reactors*. In viewing placebo effects within the concept of response set, Pichot and Perse [132] have concluded that there exists a general responsiveness to placebo, independent of the particular situation and consequently relatively stable. Pichot and Perse [132] and McNair [122], focusing on the personality dimension of acquiescence, demonstrated in normal as well as neurotic anxious subjects that high acquiescent patients improved more on placebo than low acquiescent patients, while drug treatment outcome was much less affected by this personality variable. Fisher and Fisher [50] demonstrated that "acquiescent" college students manifested more of the experimentally suggested effects of a placebo than did "nonacquiescers." Acquiescers and nonacquiescers were identified by the Bass Scale [8] which purports to measure a tendency to agree uncritically with authoritatively stated generalizations. McNair et al. [120] suggest that acquiescers are likely to be rather thoughtless and nondiscriminating individuals rather than compliant conformers. Another possibility they suggested is that acquiescers respond with exaggerated, diffuse, and, hence, nondiscriminating concern to whatever somatic cues are produced by the drug.

The psychodynamic approach to understanding the nature of the placebo effect provides an opportunity to analyze this complex phenomenon from the viewpoint of the motivational dynamics of drug-taking be-

havior within the transactional context of the doctor-patient relationship. It is most clinically relevant to study the nonspecific factors that influence drug outcome in terms of (1) the conscious and unconscious "meanings" associated with the various aspects of drug therapy, on the part of both patient and physician; (2) the role of transference and countertransference phenomena as they affect the behavior of patient and physician, respectively, in drug therapy; (3) the personality structure of both patient and physician; and (4) the interpersonal dynamics and sociocultural factors that influence the behavior of the participants of this transaction. This approach will be discussed more extensively in the section dealing with the psychodynamic aspects of various placeboogenic factors.

PLACEBOGENIC FACTORS IN DRUG THERAPY

Drug-related Variables

In addition to their pharmacodynamic properties, medications have physical characteristics such as size, shape, color, taste, and route of administration, all of which may be viewed as being potential contaminating factors in the effect of a given drug. The placeboogenic contribution of these variables would appear to depend on the particular way a patient interprets the meaning of such stimuli. Thus drugs or placebos carry complex messages and are invested with personal meanings associated with their physical properties and the way they are administered. Psychodynamically, these variables may have real symbolic significance to the patient. For example, it has been speculated that, for some patients, the symbolic value of the pill has an orally incorporated anxiety-relieving solution. For others, injected drugs may be equated with oral introjection of the therapist, which in turn may cause difficulties in transference. Although such interpretations may have some relevance in a given patient during psychotherapy it would be hazardous, to say the least, to attempt to generalize such specific psychodynamic interpretations. Nevertheless, it is probable that the physical characteristics of the medicine, as well as the route and schedule of its administration, may have, for certain patients, a personal meaning which may contribute significantly to the way the effect of the drug is experienced and interpreted.

The placebo effect of these variables has been studied by the use of placebos. In spite of numerous studies, the experimental evidence supporting the notion that physical characteristics of the placebo play a role in its effects is scanty [81]. Lasagna [102] listed a number of placebo characteristics that are presumed to add a placeboogenic element of mysticism: The use of vile tasting and highly colored preparations is impressive; col-

orless capsules are thought to be inferior to colored pills, and tasteless placebos are generally felt to be inferior to bitter or highly flavored ones; an overly large pill impresses by its size, while a very small one impresses by its "potency"; injection is usually felt to be more effective than oral administration. Schindel [169] found color an important factor in placebo effect; on the other hand, Glaser and Whitlow [61] reported no difference in the incidence of side effects with sweet white placebos compared with bitter red placebos. Inconsistent results have also been reported with regard to route, schedule of administration, and dosage. Thus, Morison et al. [126] found in arthritic patients claims of greater improvement with parenteral administration of placebos than with oral administration. Pogge and Coats [134] reported more side effects when frequency of placebo was increased stepwise from two to ten pills daily. This observation was not corroborated by other investigators [68,153]. Gruber [73] revealed that a double dose of placebo was nearly twice as effective as a single dose in producing a sedative effect, whereas Foley [53] suggested that placebo effects are independent of doses. Rickels [138] reported a higher attrition rate in a group of patients treated for six weeks with the same placebo, as compared with a group of patients who were given a different-looking placebo every two weeks. It is reasonable to assume that, although these variables are potentially placeboogenic, it remains unclear how they influence change in one direction or another in any given study [83].

Setting-related Variables

There is considerable research evidence that points up the significance of the physical and social environment (setting) in which drug administration occurs as a determinant of placebo effects. Several studies of drug effects in both animals and humans suggest that the social set and other environmental parameters may mediate placeboogenic effects. Thus studies on mice have shown that crowding may enhance drug toxicity (amphetamine) while grouping animals given hypnotic doses of phenobarbital may exert a stimulating effect on spontaneous activity [28].

During the past twenty years, considerable attention has been focused on the interaction between psychiatric drug therapy and treatment milieu [43,49,111,112]. It appears that the effectiveness of psychotropic drug therapy in hospitalized patients is influenced by a number of variables related to the treatment milieu, including hospital organization, structure of ward situation, crowding, patient-staff ratio, degree of social interaction among patients and between patients and staff, open- or closed-ward policy, staff authoritarianism or permissiveness toward patients, physicians' attitude toward drugs, staff enthusiasm, availability of

individual psychotherapy, adequacy of concurrent rehabilitation programs and the patterns of interpersonal relations on the treatment wards, and a host of other variables [86,109,135,138,152]. In spite of the limited amount of research in this area, there is enough evidence to conclude that aspects of the treatment milieu, and especially variables of social interaction, are potent factors in mediating the effects obtained with both active drugs and placebos [83].

Sabshin and Eisen [151] found that "ward tension" influences negatively the effectiveness of chemotherapy. Meszaros [124] reported improvement in nonexperimental subjects who lived on wards in which some patients were experimentally receiving psychoactive drugs. This indirect effect was attributed to the improvement of the behavior of the experimental patients, which secondarily reduced staff tensions, thus producing benefits for the nondrug patients. This is consistent with the observation of Stanton and Schwartz [172], who found that the occurrence of staff disagreement increased the incidence of disturbed patient behavior on the ward. Thus, it appears that psychotropic drugs affect the social milieu in which the patient is treated and can produce changes which may be either beneficial or adverse. It is apparent that drugs not only relieve the anxiety of patients, but also the anxieties of personnel within hospital wards. The improvement of the hospital milieu which has been observed since the introduction of neuroleptics has been attributed by many investigators to the effect of these drugs. On the other hand, there are skeptics who tend to minimize the significance of drugs being instrumental in the development of these changes. Furthermore, others have even regarded drugs as having harmful effects upon the psychiatrist and the hospital staff, limiting their psychotherapeutic skill by increasing their latent tendencies to seek ready solutions to complex problems.

A well-documented placebogenic effect is the reported improvement of chronic regressed schizophrenic patients as a result of their exposure to nontherapeutic social interaction associated with the conduct of drug research studies. The therapeutic contribution of this research effect is analogous to the so-called Hawthorne Effect observed in assembly-line workers whose productivity has been reported to increase under any experimental condition regardless of whether or not one would anticipate beneficial effects. Thus, Rashkis and Smarr [135], in a study of forty-eight catatonic patients, attributed the observed symptomatic improvement, which occurred over a period of six months before experimental drugs were introduced, to nondrug experimental procedures such as frequent interviews for the purpose of completing baseline rating scales. Similar results were obtained by Honigfeld et al. [84] in a group of long-term chronic schizophrenic patients who received special attention in group meetings led by an interested volunteer group leader. Other important

findings in this respect are those reported by Donnelly and Zeller [43] and Sabshin and Ramod [152], who showed that more dramatic therapeutic results with neuroleptics were seen in back wards of large mental hospitals than small psychodynamically oriented settings.

Another significant observation is that the effectiveness of both drugs and placebos in experimental situations is inferior to that of a clinical setting. For example, Beecher [17] found marked differences in pain relief produced by active drugs as well as placebos under clinical versus experimental conditions. He reported that the mean percentage effectiveness of placebo in relieving pathological (postoperative) pain is ten times that found with experimental pain. He attributed this difference to the assumption that pain of pathological origin produces more anxiety or stress than does experimentally contrived pain [17], and that "the psychological significance to the subject determines, apparently, the degree of pain experienced." Beecher has also produced evidence indicating that the placebo effectiveness is proportional to the degree of stress, and, in general, the stronger the unfavorable psychological state the more effective the drugs. Rickels [138] reports that two different experimental sets lead to differential drop-out rates, as well as improvement patterns. In a collaborative study conducted in three different clinic settings using identical protocols, Rickels and his group [51, 183] compared therapeutic to experimental role (or appropriate to inappropriate set) on the part of the doctor, with regard to their influence on the effectiveness of placebo and active drugs (meprobamate). They found that in one of the three clinics meprobamate produced most improvement in the therapeutic role and the placebo in the experimental role, a finding that confirmed their original hypothesis that these two sets would affect drug and placebo response differentially (produce interactive effects). However, the major finding of this study was the discovery that not only was a significant interaction between drugs and psychiatrist role observed but also that a triple interaction, involving drugs, doctor roles, and the treatment setting of the three participating clinics, occurred. It was concluded that differences in the treatment orientation and in the demographic background of the participating physicians accounted for the observed interaction. Similarly, Fisher and associates [52] suggested that, in outpatient situations, the therapeutic orientation is more beneficial for treatment than an experimental orientation.

Among the various situational placebo-genic factors, it appears that the attitude of the staff toward drug therapy may be one of the most significant. Such attitudes may range from uninhibited and uncritical enthusiasm to the other extreme of negativism because of prejudice. It has been shown [138] that faith in the treatment efficacy and a positive enthusiastic attitude toward medication gives a better drug and placebo response.

Wheatley and his group [190], working with anxious and depressed private practice patients, found that both doctors' and patients' attitudes affect drug response. In this study they classified both doctors and patients as optimistic, indifferent, and pessimistic. For anxious patients the drug response was most favorable with the optimistic doctors, less favorable with the indifferent doctors, and least favorable with the pessimistic doctors. The differential response in relation to patients' attitudes was similar, although the differences were not marked. However, with regard to depressed patients, the factor optimism-pessimism was found to be of little importance. The observation that the patient's expectation about the doctor's attitude toward the medication prescribed has a significant effect upon treatment course [51] emphasizes the need for the doctor to maintain a positive attitude toward the recommended drug treatment. In psychiatric treatment settings, these attitudes are partly formed and developed through the influence of the prevailing hospital policy and philosophy.

The significance of social interaction as a placebogenic variable was nicely demonstrated by Starkweather [173], who reported that the effect of drugs (stimulants and depressants) on psychomotor behavior was much affected by two-person interaction. Specifically, he found that on individual pretesting, both stimulants and depressants showed their expected pharmacological effect. However, when subjects were retested after a brief interpersonal contact with a partner who had also received a stimulant or depressant, the data revealed that postinteraction scores were a function of the partner's drug; if the partner received a depressant, scores were impaired. Similarly, Nowlis and Nowlis [128] reported the occurrence of a "wash-out effect" when drugs with antagonistic actions were given to members of four-person groups.

A dramatic demonstration of the role of situational determinants in drug response is seen in LSD experiences, in which the structuring of the environment is known to exert a decisive effect on the quality of the experience. A protective social setting and nurturing attitudes on the part of the experimenter appear to result in reduction of paranoid and perceptual changes. As Freedman [55] points out, in LSD experience there is an enhanced dependence upon the environment for structure and support as well as enhanced vulnerability to the surrounding milieu. Unstable surroundings or confused motives may lead to "bad trips."

In view of these considerations, it is reasonable to assume that once a drug has been administered, a chain effect with multiple feedback interactions is set up between the person to whom it has been administered and the persons with whom he interacts. As a result of these processes, changes in the patient's behavior will find reflection in the behavior of those with whom he interacts and vice versa. Thus, it becomes increasingly difficult to distinguish the specific drug effects from those resulting from altered social relations and modes of communication. A number of

investigators [49,97,138] have suggested that the two variables, setting and drug, are not simply additive in their combined effect but rather interactive; a particularly appropriate treatment situation may potentiate a given drug response and, conversely, a very inappropriate or unfavorable one may indeed inhibit pharmacodynamic drug action. On the basis of available evidence, Kerman [97] elaborated on four theoretical models — first suggested by Fisher [49] — for conceptualizing the possible drug-social milieu interactions.

In the first model, drug effects are considered independent of the milieu and, therefore, the effectiveness of drug therapy is equivalent in all milieus. Drug therapy has a meaningfully beneficial action on the social environment rather than the milieu influencing the drug effects. In a second model, it is postulated that drug effects are augmented by the milieu and consequently drugs will be increasingly effective in direct proportion to the quality of the milieu. This model represents the point of view underlying most hospital treatment programs. The third model, in contradistinction, advocates that drug effects and milieu factors bear a reciprocal relationship and, therefore, drugs add little to milieu therapy. Here therapeutic milieu is of as much value as drug therapy itself, and consequently, the combination of drug therapy in a maximally effective milieu produces no significant increment. It embodies the view held by many social psychiatrists that, while drug therapy may be effective, a more intensive therapeutic milieu is capable of as much value as drug therapy. In the fourth model, negative interactions are postulated between drugs and the environment. This model depicts the situation in which drugs may be effective in one environment but detrimental in others; for instance, in a better milieu drug therapy is predicted to be less effective than in a less optimal environment. In wards where the environment provides few therapeutic resources, as in back wards of custodial institutions, the effectiveness of drug therapy is found to be great, as shown by differences between a drug-treated group and a control group. In a "rich" ward environment, with ideal staffing and intensive milieu therapy, however, drug therapy would be predicted to be less effective compared to a no-drug control group.

Klerman [97] explains the mechanism of this paradoxical response on the assumption that patients receiving drug therapy are less able to make use of interpersonal therapies, because of their reinforcement of denial and of the patient's magical thinking. Furthermore, he assumed that drugs may be detrimental through their effects upon staff attitudes and morale, rendering the staff indifferent to patient needs and fostering their reliance upon medication rather than their interpersonal abilities to deal with patient needs. Similarly, it has been claimed that for patients in psychotherapy, the mere giving of a pill, even if it is a placebo, hinders the psychotherapeutic progress of the patient. Pill taking alone interferes with the

patient's motivation, increases his magical wishes, and increases dependency. Klerman [97] did not feel he had sufficient evidence to allow a choice among the models presented. In a subsequent study [65] it was shown that, in the treatment of schizophrenic patients, symptoms closely related to Bleuler's [24] fundamental or primary symptoms of schizophrenia (loose associations, slow speech and movement, poor self-care, indifference to the environment, withdrawal, and hebephrenic symptoms) are not responsive to placebos but to drugs (neuroleptics), in contradistinction to the placebo-prone symptoms, such as hallucinations and feelings of unreality, which are closely related to Bleuler's accessory or secondary symptoms. On the basis of these findings, they suggested that the frequently held view that neuroleptics exert their therapeutic effect by suppressing the accessory symptoms of schizophrenia without having effect on the fundamental disease process needs to be reevaluated. Honigfeld [83] and Bente [20], studying primarily hospitalized depressed patients, and Cole and associates [32], studying schizophrenic patients, all came to the same conclusion, namely, that nonspecific factors are much less important in the seriously ill patient, be he schizophrenic or psychotically depressed, than in the neurotic patient.

Physician-related Variables

The physician is a central figure in the transaction involving drug therapy. His attitude toward drugs (enthusiastic-optimistic versus negativistic-pessimistic), his attitude toward the patient (countertransference), his own personality structure, and generally the quality of the doctor-patient relationship and a number of other variables associated with the therapist's conscious and unconscious expectations, prejudices, and biases, may significantly modify response to drugs. For a more systematic analysis, these factors are classified into (1) physician's attitude toward drug therapy; (2) physician's attitudes toward the patient (countertransference); and (3) physician's personality. The following discussion is limited to psychiatrists.

PHYSICIAN'S ATTITUDE TOWARD DRUG THERAPY

Psychiatrists show wide differences in their attitudes toward drug therapy. These differences are maximized in the existing polarity between psychoanalysts and psychoanalytically oriented psychiatrists, on the one hand, and those with an organic or biological orientation, on the other. This polarity has been less marked in recent years, as a result of an upsurge of interest in the "medical model." The recent advances in psychopharmacology, and the socioeconomic factors associated with patterns of

third-party payers and the forthcoming national health insurance, have given considerable impetus to this change. It appears, therefore, that differences in attitude toward drugs are not necessarily based on some rational reason or objective evidence but may be largely determined by very personal, and sometimes irrational, factors related to the socioeconomic and cultural background of the physician, his personality structure and underlying conflicts, his prejudices, unconscious motivation and mundane self-interests, and social change. It appears, therefore, that the decision whether to prescribe drugs for a given patient may not always be dictated by the needs of the patient but by the personal needs of the therapist.

Identification with either the psychodynamic or the organic model of psychiatry has been shown by Hollingshead and Redlich [79] to be a social-class phenomenon. In general, the psychiatrist who identifies with the analytic-psychotherapeutic image tends to reject patients of lower-class background and is likely to refer them to a clinic for drug therapy. This rejection could be partly attributed to the sociocultural distance that exists between therapist and patient, in terms of modes of communicative expression, interpersonal attitudes, and value systems. Other possible reasons for such a therapist's rejection of these patients may be found in the therapist's need to adhere to his own privileged social class, in his identification with an exclusive professional group, or in the therapist's aversion to treat an allegedly "inferior" patient with inferior means. In addition to these sociocultural factors, the therapist's unconscious motivations may determine his attitude toward drug therapy. The therapist who disparages drugs, denies their importance when they obviously have value, and refuses to prescribe them when clearly indicated may do so for various unconscious reasons which are usually rationalized in an effort to defend the supremacy of psychotherapy. The doctor's refusal to give a drug may reflect an unconscious rebellion against authority from a narcissistic overvaluation of his own words which assume magnitudes of omnipotence and magic, from a narcissistic identification with his own analyst, who does not believe in drugs, or from unconscious guilt about giving the patient what he fears it is — a powerful, poisonous, magic substance [163]. Not prescribing drugs may be a status symbol for another therapist. This attitude appears to be more prominent among psychiatrists rejected from psychoanalytic training, psychiatrists who feel uncomfortable with the identity of a physician's self-image, or psychiatrists who have low self-esteem or are overcompliant and crave social acceptance.

On the other hand, the physician's motivation for prescribing a drug may be similarly determined by sociocultural and personality factors and by a number of conscious and unconscious attitudes. The decision to prescribe drugs may be determined a priori by factors having to do with

the hospital setting and philosophy of treatment or with realities such as available money, time, or expediency. Among these factors one finds the need to improve or control large groups of patients, a social need for "cure," or quick relief of symptoms. In prescribing powerful drugs, another therapist may have fantasies of magic or narcissistic omnipotent control, which give him self-assurance and alleviate his anxieties about his role as a therapist. For another therapist, drugs become his omnipotent servants or symbols of his unchallenged authority. For some, drugs may become a means through which they can dominate, control, coerce, or sadistically subdue their patients. For the therapist who feels secure only when he plays the traditional medical role, pill giving may represent a tangible measure of the desired self-image and be a testimony of his identification with medicine.

All the factors that may affect the physician's attitude toward drug therapy would be expected to have an important influence on the therapeutic effect of drugs [31,60,70,97,168]. It has been demonstrated repeatedly that the drug which is invested with faith and given with enthusiasm certainly does not have the same effect as the pill which is looked upon with suspicion and given with ambivalence. This may occur when the therapist's positive or negative attitudes are communicated to the patient, affecting the patient's expectations regarding the potential effectiveness of the treatment he is receiving [80]. In general, tranquilizer therapy of the anxious (neurotic) patient has been shown to be most effective when offered in a positive, warm, appropriate, and therapeutic attitude combined with empathy as well as understanding of the patient's problems. Such therapy is least effective when given in a cold, aloof, inappropriate, scientific, experimental, or negativistic atmosphere.

PHYSICIAN'S ATTITUDES TOWARD THE PATIENT

The decision whether or not to give drugs may be determined by countertransference phenomena [39,42,160,161,163,193]. The physician's attitudes and feelings from his past relationships with significant others, especially parents, may be transferred to his patient and, consequently, affect his decision on medications; his attitudes may also influence the patient's response to the drug. As Savage [163] points out, the decision to use tranquilizing drugs may represent an acting out of the countertransference, however well-rationalized, rather than a carefully thought out, well-planned therapeutic strategy. The most common use of these drugs for countertransference problems is in the management of the doctor's own anxiety. Here the drug acts to suppress the doctor's anxiety by controlling the patient's anxiety, aggression, and so forth, and finally by controlling and damping the intensity and quality of the transference [163]. A doctor may prescribe drugs because he cannot bear to frustrate the patient

or, conversely, he may refuse to prescribe a drug when asked by a patient who begs for sedation or for relief of pain, fearing that this might be an attempt by the patient to manipulate him; being manipulated in the doctor's countertransference may mean being passive, effeminate, or controlled by others. Another therapist may give a drug as a means of distancing himself from the patient because the patient's reactions evoke in him feelings of anxiety, hostility, or frustration. Or, he may give it as an expression of his need to cure the patient at all cost or his unconscious need for omnipotent control over his patient [163]. There are instances in which a physician who does not like a patient will put him on a drug, feeling that he has given him some "treatment" and was better able to carry out his "psychotherapy." In reality, as Sarwer-Foner [161] points out, in this case the drug was used to minimize the physician's contact with the patient and clear the physician's conscience. Prescribing a drug may reflect the therapist's sense of failure and his need to do something for his patient; or it may represent an expression of the therapist's aggressive or sexually seductive attitude toward his patient.

In general, the physician may transfer to his patients sexual feelings, hostile or aggressive feelings, his need to be liked and admired, his need to control and dominate others, and other attitudes or feelings that date back to his relationships with his parents and other important figures in his life. Thus, the doctor's trust or mistrust, fears or dislikes, and positive or negative feelings toward his patients all are factors that often determine how well or poorly the patient responds to the treatment [7]. Generally, physicians show varying degrees of awareness of their countertransference toward their patients. It is clear that the more a physician can maintain awareness of his feelings and attitudes toward his patients, the less he is apt to say and do those things which interfere with his optimal capacity for helping them.

THE PHYSICIAN'S PERSONALITY

There is little research in determining the role of the physician's personality as a function contributing to drug effects. In a series of studies by Whitehorn and Betz [191] an attempt was made to evaluate the success of therapy with schizophrenic patients in relation to certain characteristics of the therapist. These authors identified two therapist types with distinct profiles on the Strong Vocational Interest Blank. Their findings suggested that "Type A" therapists, characterized by a problem-solving approach to patient behavior with an interest pattern resembling that of successful lawyers, were more effective therapists as compared to "Type B" therapists, whose personality was characterized by a coercive or regulative approach with interest profiles resembling those of printers. Reverse findings were reported by McNair et al. [119], who used identical scales for

identifying types of therapists. Honigfeld [83] speculated that patient differences in these two studies may account for the reported discrepancy. On the other hand, Betz [21] found that psychiatrists who score high in authoritarianism (California F Scale) and extroversion, and who are defined as "Type A" physicians according to the Strong Vocational Interest Blank, achieve better results with psychoactive drugs than psychiatrists who score lower on the first two measures and are defined as "Type B" physicians. Rickels and his co-workers [142], in a study involving patients in private psychiatric practice who were treated by five different psychiatrists with psychotherapy as well as with drug (meprobamate) and placebo under double-blind conditions, classified the participating therapists as Group I and Group II on the basis of several personality tests and attitudinal scales [141]. Group I psychiatrists were described as active, practical, assertive, drug-oriented, with higher authoritarianism and extroversion. Group II psychiatrists were described as introspective, psychotherapy-oriented, with low authoritarianism and extroversion. Comparing drug-placebo differences for patients of the two psychiatrist groups, the authors were able to demonstrate that patients of Group I psychiatrists improved significantly more on drugs than on placebos; the same was not true for patients of Group II psychiatrists. Closer data analysis indicated that the major contributing factor was the differential placebo response observed in the two patient populations — patients of Group I psychiatrists responded poorly and patients of Group II psychiatrists responded well to placebo. It was further found that patients treated by the Group I psychiatrists were sicker, more chronically ill, more drug pretreated, older, less educated and expressed a strong desire for drug therapy alone. According to Rickels [139], these patients represented exactly the type of patient who expected from clinical experience to do better with a combination of psychotherapy and drugs than with psychotherapy alone. In contrast, patients treated by the Group II psychiatrists were more representative of the "typical" psychotherapy patient. These patients were of lower initial psychopathology, more acutely ill, less drug pretreated, better educated, younger, and primarily expected psychotherapy, not drug therapy. Such patients have been found by Rickels [139,138] to do well on placebo. Rickels concluded, "Physicians either selected these patients differentially or had attracted over the years a different patient population. It makes clinical sense and is, therefore, *well* possible that a private psychiatrist attracts a certain type of patient for therapy, a patient who fits his own personality, attitudes, and expectations" [139:16]. Several other studies have demonstrated differential response patterns to drugs and placebos as being partly a function of the therapist's personality [21,22,51,99,120].

It is evident that medical competence involves not only the physician's scientific acumen and technical skills but also his personality. The

physician's personality is a significant interactive factor that influences treatment outcome and, as such, it may be viewed as an instrument of therapeutic intervention that needs fine calibration in order to be optimally effective. In spite of variations in personality structure among physicians, it appears that the competent practitioner maximizes his therapeutic potential by using his particular personality to suit the needs of his patients [154]. On the other hand, medical competence is likely to be impaired when the physician presents serious pathology in his personality that limits or distorts his relationships with others. Thus the physician who feels that he must constantly please his patients, in the sense that he must yield to all their wishes or give them medicine so they will continue in his care, usually lacks confidence in himself or is incapable of accepting and tolerating negative feelings from his patients. The physician who has an excessive need to be loved and is too fearful of being disliked may be too permissive in the management of his patients — to their detriment — or he may allow himself to be influenced, seduced, manipulated, or coerced, at the expense of an effective doctor-patient relationship. On the other hand, the physician who is too authoritative and needs to relate to his patients as an omnipotent parent to a helpless child tends to infantilize his patients and makes them feel dependent, powerless, and incapable of assuming responsibility for their own care. A physician with inadequately repressed hostile or aggressive feelings may fail to recognize the need to give sufficient relief from pain and, in some instances, he may even unconsciously inflict pain in the way he manages his patients. Conversely, the physician who fears his own aggressive impulses or feels guilty about his repressed hostility may act passively or fail to carry his responsibilities in the face of circumstances that require an assertive intervention or are associated with a patient's discomfort or pain. The physician whose personality lacks an adequately internalized value system tends to exploit his patients selfishly. The narcissistic physician, who likes to be admired by his patients and constantly seeks opportunities to inflate his self-worth, lacks genuine capacity to care for his patients.

Patient-related Variables

Some of the patient-related placeboogenic variables influencing placebo and drug response include: (1) demographic-sociocultural variables; (2) expectational and attitudinal variables; (3) illness-related variables; and (4) personality variables. All these factors enter into a complex interaction with the drug, the setting, and the physician-related variables in a manner that may result in potentiation or antagonistic inhibition of the drug effect or even a qualitatively different drug response.

DEMOGRAPHIC-SOCIOCULTURAL VARIABLES

There is little research in the role of sex and race as nonspecific factors influencing drug and placebo response. Sex and race differences in improvement after phenothiazine and placebo treatment were reported in schizophrenic patients by Goldberg and associates [66]. Their findings showed that, although all patients on drug treatment improved more than patients receiving placebo in both sexes, males improved on placebos markedly more than females, in contrast to the active drug treatment in which females improved slightly but significantly more than males. It was also shown that on the active drug treatment, no race differences were detected; but on placebo, Negroes were found to be more therapeutically responsive than whites. The authors interpreted these findings by suggesting that those who have higher loading on the psychological stress factor (males and Negroes) are the placebo responders, while those who have higher loading on the genetic factor (females and whites) are the active drug responders. Nevertheless, environmental influences may have accounted for these differential effects [100]. Uhlenhuth et al. [182] found better placebo response in Negro than in white patients and less favorable response to placebo occurring in married or widowed than in separated or divorced patients. Using attrition rates as a measure of drug-placebo response, Rickels [140] found that patients tended to drop out from treatment more frequently if they were females of low educational and socioeconomic level. His findings are in agreement with Winkelman's [194] observation that low sociocultural level patients not only responded more poorly to drug therapy but also deviated more from prescribed dosage and dropped out more frequently from therapy than did patients of higher sociocultural level. With regard to the frequency of reporting adverse effects, Rickels and associates [140,145,146] found that lower-class, as compared to higher-class, patients reported more side reactions on placebo. On active drug, however, these patients reported fewer sedative reactions. They also observed that female patients reported more side effects than males, that low compliance patients reported more side effects on drug, but not on placebo, and that female Negro patients with low hostility scores reported more side effects than patients with high hostility scores. They hypothesized that patients who could express their hostility directly would be able to tell the doctor if they felt improved; therefore, they would not have to resort to the use of side reactions as an indirect method of communicating disappointment [139]. Green's [71] observation that female patients report more side reactions than males and Michaux's [125] finding that significant positive correlations existed in his patients between side effects, dosage deviations, and resistance to therapy are in agreement with Rickels' findings. These results also support the observation by Jenner et al. [91] that patients who had a sense of well-being

tended to underestimate their symptoms and side effects, while those who felt ill overestimated them.

Although there is very little known of the clinical significance of social class and cultural and ethnic factors as they affect drug therapy, there is indication that patients do carry with them the cultural attitudes of their class and of their entire community toward concepts of patient and physician role in the treatment transactions. For example, Hollingshead and Redlich [79] found that different social class groups have different expectations of what psychiatric treatment involves. Lower-class patients may present special resistances to psychotherapy, for their style of life may not place such emphasis on verbalization and insight. Their expectation of doctor-patient relationship tends to be more authoritarian, and part of the effectiveness of drugs may be in the magical suggestion of authority and power symbolized by the prescription of drugs. In contrast, the upper- and middle-class patients may tend to regard drug therapy as inferior to psychotherapy. Rickels [145,146] has reported similar differences in conscious and unconscious attitudes toward the physician and treatment expectations between lower-class patients visiting a medical clinic and middle-class patients visiting a psychiatric clinic. It is a common clinical observation that, to drug-oriented patients, the pill-giving ritual is the most significant sign identifying the doctor's image as a helper and provider of relief from suffering. In order to establish a positive therapeutic relationship with such a patient, physicians find it necessary to prescribe some drug to meet his expectation.

EXPECTATIONAL-ATTITUDINAL VARIABLES

The patient's expectation and attitude appear to represent the central core of the placebogenic effects of drugs. They can be viewed as the common pathway through which all other placebogenic variables influence drug-placebo response. Attitudes and expectations are determined by all the contextual factors involving the drug, the setting, and the doctor-patient relationship, as well as by the patient's personality, the nature, duration, and intensity of his illness, and his past experiences and learned responses, especially as they relate to relief from distress and suffering. Of particular interest is the patient's attitude toward the drug as an agent invested with certain expectations and whose effectiveness in fulfilling these expectations depends on the powers that the patient attributes to his physician. The patient's expectations may be congruent or incongruent with those of the physician. The physician's attitudes and verbal instructions may greatly modify or enhance patient attitudes. For example, Lyerly and associates [117] structured the experimental drug situation so that instructions were used that were either appropriate or inappropriate to the effect of the

drug given. It was found that when active medication was used instructions had a definite effect on mood. When amphetamine (a stimulant) and chloral hydrate (a sedative) were given without instructions, there appeared to be little difference between their effects. They concluded that these drugs may give rise to nonspecific stimuli which need to be interpreted in order to be effective. Several authors [2,42,157,160,161,163] have commented on the oral incorporative power of the drug and the magical thinking associated with its ingestion.

The patient may see the drug as a source of mothering and, therefore, benefit from it regardless of its pharmacodynamic effects, or he may view it as a punishing, sadistic, and rejecting symbol of parental figures and may react to it with fear or resentment. In other words, the drug may become an extended object of transference and may be seen as playing either a soothing, comforting, or nurturing role, or a punishing and rejecting role, in the same manner that parental figures played their dual roles in the patient's childhood. Some patients expect control from the drug, others a state of nirvana, and others anticipate exhilaration. In a psychiatric hospital setting, the drug may be seen by a patient as a symbol of coercion or of the doctor's authority, which the patient fears or despises. The drug may become incorporated into a psychotic patient's paranoid system and may be seen as being poisonous and in alliance with his persecutors. Many patients tend to see the drug as the agent that makes them sick and perpetuates their incarceration in the hospital. Other patients, who fear losing the security of the hospital, accept the drug as the price they have to pay for staying in the hospital. In an outpatient setting, the drug may be seen as a guarantee of the doctor's continuous presence or as a symbol of mystical power emanating from the doctor or the institution he works for. Rickels and his co-workers [139] found that drop-out rates from treatment were highest among patients who had a low opinion of the hospital or clinic and who had experienced a high discrepancy between their original treatment expectation and the kind of treatment they actually received. Conversely, beneficial drug effects correlated positively with favorable patient attitudes regarding the hospital, the clinic, and the physician. In general, what the medication itself means to the patient in terms of the patient's fantasies, and what the giving and receiving of the drug, apart from the symbolic representations, mean to both the patient and the doctor are important aspects to be explored in drug therapy [157].

Both the act of giving and the action of the drugs themselves may affect the transference; that is, the attitudes, perceptions, and expectations the patient carries over (or transfers) from previous significant figures to the physician. These effects need to be understood in the context of the treatment situation in which the drug is given. According to Savage [163],

as a rule the act of giving tends, at least initially, to increase positive transference, but repeated gifts tend to fixate the transference at an oral dependent narcissistic level. Drugs may weaken transference, they can make transference more realistic, or they may actually become the focus of treatment. Although the drug is likely to introduce changes in the transference situation and in the psychotherapeutic process that need to be understood, it may also enhance a positive transference or change strongly ambivalent feelings to strongly positive ones [193]. Conversely, transference feelings and attitudes may profoundly influence the patient's perception of the drug effect. Savage [163] states that, in drug therapy, the patient acts out the role of the child; the physician, the role of the comforting, giving, yet authoritarian, omniscient, and omnipotent parent; and much of the comfort and healing arising from the giving of drugs stems from this particular doctor-patient relationship. Sarwer-Foner [161] has found that patients who usually do well on drugs are those who operate at a "magical" level of thinking and feeling. He suggests that, for these patients, the drug represents an active intervention by a powerful figure, and the physiological effect of it can be perceived as "good" or "comforting." Winkelman [193] suggests that just as there are patients who benefit from the suggestive value of the placebo, there are those who derive even much more value from an active drug "merely because they can feel the action and prize it as they do the 'magical giver.'" Patients sometimes undergo marked change based on the fact that they feel they have found the good and generous parent who will help them. This is similar to "transference cure" and is usually short-lived. Generally, prescribing drugs is in itself a powerful means of placing a patient in a dependent relationship [157].

Drug response is affected by not only positive but also negative transference. In the presence of negative transference, a patient who is given a drug may report no effects or, more commonly, may complain of various side effects which may be severe enough to cause alarm. Such adverse reactions are not drug-induced, but represent negative placebo effects and usually reflect the attitude of the patient who feels he is not being helped. On the other hand, the patient who wishes to please the therapist, or who feels he is being helped, will tend to disregard or minimize the discomfort associated with side effects produced by the pharmacological action of the drug. An exaggerated fear of taking drugs, which is often verbalized by patients as fear of becoming addicted to the drug, usually reflects the patient's fear of becoming intimate with the doctor or of assuming a dependent relationship with him. The implication of intimacy may be extremely threatening to a patient who fears it or feels guilty about it. Similarly, dependency may be threatening to a patient, either because it lowers his self-esteem or brings into focus his underlying longings for

passivity, dependency, and need to be cared for by someone. In some patients' refusal to take medication may represent a covert rejection of the therapist or a protest and rebellion against domination and control by the therapist. If the drug is very unpleasant or its effects threatening, it may lead to transference distortions of a negative character. Such distortions may lead, in the case of a psychotic patient, to the perception of the doctor as persecutor in alliance with his enemies. Certain adverse reactions to tranquilizing drugs, known as "paradoxical reactions," have been understood by various authors as having psychodynamic origin, associated with negative transference phenomena, or with characteristic personality profiles. These phenomena will be discussed in a separate section.

ILLNESS-RELATED VARIABLES

Placebogenic factors that have been reported to be associated with illness-related variables include severity of initial psychopathology, especially level of anxiety or intensity of experienced stress; nature of psychopathology; duration of illness; prior drug experience; number of previous drugs taken; and many other factors.

Beecher and associates [17,18], who studied the effect of placebo and morphine on patients with postoperative pain, concluded that the observed relief from pain by placebos is related to the psychological significance of the symptom to the patient, to the level of anxiety, and to stress. They presented evidence indicating that the effectiveness of placebo is greater when stress is great than when stress is less. In general, the stronger the unfavorable psychological state, the more effective the drugs. Rickels [139] has suggested that, depending on the degree of the patient's anxiety and neurotic symptomatology, minor tranquilizers can be expected to produce different effects on behavior: although improved behavior can be expected in the incapacitated, highly anxious patient, behavior may either stay uninfluenced or be impaired in the low anxious subject as a result of the increased manifestation of sedative effects. Rickels [139] similarly found that the initial level of anxiety primarily influenced the improvement of placebo patients. He also found that patients who rated themselves as more potent or adequate (high ego strength), as well as patients whose aspiration toward mental health was low, improved most, irrespective of whether they were treated with drug or placebo. Rickels and his group [44,144] also found that duration of illness as well as number of previous drug experiences did not significantly influence the good clinical response to minor tranquilizers yet affected the placebo response significantly. In patients who were acutely ill and without previous tranquilizer experience, placebo produced as high an improvement rate as the drug, while in chronically ill and drug pretreated

patients, placebo improvement was very low. They concluded that significant drug-placebo differences exist in chronically, but not acutely, ill patients. Similar relations between improvement and duration of illness, which also affected the results of controlled studies, were reported by Wheatley [190], Jenner et al. [91], and Black [25].

Downing and Rickels [44], in studying the prediction of placebo response in anxious and depressed outpatients, found that lower initial depression, acuteness of illness, favorable physician prognosis, and social class affiliation and its concomitants were the best predictors. They also reported that higher anxiety leads to greater placebo improvement, and that patients who have been ill less than six months show a greater placebo improvement than patients who have been ill longer. With regard to the nature of psychopathology, Rickels [139,140] reported that the "somatic versus emotional focus" may influence drug response. The less somatically focused, the less hypochondriacal, and the more emotionally focused the patient, the more he has a chance to improve. It has also been demonstrated that the so-called primary symptoms of schizophrenia are placebo-resistant, while its secondary symptoms are placebo-prone [65]. Differences in placebo and drug reactivity in depressed patients have also been shown to be related to the type of depression being treated. It has been well established that reactive or neurotic depression responds favorably to both antidepressant drugs and placebos; endogenous depression (genetically determined) fails to respond to placebos but does respond favorably to antidepressant drug treatment [20,83].

PERSONALITY-RELATED VARIABLES

Although the relationship of the patient's personality to drug and placebo response has been widely recognized, there has been limited research on the subject, the result of which has raised a great deal of controversy. It is generally assumed that one may consider the placebo effect as a behavior change resulting from two major sets of variables, namely, from specified contextual and attitudinal factors (tied to the particular nature of the situation characterizing the drug-giving ritual), and from general preexisting factors, presumed to be related to the personality of the patient and determining the so-called reactivity to placebo. In the studies of placebo, one of the most controversial points is the concept of placebo reactivity; that is, the existence of a predetermined placebo reaction tendency independent of the particular contextual circumstances of drug transaction, resulting in a definition of a class of subjects who respond in a constant manner and identified as "placebo reactors." Beecher [17] points out, "an impairment of ability to discriminate between active drugs and inert substances is implied in the phrase 'placebo reactor.'" It appears that experimental

populations vary considerably in the number and degree of placebo responses exhibited. For example, 60 percent of subjects with chronic headaches, studied by Jellinek [90], experienced relief from a placebo on one or more occasions, whereas 30 to 40 percent of postoperative patients studied by Beecher [17] obtained relief of pain from an injection of saline. The placebo reactors are supposedly very responsive to the nonspecific components of the treatment situation, and are therefore expected to respond positively (with improvement) or negatively (with side effects) to treatment.

Honigfeld has pointed out that "This definition implies a longitudinally consistent type of response to non-specific treatment. A supposed 'placebo reactor' is expected to respond to treatment similarly time and again. Very few longitudinal studies of this concept have been undertaken. Those studies which seem to support the 'placebo reactor' concept are usually cross-sectional" [83]. In the search for identifying criteria which could differentiate placebo reactors and nonreactors, several authors have studied the personality of patients who respond to placebos and compared them to patients who did not respond. Beecher and his co-workers [18] initiated one of the earliest large-scale research programs in this area. However, Beecher's cross-sectional approach appeared to be in conflict with the observation that there is marked variability of response to placebo when subjects are studied longitudinally. This was well demonstrated by Wolf [197]. In spite of this, however, Beecher [10] was able to show that the proportion of subjects who respond to placebo treatment in a wide variety of situations was a rather consistent average of 35.2 percent. On the basis of this evidence, Beecher concluded that there is a hard core of 35 percent of subjects who may be labeled "placebo reactors."

Lasagna and his collaborators [104] went even further and, on the basis of interviews and the Rorschach test, suggested that placebo reactors fall into a particular group that can be described as outward-oriented, somewhat anxious, and immature individuals. Similar findings were reported by Joyce [92] and Gartner [59], who identified placebo reactors as being less confident, less dominant, more sociable, and more extroverted than nonreactors. Similarly, Knowles and Lucas [101], employing the Maudsley Personality Inventory, recognized the correlation between placebo responsiveness and high scores on the neuroticism scale of the test. Using a number of criteria, including psychological and psychomotor test responses, physiological indices, and interview data, Klerman [98] was able to differentiate strong and weak placebo reactors.

Linton and Langs [114] found that strong placebo reactors are passive, nonintellectual individuals with loose thinking and flattened affect; conversely, weak placebo reactors were found to be sensitive, introspective, and highly intellectual individuals. On the other hand, Luoto [116]

reported that "high neurotic introverts" were positive placebo reactors, while "high neurotic extroverts" were negative placebo reactors. Lehmann [106] showed that individuals who manifest well-integrated autonomic functioning tend to show improved performance in certain areas under placebo conditions, in contrast to those who manifest poorly integrated autonomic functioning. Trouton [180], in an examination of the psychological mechanisms of placebo reactions, felt that there were well-defined groups of placebo reactors and nonreactors. The consistent reactors were found to be older, conscientious churchgoers with a greater acceptance of pain and suffering than the consistent nonreactors. Rorschach tests also indicated that the reactors were less mature and more dependent on outside stimuli than nonreactors.

Several other studies have attempted to correlate patterns of therapeutic responses to active drugs with various personality types. Klerman, DiMascio, and co-workers [98] were able to demonstrate that therapeutic drug response to neuroleptics was in part a function of two different personality types, identified as Type A and Type B. On the basis of scores on the Minnesota Multiphasic Personality Inventory (MMPI), Type A subjects, compared to Type B subjects, were low on depression, high on mania, low on introversion, low on manifest anxiety, but high on ego strength; they also liked athletic participation, had a father identification, and were practically oriented. In contrast, Type B subjects had a mother identification and were more artistically and creatively involved rather than athletically inclined. As reported by Rickels [139] differences in drug response were also produced by Munkelt and Lienert [127] and Janke [89] by dividing normal subjects according to the personality dimension "neuroticism" or "lability." Munkelt and Lienert reported a triple interaction involving a drug (alcohol versus meprobamate), personality (high versus low neuroticism), and sex. Janke [89] demonstrated that the minor tranquilizer, meprobamate, improved performance in emotionally labile or high anxious subjects, but it did not alter, and in some tests even slightly impaired, test performance in emotionally stable or low anxious subjects. Apparently sedative effects may be interpreted as threatening by emotionally stable subjects, thereby leading to deficits in psychological or behavioral test performance, while the reverse appears to be true for labile subjects. Janke [89] has suggested that his emotionally stable and labile subjects are comparable to Klerman's Type A and Type B subjects.

In spite of the evidence Wolf [197,198], as well as Honigfeld [81,82] and Parkhouse [129] in their review articles, came to the conclusion that a placebo reactor cannot be identified with any kind of certainty. It is reasonable to assume, however, that a certain personality constellation may show a tendency to respond consistently to a drug effect in a manner that may modify that effect, provided that other placeboogenic factors are main-

tained relatively constant. It is the specificity of the pharmacological effect of a drug and the specificity of the personality response pattern to that effect that makes the latter response relatively predictable. On the other hand, the response to a placebo, since it lacks the specificity of the pharmacological action of a drug, would be expected to be less subject to the influence of personality factors and more likely to be affected by concurrent contextual or attitudinal factors.

Rickels argues: "Assuming that many different variables affect the placebo response simultaneously, one can easily understand that the end result will depend on the summation or even interaction of these different variables and a minor change in this constellation may lead to a different end result" [139:4]. The comprehensive view of the placebo interaction over time was discussed by Wolf.

The differences in the conclusions implied from the studies of the various workers may be reconciled in view of the evidence that placebo reactions depend upon the particular circumstances prevailing at each administration. Relevant among these would be the nature of the symptom being treated, the motivation of patient and physician, the nature of the test agent, its mode of administration and the life situation of the subject at the time he is tested. The significant point here is not the apparently conflicting findings of investigators with respect to placebo reactors, but rather that in any given situation, responses to a placebo may vary as compared to any other situation and the significance of situations to human subjects cannot be precisely duplicated. Therefore, it seems unlikely that a placebo reactor can be identified and eliminated from an experimental situation. Rigorous placebo control will probably continue to be necessary in therapeutic research" [197:700].

The term *paradoxical reaction* refers to those adverse drug reactions that cannot be adequately explained on the basis of the known pharmacological action of the drug. Such paradoxical reactions have been reported in the use of psychoactive drugs, especially major tranquilizers (neuroleptics) and, to a lesser extent, minor tranquilizers (anxiolytics) and antidepressants. In such instances, rather than reducing a patient's anxiety or producing a calming effect, a paradoxical reaction is noted in which the patient's level of anxiety and degree of agitation increase after the administration of a tranquilizer. Furthermore, such paradoxical reactions may manifest themselves with irritability, hostility, panicky feelings, depersonalization, body image distortions, derealization, deepening of depression, and, in schizophrenic patients, with further psychotic deterioration. Such reactions are contrary to the expected ataractic or antipsychotic effect of these drugs.

Although the mechanism of paradoxical reactions induced by neuroleptic drugs has been attributed by some researchers to specific drug toxicity (physiological explanation) the majority of the investigators have attempted to explain them on the basis of nonspecific psychological

hypotheses, that is, in terms of placeboogenic mechanisms. One must differentiate paradoxical reactions from "toxic psychotic reactions," which can also be induced by psychoactive drugs. However, the latter are associated with clouding of consciousness, confusion and disorientation, and impaired awareness. Paradoxical reactions always occur in a state of clear consciousness.

The psychodynamic interpretation of the paradoxical reactions is primarily based on clinical observations of psychotic patients treated with neuroleptic drugs (chlorpromazine) [1,40,157,159,160,161,193,194]. Sarwer-Foner [158,159,162], was first to observe that some psychotic patients exhibited further psychotic disorganization associated with increased agitation, paranoid reactions, deepening withdrawal, or enhanced anxiety when placed on chlorpromazine or reserpine. Sarwer-Foner found that these patients had basic personality structures organized about psychomotor activity and an acting-out relationship with their environment. In view of the depressant and motor-inhibiting effects of the neuroleptic drugs, he postulated that the patients had interpreted the drug-induced psychomotor inhibition as ego-threatening, since it was at variance with some of the basic patterns of organization of their personality. In other words, the drug effect interfered with the activities used by the patient as a major defense against underlying conflicts. In order to understand what therapeutic effect the drug was going to have on a patient, Sarwer-Foner [159] suggested that one must know "the meaning, role or dynamic usefulness that aggressive behavior or hyperactivity has to the patient."

Subsequent studies by several other investigators on normal volunteers have provided further support to Sarwer-Foner's hypothesis. Thus, independent research conducted by DiMascio, Klerman and associates [98], using placebo and active drugs, showed that two groups of individuals could be identified, each with different personality characteristics: Type A was an athletically-oriented individual, markedly similar in personality dynamics to the patients described by Sarwer-Foner [156]; Type B represented an aesthetic, intellectually oriented, passive type individual. These two personality types reacted in contrasting ways to a placebo and drugs (reserpine). Furthermore, these authors postulated a drug-personality interaction that centered about the meaning of the psychomotor-inhibiting and sedative effects of drugs to the two personality types. It was found, as predicted, that drugs with pronounced sedative action (secobarbital and chlorpromazine) tended to produce in the athletic Type A subjects paradoxical reactions, consisting of irritability, apprehension, increased anger, becoming more agitated, and showing thought confusion with impairment of learning. On the other hand, the aesthetic Type B subjects showed improvement on tests of intellectual functioning, reported no negative feelings toward the drug, became more calm, and

showed an increase in rapport after the same doses of the sedative drugs. Similar results were obtained by Heninger and associates [76], who showed that self-assertive, physically oriented extroverts experienced phenothiazine-induced sedation and psychomotor retardation as disruptive and uncomfortable and responded to it with irritability and hostility, while introspective introverts reacted with relaxation, in spite of the slowing of psychomotor and cognitive functions. Paradoxical reactions have also been reported in studies using minor tranquilizers [6,56]. Thus Barrett and DiMascio [6] found that the drug produced a lowering of anxiety in high anxious subjects, while it produced a paradoxical reaction (anxiety) in the low anxious subjects. Similarly, Frostad and associates [56], in the course of studies on normal subjects with the minor tranquilizer diazepam (Valium), observed that six out of nineteen subjects responded in a paradoxical fashion to the drug, including increase in muscle tension and lowering of skin resistance. Further analysis revealed that the paradoxical reactors were more assertive, independent, expedient, uninhibited, imaginative and wrapped-up in inner urgencies than the other participants in the study. Paradoxical reactions were also obtained with the use of antidepressant drugs. For example, DiMascio [40], using normal subjects selected as falling on either end of the depression continuum of the Depression Scale of the Minnesota Multiphasic Personality Inventory (MMPI), administered imipramine and placebo. Again similar findings were obtained. Imipramine's antidepressant activity could be noted in normals, whose personality included a high depressive component, as measured on the depressive scale of the MMPI. A paradoxical effect, increased depression, tended to be observed, but only in individuals whose personality contained few depressive features.

Further support to Sarwer-Foner's [156] hypothesis has been provided by drug studies on psychiatric patients. Schlesinger [170], as quoted by DiMascio and Klerman [42] found that patients who responded adversely to tranquilizing drugs were characteristically active and athletic and their disturbed behavior was often asocial or antisocial. It was thought that, for these patients, the wish to be passively nurtured seemed deeply feared and much of their hyperactivity seemed to serve the function of a defense, a way of denying their repressed wishes. These patients seem to find the effect of chlorpromazine quite disturbing and become clinically worse, because the drug effect limits or removes important outlets and defenses necessary for the patient's self-esteem and reassurance or of his confidence in the integrity of his own body. It appears that, in general, a patient who typically uses motor activity as his main defense against unconscious passivity may be made anxious by a drug's restraining or sedating action. Similarly, the patient who feels guilty about his excessive dependent needs may become more anxious merely because receiving medication places him in a dependent relationship. Also, a

hypochondriacal patient may become frightened by the side effects of such drugs and, consequently, respond with paradoxical reactions. In patients with marked preoccupation with body image or ruminations over body integrity, who seem to be concerned about their ability to control their own bodies, the side effects of psychotropic drugs may produce an increase in their anxiety about bodily integrity, since they interpret the side effects as signs of impending death or as a threat of impending annihilation [161].

In an attempt to screen out some of the psychological variables associated with the euphoria-dysphoria and stimulated-sedated reactions, Felsing, Lasagna, and Beecher [47] studied subjects who deviated from the expected responses to placebo and drug therapies. They found atypical responses most frequently in those whose personality structure was inadequate in dealing with everyday stresses and those who were fraught with impulsivity, hostility, anxiety, and fear of loss of control. These workers postulated that such persons are predisposed to be alarmed by what they perceive as physiological concomitants of therapy. This alarm adds to their already heightened tension and further threatens their precarious control. It has been reported that the pseudoneurotic type of schizophrenic frequently experiences the physiologic effect of these drugs as disturbing and ego-weakening because of his tenuous hold on reality. Disturbances of bodily sensations intensify his ideas of unreality and depersonalization.

Furthermore, Sarwer-Foner [161] has found that in male patients who have profound doubts about their masculinity and use social "outgoingness" and intellectual and motor activity as the major defense against underlying unconscious feminine identifications and passive strivings, a drug that drastically reduces their motor activity is viewed as threatening, since it can be interpreted as exerting a demasculinizing effect. In retarded depression without agitation or anxiety, tranquilizing drugs may result in paradoxical reactions; by reducing the patient's capacity for motor expression, his interpersonal relationships are further limited. The patient's feelings of personal worthlessness are thereby increased and depression is consequently deepened. Other side effects induced by neuroleptic drugs, such as extrapyramidal symptoms, may also result in paradoxical reactions, depending on how a given patient interprets them [159]. For example, the pharmacological restraint of parkinsonism may be interpreted as rendering the patient vulnerable to assault or seduction, either homosexual or heterosexual, and the patient secondarily may respond to this with panic reaction or body image disturbances. Drug-induced akathisia — feeling driven and being unable to sit still — may imply loss of control of one's body and can be alarming to a patient. For the person who is always on guard against control by others, tries to maintain social dominance, and structures his relationships to that end, functional impairment

by a drug may mean loss of such control and result in adverse effects. For the schizophrenic patient with diffuse ego and body image boundaries, who is prone to feelings of derealization and depersonalization, the effect of the drug may intensify these feelings and may force the patient to try desperately to anchor his ego in some perceptual sensation, real or hallucinated, which will give him a measure of identity and will concretize what appears to him to be diffuse, blurred, and unreal.

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18

Compliance in Health-seeking Behavior

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A patient always has the right not to comply with health recommendations; the choice to comply should remain his under all possible circumstances. However, health providers need to know as much as possible about compliance in order to help those patients who wish to comply but have difficulty in doing so.

In a *New England Journal of Medicine* article, a physician noted "Doctors had better be aware of the phenomenon of noncompliance and its consequences" [23:268]. Studies on compliance show that there is much information for health providers to use to help their patients comply.

Noncompliance with health recommendations is a substantial problem, with most studies reporting noncompliance rates of 50 percent or more if ordinary conditions prevail [27,29]. The increasing professional interest in the area of compliance can probably be accounted for by a confluence of several factors. The average person in this country has a larger number of contacts with the health care system than ever before. He has found that there are more and more ways in which such contacts can give him relief in times of illness or even prevent its occurrence. As knowledge has continued to be accumulated, curative medicine has become possible for an increasing number of diseases; knowledge about the

pathogenesis of disease has resulted in the prevention or control of some diseases at an early stage.

A person with a disease is commonly given recommendations, often including instructions which he must decide whether to implement or not. In addition, "at-risk" populations with a high probability of having certain diseases in the future are more easily identified — for example, coronary heart disease. As might be expected, it is frequently possible to make recommendations to high-risk persons that will lower the probability of the onset of the disease. Indeed the total possible number of recommendations to improve health is astronomically high.

At the same time that health care contacts have increased, the role a person plays in his own therapy has subtly changed from a largely passive one to a largely *active* one. The life-threatening diseases (reflected in the major causes of morbidity or mortality) have moved from those of infectious diseases to those of chronic diseases or diseases in which the person's life-style is implicated. This has resulted in the need for long and continuous adherence to medical regimens and changes in patterns of living. Under these conditions the person assumes more responsibility for the health outcome because of the very nature of the health problem and the long duration of the therapy. Patients need to continue the therapy even if long periods of time intervene between contacts with physicians.

Another reason that patients assume a more active role in therapy is that in chronic diseases their daily life patterns have a direct and potent effect on their health status. Recommendations for the maintenance of health extend beyond those of taking drugs to those of changing habits, such as modifying smoking or eating patterns. Since there are large numbers of examples in which health outcome is not determined by the physician's actions alone, but rather that of the physician's and patient's actions jointly, the health provider might at first feel less responsible for the outcome. There may, for example, be some professional resistance to accepting this different kind of responsibility which includes gaining the patient's cooperation. This does not, however, seem to be what is happening. In keeping with their role as the identified group of professionals responsible for protecting health, physicians and their co-workers are focusing attention and efforts on how to help the patient comply. When one remembers that recommendations to nonhospitalized people constitute the bulk of the practice of medicine, one realizes that concern about patient compliance is unavoidable. It is quite reasonable to believe that all future physicians will assume that their responsibility encompasses maximizing those factors, such as patient education and understanding, that influence compliance.

One additional factor in the interest in patient compliance is the health profession's assessment of the efficacy of drugs or other kinds of

treatment [23]. Awareness of the possibility of little benefit or even harm from new therapies has brought with it the necessity for precise testing of the effectiveness of treatments. The closer the testing conditions approximate those found by the physician, the more problems of compliance must be confronted. Needless to say, the treatment has to be experienced by the patient to determine its effectiveness. Thus noncompliance in such studies dilutes the possibility of determining efficacy and must frequently be taken into account in designing treatment studies. The degree of confidence that accompanies the knowledge obtained from studies of efficacy is, of course, the physician's concern, for his confidence in recommendations to his patients is directly linked to such treatment studies. The following discussion of studies on compliance and their results will be limited, for the most part, to adherence to recommendations given to ambulatory patients. The major issues and information involve three general areas: (1) the definition and measurement of compliance, (2) types of compliance, and (3) factors related to compliance.

DEFINITION AND MEASUREMENT OF COMPLIANCE

In order either to study compliance or to help improve it, it is essential to identify noncompliant patients. Perhaps the simplest possible way is for the therapist to make such an identification. It would seem reasonable that, were they asked, most therapists would feel confident that they could readily identify noncompliers; in reality, it is a difficult task. Several studies on the degree of accuracy with which providers can identify noncompliant patients — usually with respect to medication — have concluded that providers are not highly accurate in their assessments. Such identifications have been shown to be no better than those obtained by pure chance.

Since the physician's subjective assessment of a person's compliance seems to be inadequate, one begins to consider other ways of measuring compliance as well as to look more closely at what is meant by the term *compliance*. Up until now, the discussion has implied a simple dichotomy of compliance and noncompliance, which is an oversimplification. There are some fairly intricate issues to be considered concerning the definition of compliance or determining when a person has a problem with compliance. Over a long period of time all patients will forget to take their drugs once in a while. It is particularly difficult for the physician to know the level of noncompliance that can be tolerated before the health recommendation becomes ineffective. Few studies have addressed this issue; yet it is analogous to the decision the physician makes about the treatment of his patient's blood pressure. When blood pressure reaches a certain level,

say a diastolic greater than 95 mm Hg, he institutes drug therapy. Perhaps as our knowledge accumulates, we will be able to say that methods should be instituted to improve compliance at a level of 80 percent or less compliance with a certain drug regimen.

Since the ultimate purpose is to gain knowledge about how to reduce noncompliance, we must recognize that the greatest offenders may not survive to contribute to understanding compliance and therefore a bias in information may occur. A person may be very reliable in returning to the physician but may not be adhering to the prescribed drug regimen.

Since our current and future focus will be on gaining knowledge from the scientific study of compliance, a caveat about this approach seems appropriate. A principle recognized in other contexts and labeled *the uncertainty principle*, that the act of studying, measuring, or observing a phenomenon may itself affect the course of events, is almost surely operating in some types of compliance studies. In other words, compliance itself may be affected by attempts to make observations about it. This is the case, for example, in making personal contacts following smoking cessation programs. Contacts to determine the smoking level after the program has ended seem to affect the smoking status—probably by positively reinforcing cessation.

Measures of compliance reported in the literature have been varied and sometimes complex, being commensurate with that of the behavior. Most of the empirical evidence about compliance has been based on exceedingly simple measures, such as whether the person went to one follow-up clinic or whether one urine test indicated that the prescribed drug had been taken. These simple measures do not incorporate resolutions to many of the problems imbedded in compliance behavior and thus may account for some of the inconsistency between studies when assessments have been made by different methods. Compliance is a continuous and dynamic process in most instances instead of a one-time event. Continuous decision making about adherence is involved and compliance therefore needs to be reassessed periodically. If a patient is on medication for long periods of time, or even a lifetime, his compliance will most likely change for better or worse as different events occur in his life. Although there have been few studies conducted on long-term compliance, there is enough information to indicate that the physician should make periodic assessments in order to identify his patients' problems of compliance.

Furthermore, it has been found that compliance with one health recommendation by no means assures compliance with a different one [27]. It has been shown, for example, that it was possible to improve the rate of appointment keeping for hypertension monitoring if patients received special follow-up, but the same group of patients showed no improvement in their compliance with the drug regimen when comparisons with a control group were made.

The complex of recommendations for health ranges from advice about periodic health examinations to making radical changes in daily habits, such as abstinence from alcohol. With a little reflection, one would certainly expect compliance with some recommendations to be higher than with others, and this proved to be true in several studies. For example: (1) the greater the change in the person's long-standing personal habits, the less likely he is to comply; (2) the more complex the drug regimen, the less compliance is obtained; and (3) the longer the duration of therapy, the less the compliance.

TYPES OF COMPLIANCE

Compliance varies according to the type of health recommendation: (1) making a contact with a health provider, (2) adhering to a drug regimen, or (3) making life-style changes.

Health Provider Contact

Perhaps the most pervasive type of behavior involving compliance is that in which the patient is asked either to initiate or to continue contact with a provider. This request involves the simplest form of compliance (unless some problem of ambulation exists), yet it is basic to obtaining health services. It is a truism that nothing can be done if the patient does not present himself for help. Still the serious consequences of such noncompliance is too often seen when a person does not seek help at all or waits until his disease has progressed beyond the point of intervention. There have been many attempts to find the reasons for such delay. The factors found to be related to delay in or failure to seek care are fear, ignorance, level of education, cultural beliefs, financial status, and convenience of location [3,8,15,38]. Studies, as a whole, have shown that any of these factors will become inoperable if there is concentrated effort to overcome the problem [9]. Some of the most convincing evidence comes from efforts to increase participation in screening and immunization programs. One of the better studies [21,35] showed that an increase in acceptance of polio vaccine was obtained by identifying the nonaccepters, for example, those who live alone, and then intensifying efforts by volunteers to explain personally the benefits of such programs.

Another area from which information is available is even closer to a physician's compliance problems. Broken appointments have been studied quite extensively. Keeping scheduled appointments is important for two reasons — concern that the person's health may be in jeopardy and that broken appointments make efficient and maximum use of provider

resources impossible. Several successful efforts have been reported in improving appointment keeping [11,42].

Appointment keeping can be achieved for approximately 85 percent of those made if the provider makes some effort. It is possible to achieve this level regardless of the reason for the visit — as return for an X ray or for a hypertension visit. While appointment keeping does not seem to be related to the length of time since the last provider contact, it does seem to be related to the time of the week. More appointments are broken on Mondays and Fridays than on other days. Several articles have shown that nearly half of the patients advised to seek care fail to do so — even for a health problem like hypertension [2,34]. One study, for example, found that of patients seen in the emergency room, over 40 percent of those told to return for care did not. Addition of a follow-up clerk with the responsibility of reminder contacts and rescheduling appointments reduced by one-half the percentage of those who did not return [12].

An article in the August 1969 issue of *Hospital Progress* [18] concluded that almost half of all missed appointments were related to ineffective communication. If this conclusion is correct, differences in the effectiveness of communication may account for some of the variation in rates of missed appointments that have been reported. It is important to note that this improvement was achieved equally as effectively by postcard or phone call from either a physician or a nurse.

Not only has this approach of intensified individual contacts been successful in improving compliance with visits, but it has also been shown to be successful in achieving a higher level of compliance for several other types of recommendations, including taking prescribed medications. One study reported that a similar approach with hypertensives led to better control of blood pressure. Most of the contacts reported in these studies were done by auxiliary health personnel [1].

In sum, a substantial amount of evidence strongly suggests that very simple increased efforts will increase compliance with all types of appointments.

Medication Compliance

Perhaps the area within which there has been most attempt at assessment is that of medication compliance, as the result of several factors [5]. Drug compliance is a datum that seems to lend itself to ready monitoring because of the quantification; however, this is more elusive than it first appears. Another factor is that with more sophisticated computer analysis possible, information about drug effects has increased considerably the

efforts to obtain information on how much of a drug is being consumed. While this has proved to be difficult even for persons who are residents in a health care setting, it has been shown repeatedly to be even more difficult for ambulatory patients [22]. One of the contributing factors has been the inadequacy of the methods available for quantifying the amount of the drug consumed. There are three independent ways to gather such information, and they have been used extensively — pill counts, urine assays, and patient interviews. Most often only one measure is used in the assessment, but occasionally two or more are used in combination. The most often used is the one in which the patient (or someone else, if he is not able to respond) is asked about drug consumption. It has been found that people do not report their compliance accurately; further, it will be recalled that when health providers are asked to assess their patients' compliance, they are unable to do so with substantial reliability. However, these methodological problems do not mitigate the need for such information. It has been found that, on the average, there is about 50 percent compliance with medication recommendations. This would suggest, and indeed it has been borne out in practice, that when a prescribed drug seems to offer no benefits, the physician should determine the rate of compliance before adjusting or changing the drug. If the patient has not been taking the prescribed medication, it may be undesirable to change the dosage.

It must be acknowledged that if a contact is made for health care and the prescribed recommendations are ignored, the encounter is a failure as far as health benefits are concerned. Medication compliance is an issue in any health problem and has been found in such widely varying cases as iron prescribed for pregnant women with anemia to antihypertensive medication for those with elevated blood pressure [4, 40]. That is, it is not restricted to long-term medication requirements but abounds throughout.

Most studies are consistent with the dictum that the more complex the drug regimen the more noncompliance is seen [2]. For instance, it has been found if the patient's cooperation is needed only once, therapy is more effective than if continued cooperation is needed. As might be predicted, studies have found that injected penicillin is more effective than self-administered, oral penicillin [10, 33]. Moreover, multiple daily doses of the same or different medications are more likely to result in non-compliance than a single daily dose [28]. In other words, the more that is required, the more noncompliance can be expected.

There is some suggestion that older patients have more trouble than younger ones in complying [39]. An innovative approach was reported in which hospitalized persons over sixty-five were given the responsibility for their own regimen [26]. It was found that most of them were able to learn to take the medication as prescribed. This is a useful approach for it allows problems to be identified under close supervision and provides the

information necessary to overcome them. In addition those who are unable to carry out the responsibility are identified. Since most persons over sixty-five are likely to be on some type of medication, this study suggests that it is possible to increase their drug adherence by assisting them with the establishment of the required routine. Education of hospitalized patients to take their medication when they are discharged should be used more extensively.

Life-style Changes

The most difficult compliance to achieve is related to changing personal habits, such as eating patterns, exercise, or alcohol intake. Although these types of behaviors are known to relate to health status, patients have proved to be refractory when doctors have tried to change them. This type of health behavior change seems to be particularly resistant to mere advice which is left to be implemented by the patient on his own. Perhaps part of the lack of success is that health providers themselves are somewhat hesitant to give advice about personal habits. However, a national survey has reported that people do value and expect health advice about personal habits from their physicians [17]. Moreover, studies seem to bear this out. If physicians give a strong health message about smoking, for instance, their patients are more likely to reduce their smoking than if no such advice is given [6,30].

It is questionable, however, whether physicians are more effective than other types of counselors in changing personal health habits when extensive contacts are required; evidence suggests that they are not [41]. This is consistent with the earlier finding about contacts for appointment keeping. It seems that the most effective methods for changing personal habits are those which have been developed and implemented by lay persons or auxiliary personnel. In particular, the assessment of weight control programs shows that groups such as TOPS, or Weight Watchers, or other nonprofessionals are more effective than a conventional medical approach [41]. This suggests that the physician might well be most effective in initiating health advice and reinforcing successful health habit change but that his efforts can be strengthened by working with other personnel who see patients more often. This seems to be the most effective method for helping patients with health recommendations which involve making changes in life-style.

FACTORS RELATED TO COMPLIANCE

There are three general categories of factors that have been studied [14] to determine their relation to the compliance behavior of patients: the personal characteristics of patients, the personal characteristics of providers,

and the structural characteristics of the health care setting. Although structural characteristics, such as time and location of available services, are certainly important factors, they are not included in this chapter.

Patient Characteristics

Considerable effort has been expended to assemble information about the types of individuals who are noncompliant. Unfortunately, there are large numbers of *studies* which, taken as a whole, have reported contradictory information about the sociodemographic variables of sex, age, and economic status [8,9]. The most ambitious attempt to synthesize knowledge in this area has been by Sackett and his colleagues [38]. What emerges from this and similar attempts is that it is difficult to identify noncompliers on the basis of knowing their sociodemographic characteristics. One physician who studied noncompliance in considerable detail concluded that each person should be considered a potential noncomplier [36]. Noncompliance should be assumed especially when no evidence of benefit from the recommendation is seen. This should not be interpreted as recommending an adversary relationship; quite the reverse is necessary.

Despite the lack of an easy method of identifying noncompliers, there are certain personal characteristics, including attitude, therapy, and disease, which should alert the physician that the patient may be at greater risk of noncompliance — for example, those who live alone. This is consistent with the finding that noncompliance increases depending on whether the individual is an inpatient, day patient, or ambulatory patient [16,32]. In other words, the less support the patient has or the more he is on his own, the greater the likelihood of noncompliance [2]. Those who are very young or very old likewise seem to be more likely to be noncompliers. Among studies of children who received drugs, it was found that those whose mother was “responsible” and saw the illness as a serious one took more of the prescribed medications [7,39]. Those who were hostile or dissatisfied with the health encounter showed their rebellion in failing to adhere to the prescribed regimen [31].

Persons who understand the therapeutic benefit of the recommendation and who have immediate negative feedback if they fail to comply are more likely to have better compliance. This has been shown most often with drug regimens. There is less evidence, but it would be expected that positive consequences, such as feeling better, would encourage compliance. Similar to the understanding of the recommendation, an understanding of possible side effects seems to be a preventive measure to enhance compliance. The experience of unanticipated and alarming side effects puts the person at high risk of noncompliance.

These are all findings that fit into a commonsense approach, but they have had the benefit of study and should therefore be taken more seriously as characteristics which put a person at a higher probability of being a noncomplier.

It should be realized that sometimes psychodynamic reasons account for noncompliance. If present, they are frequently subtle and often difficult to overcome. There are some persons, for example, who deny their illness and are therefore unable to comply with the health recommendations since denial and compliance are incompatible. Usually the denial stems from being unable to deal with a "weakness" or with the fear that accompanies being told of the illness. There are other patients who, because of a lack of trust, do not accept the validity and truth of the illness or the prescribed treatment. These are persons who for a variety of reasons are convinced they are not ill, and therefore there is no rationale for compliance with any treatment.

On the other hand, there are those who accept the fact that they are ill but are noncompliant because they are motivated to remain ill. They, for instance, get either attention or tolerance because of their illness or are given special dispensation from work or other demands. Others may be motivated because their illness is a burden to another. The other person might feel responsible for and therefore feel guilty about the illness or may have to make sacrifices. These constitute means of administering punishment.

Provider Characteristics

There have not been as many studies to identify personal characteristics of the provider related to compliance as there have been to identify patient characteristics. This may, however, be misleading, for the provider/patient encounter is an interaction in which both persons' characteristics contribute to the process and to separate these characteristics is in some ways arbitrary.

There have been a few studies of the relation between the quality of the doctor-patient relationship and patient compliance [13,14]. One of the better of these reported a variation in the percentage of satisfied patients among physicians. All study physicians had some patients who reported lack of satisfaction and all had some who were not compliant with their recommendations, but the higher the rating of satisfaction with the visit, the higher the percentage of those following the recommendations for medicine, diet, and return appointments.

Several studies have shown acceptance and satisfaction with nurse practitioners and paramedical assistants, which seems to be related to the

ability of these providers to establish rapport and continuity of contact with the patient — as with physicians [24,25]. Other studies have confirmed that continuity of care and compliance are related. Despite several methodological problems that are difficult to overcome, it seems that a patient who makes several visits to the same physician is more likely to comply with the health recommendations. There are other studies that show that improved compliance is related to a longtime relationship with the physician [7] and that private physicians are better able to obtain compliance than clinic physicians [20]. It is not possible, of course, to study these characteristics without considering the patients' characteristics. Nevertheless, they do suggest that a good patient-physician relationship which is maintained over a fairly long time increases the chances of compliance.

Even if physicians do not express their views, it has been found that the physician's attitudes toward treatment and medication are important in determining the patient's compliance behavior. It has been found that the physician's degree of conviction in the treatment is related to the patient's cooperation. If the prescribing physician believes in the efficacy of the treatment, he is much more apt to obtain patient compliance than is his counterpart who is unconvinced about the benefits. Seemingly, this conviction is, intentionally or unintentionally, communicated to the patient.

Several authors attribute all noncompliance problems to failure in communication between the provider and the patient [19]. While this seems to be a stand which cannot be completely supported because of evidence that some patients' successfully titrate their drugs, it should not be completely dismissed. Those physicians or providers who spend time establishing the patient's understanding of the reason for the required regimen do get better compliance. A study of psychiatric patients given drugs showed that compliance was better among patients seen by physicians who inquired at each visit about their improvement and reassured those who reported side effects [37].

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19

Review of Interview Research

Aron W. Siegman, Ph.D.

If we were to count the number of interviews being conducted each day, we would certainly be faced with a staggering figure. The interview is a major tool, if not the major tool, in the armamentarium of the helping professions, be they medicine, psychiatry, psychology, social work, and counseling of various sorts. It is also used by teachers, selection and evaluation officers in business and industry, researchers, pollsters, and law enforcement officials. There is one common feature to all such interviews and that is that one person, the interviewer, has, as his primary goal, to obtain information from another, the interviewee, whose task is to provide the information. The lack of symmetry between the participants, the differentiation of roles between interviewer and interviewee, distinguishes the interview from ordinary conversation, although the interview can be conceptualized as a specialized type of conversation [65]. Despite the similarity of their formal structural features, interviews vary along a variety of dimensions, perhaps the most important being the interviewee's willingness to share his information. In some interview situations, such as the medical or personnel interview, interviewee cooperation typically presents few problems, in contrast to criminal investigations where the interviewee's primary objective is to withhold and distort

sought-after facts. It is not unreasonable to assume that the optimum interviewing technique, in the sense of obtaining maximum information, is likely to vary as a function of the interviewee's cooperativeness.

This chapter deals almost exclusively with the information-gathering type of interview conducted by members of the helping professions. In such interviews, the client is typically, though not always motivated to cooperate. Patients are occasionally referred for an interview against their will. However, the information in this chapter applies primarily to cooperative interviewees, in the sense that they participate in the enterprise of their own volition. Even so, interviewers can expect to encounter some resistance from the interviewee depending upon the type of information the interviewer seeks. In interviewing people with emotional problems, and sometimes even in the course of a medical interview the interviewer needs to know intimate, potentially embarrassing information, which people have learned to suppress. The major challenge, then, is how to obtain maximum relevant, meaningful information about the interviewee — how to overcome the learned inhibitions against disclosing intimate information.

The focus in this chapter is on the information-gathering, not the therapeutic, interview. The primary purpose of the latter is to alleviate the patient's suffering, while the primary objective of the former is to obtain information. The two objectives may clash in the sense that the conditions that facilitate one objective may be counterproductive in relation to the other. Yet it may not always be possible to keep the two goals completely separate. A patient seen for psychiatric evaluation may be sufficiently distraught to require some "emergency" therapy and, conversely, basic information gathering may be required as part of the psychotherapeutic process.

Considering the ubiquity of the information-gathering interview, it is surprising that there are few hard facts, supported by empirical research, about how to conduct this important activity. Most of what is generally considered good interviewing practice is based on clinical experience and frequently has its roots in the therapeutic interview, which may or may not be relevant to the information-gathering type of interview.

The paucity of research studies on the initial interview notwithstanding, the confines of a single chapter do not allow for a comprehensive review of the appropriate literature, unless elaborate studies are condensed into a few cryptic sentences. As an alternative, I have chosen to focus on a selected number of important issues in the interview, and to discuss the relevant studies in some detail. Generally, we are most interested (1) in the kinds of interviewer behaviors that facilitate interviewee productivity and self-disclosure and (2) in the nonverbal correlates of the

interviewee's feelings and attitudes during the interview. More specifically, we will be concerned with the following topics: (1) The relative efficacy of open-ended versus specific interviewer questions (e.g., "Tell me something about your family" versus "Did you quarrel often with your family?"); (2) the interviewer-interviewee relationship (What are the consequences of a warm and friendly interviewer style versus a reserved and neutral interviewer demeanor, and which of these two is more conducive to interviewee productivity and self-disclosure?); (3) the effects of the interviewer's status on interviewee's productivity and self-disclosure.; (4) the role of nonverbal cues in the initial interview; (5) the role of social reinforcers in controlling the interviewee's verbal behavior; and (6) interviewer-interviewee synchrony or congruence both within and between interviews.

IN DEFENSE OF EXPERIMENTAL ANALOGUES

As a rule I will favor experimental over naturalistic studies, although the latter will not be excluded. By experimental studies, I refer to investigations in which specific independent variables of interest, be they interviewer ambiguity-specificity or interviewer warmth, are experimentally manipulated, either individually or in combination in multivariate designs, while keeping all other relevant variables constant. The experimenter then monitors the effects of these manipulations on one or more dependent variables, such as interviewee productivity, verbal fluency, or self-disclosure.

Why this bias in favor of experimental studies? One of our first interview studies investigated the effects of open-ended or ambiguous interviewer remarks, as opposed to specific ones, on interviewee productivity level [52]. We did this by analyzing twelve naturalistically conducted initial psychiatric interviews. As expected, we found that the open-ended interviewer probes were associated with more productive, i.e., longer, interviewee responses than the specific interviewer remarks. We also found a significant positive correlation between interviewer ambiguity level and the level of speech disruption* in the interviewees' responses. These findings could be interpreted to mean that open-ended interviewer remarks produce not only productive interviewee responses, but also arouse interviewee anxiety, since there is considerable evidence that speech disruption is an indication of anxiety arousal [70,78].

* These were measured by Mahl's [36] Speech Disturbance Ratio (SDR). This index, which is more fully described elsewhere [70,78] includes such categories as incomplete sentences, sentence corrections, and stutters.

A subsequent topical classification of the interviewer's messages in these twelve naturalistic interviews revealed a thorough confounding between interviewer ambiguity-specificity level and topical focus. As the interviewers moved from one topic to another, they changed the ambiguity level of their questions. The interviewers were relatively specific when focusing on their patients' work history but became relatively ambiguous when focusing on their patients' family relations. As a rule, the greater the anxiety-arousing potential of a question, the greater the likelihood that the interviewer would phrase it in an ambiguous rather than in a specific fashion. Obviously, this finding raises a serious question about our interpretation of the results obtained in that study. The findings in regard to both interviewee productivity and speech disruptions may, in fact, have nothing to do with interviewer ambiguity-specificity level. Instead, they may reflect variations in interviewer topical focus and its anxiety-arousing potential.

There are, of course, statistical ways and means to control (neutralize) such confounding, but there is always the proviso that the investigator is aware of all the relevant confounding factors, which is seldom the case. Consequently, there are strong arguments for using experimental analogues of the initial interview, even though such analogues present problems of their own. The advantage of such experimental analogues is that the experimenter can manipulate one or more variables at a time while keeping everything else constant. This can be done by providing the interviewer with a prepared script, which he is usually asked to memorize, and by training the interviewer to behave in a consistent manner. The problem with such interviews is that they may appear contrived and artificial and that their content is frequently of a fairly trivial nature. We are now satisfied, however, that with sufficient training it is possible for an interviewer to limit himself to rehearsed remarks and to behave in a consistent preprogrammed fashion and yet communicate to the interviewees that they are participating in a serious and spontaneous interview.

After this apologia for experimental analogues, it cannot be denied that even with all the effort to give such interviews the verisimilitude of naturalistic interviews, they differ from the latter in important ways. One obvious difference is the motivation of both interviewers and interviewees for participation in the interview. Clearly, the personal stakes involved in the two types of interviews are quite different, although this variable too is subject to experimental investigation. Nevertheless, it cannot be denied that experimental interviews are not the same as naturalistic ones. We only claim that our experimental interviews are analogues to naturalistic ones, and that the discovery of the lawful relationships which regulate communication in these experimental interviews are relevant to

an understanding of interviewer-interviewee behavior in naturalistic interviews. Ultimately, however, the results of such experimental studies need to be tested in the crucible of naturalistic settings.

INTERVIEWER AMBIGUITY

One principle on which interviewers with various theoretical allegiances agree is that whenever possible priority should be given to open-ended or ambiguous questions over specific ones. In part, this judgment is probably related to the fact that much in current interviewing practice is based on psychoanalytic technique, a point discussed at some length by David Riesman [57]. Ambiguity is, of course, a hallmark of classical psychoanalytic practice, characterizing the very structure of the analyst-patient relationship, as well as the analyst's communications to his patients. The analyst is enjoined to remain as much as possible in the background, not to emit any cues which may signify approval or disapproval of his patient's communications, and not to reveal his own feelings and values. "Just say anything that comes to your mind" is a typical analyst's message to his patients. The theoretical rationale for this emphasis on ambiguity is that it facilitates free association and transference, two basic features of the psychoanalytic process. The relevance of this rationale to the interview is at best limited, because the primary objective of the information-gathering interview is neither to encourage free association nor to establish a transference relationship, but rather to obtain the maximum amount of information about specified areas.

Bordin [2] has invoked the "projective hypothesis" as a theoretical justification for ambiguity in the initial interview. The "projective hypothesis," which provided the theoretical underpinnings of the projective test movement, assumes that the greater the ambiguity of projective test stimuli the greater the likelihood that they will elicit personally meaningful information rather than superficial, stereotyped responses. This assumption or hypothesis has been extensively investigated, mostly within the context of the Thematic Apperception Test (TAT), with inconclusive results. In fact the evidence indicates that if ambiguity in the TAT is defined as a lack of stimulus structure, its effects are opposite to those stated in the projective hypothesis. The findings consistently show that the greater the clarity of a TAT card and the easier it is to identify its various figures, the greater its potential to elicit fantasy and personality relevant material. For a summary of this literature the reader should consult Murstein [45]. However, some investigators, proceeding from an information theory point of view, argue that ambiguity of projective test

stimuli is more appropriately defined in terms of response variability. Thus, in the TAT an ambiguous card is one that elicits different themes or stories, while a nonambiguous card is one that elicits a popular or stereotyped response [30,31,32,45,46]. If ambiguity in the TAT is defined in the latter manner, one can find some support for the projective hypothesis, but it is by no means consistent. Thus, Murstein [47] obtained a significant positive correlation between the ambiguity level of TAT cards and their capacity to elicit personality-relevant themes, in a male but not a female group. A study by Kenny and Bijou [32] suggests that the relationship is a curvilinear one, with medium ambiguity cards eliciting the richest stories. Using female subjects, the Siegman and Pope study [76] found that the ambiguous cards elicited less anxious and less depressed themes than the unambiguous cards. Contrary to the projective hypothesis, this finding suggests that the greater the subject's response alternatives, the easier it is for him to suppress potentially anxiety-arousing themes and to replace them with relatively neutral ones.

This cursory review of the empirical evidence as it relates to the projective hypothesis should suffice to convince us that the presumed advantages of ambiguity are yet to be demonstrated, even as far as projective tests are concerned. Certainly the evidence is not sufficient to advocate ambiguity as far as the interview is concerned.

Others have invoked the construct of anxiety in conceptualizing the role of ambiguity in the interview [21,34,52]. On the assumption that ambiguity is stressful and anxiety-arousing, it is suggested that the effects of ambiguity are mediated via anxiety arousal. On the further assumption that moderate anxiety levels tend to have an activating and arousing effect, it is argued that a moderate ambiguity level is a desirable interview goal [21].

Ultimately, the answer to the question whether ambiguity within the interview promotes desirable interview goals will have to be based on data obtained within the context of the interview. However, before addressing this question, one needs to be more specific concerning both the independent variable — ambiguity — and the dependent variables. One needs to distinguish between different kinds of ambiguity. First, there may be ambiguity about the goals of the interview. While some interviewers may specify their precise goals, for example, "I am interested in obtaining as much information as possible about your family relations," others may not. Second, there is a type of ambiguity that can be called message ambiguity, referring to the form of the interviewer's remarks or questions. Message ambiguity can be conceptualized very much like ambiguity in the TAT, with an ambiguous interviewer remark defined as one that has a number of response alternatives — ("Tell me something about your family") — and a highly specific interviewer remark defined as one that

has only a single response alternative — (“Where do you work?”). Yet a third type of ambiguity involves the relationship between the interviewer and the interviewee and the amount of feedback the interviewer is willing to provide to the interviewee. Some interviewers adopt a strictly neutral and reserved stance, giving no feedback as to how they feel about the interviewee and what he says, while others adopt a friendly and accepting demeanor. The studies to be discussed in this section focus primarily on message ambiguity. The primary dependent variables are interviewee productivity and interviewee’s willingness to disclose personal and psychologically meaningful material.

EMPIRICAL FINDINGS

Before proceeding with our first experimental investigation of interviewer ambiguity, we (Siegman and Pope [76]) developed a scale with which to assess the ambiguity-specificity levels of the interviewer’s remarks. Using this scale we constructed an interview schedule composed of an equal number of relatively ambiguous and relatively specific interviewer questions (Table 19.1). The order of these questions was only partially controlled, with the interviewer always opening the interview with two ambiguous questions, proceeding with four specific questions, and concluding with two specific ones. As can be seen in Table 19.1, the same procedure was followed by the interviewer in two topical areas: family relations and school experiences. The interviewees, fifty female students in a university-affiliated school of nursing, were preselected so that questions focusing on their family relations would be more anxiety-arousing than questions focusing on their school experiences. A postinterview questionnaire revealed that this objective was in fact achieved, although even the family relations topic produced only mild anxiety arousal. Finally, all interviewees were administered the Taylor Manifest Anxiety Scale (MAS), a measure of predispositional or trait anxiety.

Interviewees’ productivity scores (number of words per response) were clearly affected by the ambiguity-specificity manipulation, with interviewees giving longer responses to the ambiguous than to the specific interviewer queries (the means being 47.86 and 16.16, respectively). The magnitude of the correlation between the two variables (interviewer ambiguity and interviewee productivity) was .92.

There was no statistically significant interaction between the ambiguity manipulation and topical focus, nor between the ambiguity manipulation and interviewees’ anxiety level as measured by the Taylor MAS, both of which should have occurred if anxiety arousal was indeed the

Table 19.1
EXPERIMENTAL INTERVIEW

	<i>Specificity rating*</i>
A. NEUTRAL TOPIC	
<i>Low Specificity</i>	
1. Now would you please tell me something, anything you would like, about the schools you attended before coming to the School of Nursing	4.1
2. Tell me something about the elementary school you attended (junior high school, high school — whichever was not emphasized in response to question 1) and how you got along there.	6.3
<i>High Specificity</i>	
1. In which of these schools did you get along better?	10.9
2. Which of these schools was a better school?	10.9
3. Did you participate in many extracurricular activities?	10.9
4. Would you say that you participated more than the average student?	10.9
<i>Low Specificity</i>	
1. Now I'd like you to tell me something, just anything that occurs to you, about your first two years in the School of Nursing at College Park.	6.3
2. I know very little about schools of nursing. Tell me some more about the School of Nursing, anything that occurs to you.	6.3
B. ANXIETY-AROUSING TOPIC	
<i>Low Specificity</i>	
1. Would you please tell me something about your immediate family and how you got along with them.	4.1
2. Tell me more about your father (mother — whichever was not emphasized in response to question 1), just anything you can think of.	6.3
<i>High Specificity</i>	
1. With whom did you get along better, with your father or with your mother?	10.9
2. Did your father and mother get along well?	10.9
3. Did your mother tell you about menstruation?	10.9
4. Did your father treat all his children equally?	10.9
<i>Low Specificity</i>	
1. Tell me more about your brothers and sisters.	6.3
2. We've talked about you and your parents when you were younger. Tell me something about you and your parents now.	6.3
*Based on the Siegman and Pope [75] Interviewer Specificity Scale.	

mediating variable in the relation between interviewer ambiguity and interviewee productivity [53,78]. Yet another reason for rejecting anxiety arousal as the mediating variable is the finding that the ambiguity manipulation had no significant effect on the level of speech disruption in interviewees' responses, as measured by Mahl's [36] Speech Disturbance Ratio (SDR). Experimentally manipulated anxiety-arousal is consistently associated with an increase in speech disruptions, as measured by Mahl's index. The fact that the ambiguity manipulation in this study had no significant influence on interviewees' SDRs makes it highly unlikely that anxiety arousal served as a mediating variable.

Siegmán and Pope [78] have since taken a cognitively oriented approach to the relation between interviewer ambiguity and interviewee productivity. By definition, an ambiguous interviewer remark presents the interviewee with a number of response alternatives. The interviewee has to decide with which alternative to begin, and then which of the alternatives to include and which to exclude. Clearly, this involves some decision making on his part. It is, of course, true that by their very nature some ambiguous interviewer remarks call for longer interviewee responses than specific ones. It is suggested, however, that more is involved in the relation between ambiguous interviewer messages and interviewee productivity level. This is indicated by the finding that the interviewees' responses to the ambiguous interviewer remarks are associated with more hesitantly articulated speech than their responses to the specific interviewer remarks. Hesitation took the form of a slower speech rate and a higher ratio of filled pauses, that is, ahs and similar expressions [78]. In another study interviewer ambiguity level significantly affected interviewees' response latencies and the duration of their silent pauses, with the highly ambiguous interviewer remarks, in contrast to the specific ones, being associated with longer latencies and within-response silent pauses. These indices (long latencies, silent pauses, ahs, and a slow speech rate), are all correlates of cognitive activity and indicate that information processing is taking place at the time of the hesitation [15,71]. These findings, then, are consistent with the hypothesis that uncertainty is a critical mediating variable between interviewer ambiguity level and interviewee productivity level.

The second study in the series on interviewer message ambiguity and its effects on interviewees' responses focused on the following questions: (1) How important is it, from the point of view of interviewee productivity, that the interviewer begin his questioning with relatively ambiguous remarks and gradually proceed to more specific ones, rather than proceeding in the reverse order? To phrase this question in statistical terms: Are there significant order effects? (2) What, if any, are the effects of the interviewer-interviewee relationship on the positive correlation between interviewer ambiguity level and interviewee productivity? Is this

correlation increased if the interviewer withholds social reinforcement feedback to the interviewee, so that the latter is even more uncertain about the adequacy of his responses? (3) What is the relation between interviewer message ambiguity and interviewee self-disclosure?

In this study [55,56], thirty-two female interviewees participated in a sequence of two interviews, each conducted by a different female interviewer. In one of the interviews, the interviewer adopted a warm and friendly manner; in the other she adopted a decidedly neutral and reserved manner, which could be best characterized by an absence of social reinforcement feedback, such as smiling. For one-half of the interviewees, the interviewers followed an ambiguous-specific sequence; they started by asking two relatively ambiguous questions which were followed by two relatively specific ones. For the rest of the subjects the interviewers followed the reverse sequence, starting with the specific probes which were followed by the more ambiguous ones.

As in the previous study, interviewer ambiguity-specificity level had a highly significant effect on interviewees' productivity, with interviewees being more productive in response to ambiguous than to specific interviewer probes. This effect was independent of the interviewer warmth-reserve manipulation. However, the effect was significantly influenced by the order or sequence manipulation. The ambiguous interviewer questions were associated with significantly more productive interviewee responses than the specific interviewer probes irrespective of order or sequence, but the effect was greater in the ambiguous-specific sequence than in the specific-ambiguous sequence. The very same findings were obtained by Heselton [25], who investigated the effects of interviewer message ambiguity in a group of youngsters ranging in age from six to twelve. The results of that particular study strongly suggest that what happens at the beginning of an interview provides a set for the rest of the interview, at least as far as productivity is concerned. To begin the interview with a question that produces a relatively long response is likely to enhance the interviewee's productivity level throughout the interview. Evidence for such a "primacy" effect is also suggested by several other studies in which adult interviewees served as subjects.

While productivity is a variable which can be readily quantified and measured, the same cannot be said of self-disclosure, and hence the variety of ways in which it has been measured by different investigators. In this study self-disclosure was measured in the following manner. Each clause* within an interviewee's response was rated as either superficial or meaningful. Clauses that are factually descriptive or trivial, rather than

*Clause units were defined according to the criteria developed by Dollard and Auld [4].

evaluational or psychologically analytic or referring to affective experiences, are scored as superficial. A Superficiality Ratio is then obtained by dividing the number of superficial clauses in an interviewee's response by the total number of clauses. This index, then, is an inverse measure of self-disclosure, with a low score on this index indicating a high level of self-disclosure. Data on the reliability and validity of this index are presented elsewhere [78]. Interviewees' responses to the ambiguous interviewer probes were associated with a higher Superficiality Index, that is, with less self-disclosure, than their responses to the specific interviewer probes. This difference occurred in both topics (school experiences and family relations) but the difference was most pronounced in relation to the questions dealing with family relations. This interaction reflects the fact that the interviewer's specific questions in the family relations area elicited a very high level of self-disclosure, much more so than the interviewer's ambiguous questions in the same topical area. In fact, interviewee's self-disclosure level in response to the ambiguous questions in the family relations area was not significantly higher than their self-disclosure level to the ambiguous questions in the school experiences areas — which is inherently a more superficial topical area. One explanation for this finding is that ambiguous interviewer remarks, in contrast to specific ones, provide the interviewee with a greater latitude for avoiding and circumventing potentially embarrassing or anxiety-arousing information. There is less opportunity for marking time with superficial information when an interviewer "zeroes in" with a highly specific question in a sensitive area. This is analogous to the previous finding that ambiguous TAT cards tend to elicit fewer anxiety, and depression-related themes than TAT cards which are low in ambiguity.

A study by Pope and his associates [48] tried to validate the above findings, which were obtained in highly controlled interviews, within the context of a relatively more naturalistic setting. In this study, twenty-four psychiatric inpatients were each interviewed three times. Unlike as in the previous studies, the interviewer was not limited to questions from a prepared script. The only restriction placed upon him was that he limit his remarks to ambiguous questions in one interview and to specific remarks in another. He was free to mix his remarks in a third interview. Interviewees alternated between the various orders of the three types of interviews. The results of this study clearly confirmed the previous findings concerning the effects of interviewer message ambiguity on interviewee productivity and hesitation in speech. On the other hand, in this seminat-uralistic interview study with a patient population, the ambiguous interviews were associated with lower Superficiality Ratios, that is, with more self-disclosure, than the other two types of interviews, which represents a clear-cut reversal of previous findings. Perhaps the discrepancy is related

to the fact that in the seminaturalistic study the interviewers' questions focused on the patients' activities in the hospital — recreational and otherwise — a relatively neutral topic. It will be recalled that the inverse relationship between interviewer ambiguity and interviewee self-disclosure was attributed to the fact that ambiguous interviewer questions provide the interviewee with greater latitude to avoid discussing potentially embarrassing or anxiety-arousing material. There is no reason, then, to expect such an inverse relationship if the topic under discussion is a neutral one. On the other hand, this does not provide a rationale for obtaining a positive correlation between interviewer ambiguity and interviewee self-disclosure.

Although the positive correlation between interviewer ambiguity and interviewee productivity has been replicated in various subject populations, including a group of lower-class psychiatric outpatients and a group of schizophrenic patients [26], we need to test the limits of this relationship. In the studies discussed thus far even the highly ambiguous remarks were only relatively so, as compared to the specific interviewer probes. The most ambiguous interviewer question in these studies was: "Tell me something, anything that occurs to you about your family." Furthermore, the specific probes were selected from the very bottom of the scale, and were indeed highly specific. What would be the consequence, as far as interviewee productivity is concerned, of comparing even more highly ambiguous interviewer remarks, such as "Tell me anything that occurs to you," with interviewer probes of moderate ambiguity level? Would the more ambiguous questions still be associated with higher levels of interviewee productivity, or is there an optimum level of message ambiguity beyond which further ambiguity is likely to produce a decrease in interviewee's productivity level. Some support for the latter of the two options is provided by the results of a study conducted by Heller and his associates [22]. Interviewees, in a student group and in a patient group, were simply asked to talk about themselves, whereas others responded to moderately ambiguous questions that focused on a more circumscribed topic, such as family and work. The students were apparently more productive in the moderately structured than in the highly unstructured interviews, although the precise reverse relationship obtained in the patient group. Clearly, there is a need for further study of this issue.

Heller and his associates also looked at the effects of interviewer ambiguity level, or structure as they refer to this variable, on interviewee self-disclosure. The latter was assessed by means of two indices: number of self-references per 15 second intervals of speech, and number of problem statements per 15 second intervals of speech. By and large the moderately structured interviews were associated with higher levels of self-disclosure, when the latter was defined in terms of self-references. The

relationship between interviewer ambiguity and interviewee self-disclosure was much more complex, and differed for the two subject groups, when problem admission was used as an index of self-disclosure. Furthermore, interviewer warmth seemed to serve as a moderator variable* in the student group.

By way of summary, then, it is suggested that as far as the relationship between interviewer message ambiguity and interviewee productivity is concerned the research evidence is fairly consistent: within certain limits message ambiguity enhances interviewee productivity, and this is true across subject populations. Furthermore, this relationship is apparently fairly robust and is not readily attenuated by other variables. The relationship between interviewer message ambiguity and interviewee self-disclosure, on the other hand, is apparently influenced by a number of other variables, including topical focus and the nature of the relationship between the interviewer and the interviewee, and different results are obtained with university students than with patient populations.

RELATIONSHIP AMBIGUITY

Ambiguity or the lack thereof is not only relevant to the interviewer's messages but applies to various other aspects of the interview as well. This section focuses on ambiguity in the relationship between interviewer and interviewee and its effects on interviewee productivity, self-disclosure, and interviewee's nonverbal-vocal behavior. Ambiguity in the relationship is achieved if the interviewer refrains from either positive or negative feedback, that is, if he behaves in a thoroughly reserved and neutral manner.

A thoroughly neutral stance is, of course, what Freud advocated for psychoanalysts, on the premise that such a stance would facilitate the patient's free associations and transference. Carl Rogers [59] on the other hand, urged client-centered therapists to adopt a warm, friendly and accepting manner, which is presumably an essential prerequisite for constructive personality change. It should be pointed out that neither Freud nor Rogers was concerned with what is the most effective interviewing technique, in the sense of eliciting productive and personally meaningful interviewee responses. Most writers who have addressed themselves to

* A moderator variable is one which mediates the relationship between two other variables. In the present context, the student interviewees responded with more problem admissions to the unstructured than to the structured interviewer questions, but only if the interviewer was mostly warm and friendly, with the reverse pattern occurring when the interviewer was mostly reserved and neutral.

this specific issue seem to advocate a moderately warm and friendly demeanor on the part of the interviewer (for example, see chapter 21 and [82]). A careful review of the empirical research on this topic suggests that the reputed advantages of a friendly interviewer demeanor are by no means self-evident and, at the very least, are subject to a number of qualifications.

A series of studies by Heller and his associates are specifically concerned with the effects of interviewer warmth and friendliness on interview-relevant variables. In the first of these studies, Heller and his associates [23] attempted a rather strong manipulation of the warm-cold dimension.

In the warm or friendly condition, the interviewer was "sympathetic, friendly and considerate of the interviewee. He was supportive and helpful" [23:502]. In the cold condition, the interviewer displayed outright hostility to the interviewee. In this condition, the interviewer showed "disdain, disapproval and lack of appreciation for the interviewee's approach to the task" [23:502]. Prior to the interview the subjects listened to a tape in which a speaker discussed his difficulties with other members of his family and some unresolved sexual conflicts. This was followed by the experimental interview. The interviewer began the interview by asking the interviewee to compare himself with the speaker on the tape. The dependent variables were: interviewee speaking-time* and the following content-oriented categories: proportion of interviewee words during the last five minutes of the interview dealing with family relations, sexual relations, and the proportion of words describing personal problems and difficulties.

The strong manipulation of the cold-warm dimension had no significant effect on interviewee speaking time. The only significant main effect of the warm-cold manipulation was in relation to one of the content categories. Quite unexpectedly, subjects spoke more about their sexual difficulties when interviewed by hostile rather than by friendly interviewers.

In a subsequent study by Heller et al. (cited in [22]) positive, negative, and ambiguous interviewer feedback was presented to the interviewees so that it could be clearly understood and also under conditions of muffled speech. In the positive conditions the interviewers smiled and nodded as appropriate; in the negative conditions they frowned or shook their heads. In the ambiguous conditions the interviewers omitted all

* In Heller's studies interviewees are typically informed that one or more topics will be discussed for a specified period of time, and interviewee speaking time or talk time is defined as the proportion of that time used by the interviewee. Strictly speaking, then, speaking time in the Heller studies means usage time. In our studies, however, there is no time limit on the duration of interviewees' responses. The precise effect of these two types of response conditions on indices of interviewee productivity has not been determined.

nonverbal signs of approval or disapproval. The dependent variables were: interviewee productivity, defined as proportion of interviewee talk time, and interviewee self-disclosure, defined as number of self-references and number of problem statements per 15 second intervals. There were no advantages associated with positive interviewer feedback in the clear condition, and some disadvantages, in terms of reduced talk time and self-disclosure, in the muffled speech condition. However, when interviewees were divided into high- and low-problem admitters (on the basis of the Mooney Problem Checklist administered just prior to the interview), a significant interaction between checklist scores and interview condition emerged. The subjects who admitted to having more problems obtained higher talk-time scores and emitted more self-references in the ambiguous than in the positive interview conditions — whether the interviewer's speech was clear or muffled — with the exact reverse pattern characterizing the performance of those who admitted to fewer problems.

The results of yet another study by Heller and Jacobson (cited in [22]), further reinforce the proposition that the impact of interviewer warmth is moderated by interviewees' personality characteristics. In this study male and female subjects were interviewed by either a warm and friendly interviewer or by a reserved one, who, unlike those in the first study, refrained from making outright hostile remarks. Interviewer friendliness enhanced the speaking time, self-references, and problem references of independent male subjects, but had the opposite effect on dependent males. In the female group, interviewer friendliness facilitated speaking time and self-references regardless of interviewees' personality scores. In relation to problem references, the female interviewees demonstrated the same pattern as the male interviewees.

In yet another study, Heller and his associates used both college students and psychiatric patients as subjects (cited in [22;21–24]). In the patient group, interviewer warmth and friendliness increased interviewees' speaking time, problem admissions, and self-references, none of which was significantly affected in the student group. It is difficult, however, to determine the implications of this study for the effects of interviewer warmth, because the warm-cold manipulation was achieved by having the interviewer switch from a warm manner to a reserved one and back to a warm one, or from reserved to warm and back to reserved, all within a single half-hour interview. Such switching raises the issue of interviewees' sensitivity to short-term changes in the interviewer's behavior. It is difficult to determine how the interviewees in fact perceived the interviewer's behavior.

There is, however, a major problem with the studies by Heller and his associates, except the first, because in their latter studies, these investigators typically used both male and female interviewers. There is evi-

dence to suggest that gender composition moderates the effects of an interviewer's social reinforcement cues. Friendliness on the part of an interviewer may facilitate communication in same gender dyads, but have the reverse effect in opposite gender dyads [69]. In studies in which both males and females are used as interviewers, it is important to take this into account in the data analysis.

Another Laboratory, Other Findings.

We have now completed three major studies on the effects of interviewer warmth, and they will be presented in the sequence in which they were conducted. In the first of the series [55,56] thirty-two female nursing students were interviewed twice, once by a warm and once by a cold or reserved interviewer. The warm-cold manipulation was achieved by arousing in the interviewees contrasting expectations regarding the two interviews, and by programming the interviewer's behaviors to accord with the aroused expectation or set. During the warm interview, the interviewer smiled, nodded her head, and spoke warmly. During the cold interview, she spoke unsmilingly, did not nod her head, and kept her voice drab and cold. The interviewees' postinterview ratings indicate that even in the latter condition, the interviewer's behavior is best characterized as reserved and neutral rather than as outright negative or hostile. Two female interviewers alternated between the two interview conditions. The interviewees alternated between the order or sequence of the two conditions. The interview itself focused on two topical areas, family relations and school experiences, which were always presented in that order. Within each topical area, one half of the questions were moderately ambiguous, the others highly specific. The dependent variables were interview productivity, self-disclosure, as measured by the Superficiality Index, and a variety of verbal fluency indices.

The only clear-cut significant effect of the warm-cold manipulation was on interviewees' productivity levels, with interviewees being more productive in the warm than in the reserved interview condition. There were, however, several significant interaction effects which should be noted.

First, there was a significant interaction between the warm-cold manipulation and their sequence. Interviewees were more productive in the warm than in the cold interview only when the warm interview came first. When the cold interview came first, its inhibiting effect persisted into the second interview.

Second, interviewer warmth was a significant source of variance only when the interviewer asked ambiguous or open-ended questions, but not

when he asked relatively specific ones [55]. This finding is not especially surprising, since highly specific questions (for example, What kind of work does your father do?), by their very nature, provide the interviewee with only a limited range of response alternatives.

Third, there was a significant interaction between interviewer warmth and topical focus. The facilitating effect of interviewer warmth was less pronounced when he focused on interviewees' family relations than when he focused on their school experiences.* Perhaps interviewer warmth is most effective in facilitating interviewee productivity in relatively neutral and innocuous topical areas. It should be noted, however, that in this study there was a perfect confounding between topic and interview sequence, with the family relations topic always being taken up during the second half of the interview. Consequently, the interaction may in fact be between the warm-cold manipulation and interview sequence, thus suggesting that the warm-cold manipulation did not become effective until the interview was well on its way.

There was no evidence whatsoever for the hypothesis that interviewer warmth facilitates interviewee self-disclosure. There was, however, some borderline evidence that the warm-cold manipulation affected interviewees' verbal fluency, in that the subjects had longer response latencies in the cold or reserved interviews than in the warm interviews (which just missed the conventional significance level).

Another Study, Other Findings

The interpretation of the major finding of the previous study that interviewer warmth facilitates interviewee productivity, or that interviewer reserve inhibits interviewee productivity, is complicated by a methodological feature of that study. It will be recalled that the interviewees were forewarned that their interviewer would be either warm and friendly or cold and reserved. To be told that one's prospective interviewer is a cold and reserved individual may be disconcerting to some people, and its repercussions may have been responsible for the relatively low productivity level in the reserved interview conditions. Another experiment was, therefore, designed in which the interviewees' expectations and the interviewers' actual behavior were independently manipulated [64].

* The results changed when the productivity data, which contained extreme scores, were submitted to a logarithmic transformation. Interviewer warmth was no longer a significant source of variance in interviewees' productivity levels in the family relations area, and only of borderline significance in the school experiences area. The effect of the topical focus variable, independently and in interaction with the warm-cold manipulation, was not reported in the earlier publications because of its being confounded with sequence.

SUBJECTS AND PROCEDURES

The warm-cold manipulation in this study was achieved in a manner similar to that of the previous study. One group of subjects was given a warm set, that is, subjects were led to expect a warm interviewer, and the interviewer behaved in a manner consistent with interviewees' expectations (warm-warm condition).^{*} A second group of subjects was given a reserved set, and again the interviewer behaved in a manner consistent with subjects' expectations (reserved-reserved condition). In this study, there were two additional experimental conditions, in each of which the experimenter's behavior was opposite to that of interviewee's expectation. In one condition, subjects were given a reserved set and the interviewer behaved warmly (reserved-warm condition); in the other, subjects were given a warm set and the interviewer behaved in a reserved manner (warm-reserved condition). It should be noted that in these two conditions the interviewer was unaware of the fact that subjects were given incorrect sets. In this study, then, it was possible to assess the effects of warm versus reserved interviewee expectations and of warm and reserved interviewer behavior independently and in interaction with each other. The design of this study, however, was different from that of the preceding one, in that each subject was interviewed only once. One male interviewer interviewed thirty-two males and thirty-two females.

This experiment also included a manipulation of topical focus, with two interview questions focusing on a relatively intimate topic (interviewee's family relations) and two questions focusing on a relatively non-intimate topic (interviewee's school experiences). The sequence of the two topics was counterbalanced between subjects.

The major dependent variable was interviewee productivity. Additionally, for the male subjects of this study, it was possible to measure their within-response silent pauses (all pauses exceeding 300 msec). The average duration of these pauses was the actual index used in this study. Finally, after the completion of the interview, all interviewees responded to a questionnaire which was designed to yield the following: (1) an index of interviewee attraction to the interviewer; (2) an index of interviewee's perception of the interviewer's warmth-reserve; (3) an index of interviewee's anxiety level.

The interviewees, both male and female, rated the warm interviewer as warmer, were more attracted to him, and felt less anxious when inter-

^{*}The first word in the hyphenated sequence refers to the interviewee's expectations regarding the interviewer's behavior, while the second word refers to the interviewer's actual behavior. For example, "warm-warm" implies that the interviewees expected a warm interviewer and that the interviewer did in fact behave in a warm and friendly manner.

viewed by him than by the reserved interviewer. All these differences were highly significant. Furthermore, the warm set influenced subjects' perceptions and feelings, so that they perceived the interviewer as warmer and were more attracted to him in the warm-reserved condition than in the reserved-reserved condition. Interestingly enough the cold set, which might be conceived of as negative or unpleasant, did not have a corresponding negative effect on interviewees' ratings.

Unlike the results of the previous study, interviewer warmth did not significantly influence interviewees' productivity scores, although the interaction with interviewee gender was significant. Male interviewees were more productive in the warm interview conditions than in the reserved conditions, although this difference was only of borderline statistical significance. Moreover the difference was due to the interviewees' lower productivity level in the warm-reserved condition than in the warm-warm condition. The difference in productivity level between the warm-warm and reserved-reserved conditions, which is the crucial comparison as far as the effect of warmth per se is concerned, was clearly not significant. These data suggest that, at least as far as male interviewees are concerned, it is not interviewer warmth per se that facilitates interviewee productivity, nor is it the case that interviewer reserve per se has an inhibiting effect. Instead it would seem that interviewee productivity is inhibited if the interviewee expects a warm and friendly interviewer — which in the absence of other information may very well be the usual expectation — and he finds this expectation disconfirmed by a reserved and cold interviewer.

The productivity scores of the female interviewees indicate that they were significantly less productive in the warm interview conditions than in the neutral and reserved interview conditions. Considering the previous findings in our study [55], and in the Heller study (cited in [22]), that female interviewees were more productive when interviewed by warm rather than reserved interviewees, it is not unreasonable to attribute the reversal of this relationship in this study to the fact that the interviewer was a male. Perhaps warmth and friendliness on the part of a male interviewer, especially if somewhat exaggerated, which may have been the case in the present study, has seductive and threatening implications for female interviewees, and hence its inhibiting effect on their productivity.

Topic had a significant influence on interviewees' productivity scores, with both male and female interviewees speaking significantly less on the intimate than on the nonintimate topic, but it did not interact significantly with the other independent variables in this study.

Finally, it should be pointed out that interviewer warmth significantly influenced the male interviewees' average pause duration scores,

with briefer pauses characterizing their responses to a warm as opposed to a reserved interviewer. It will be recalled that in the previous study, interviewer warmth was associated with shorter response latencies. In another study, Pope and I [54] found a significant inverse relationship between the level of interviewee attraction to the interviewer — in this case female interviewees and a male interviewer — and a pausing index which combined interviewees' response latencies and their within-response silent pauses. A significant negative correlation between patients' attraction to their therapist and a measure of silent pauses in the patients' speech was also reported by Goldstein [16]. These findings suggest that interviewer warmth-reserve may have a more direct and clear-cut influence on the temporal characteristics of the interviewees' speech than on their productivity levels. This, then, was the focus of our next study.

Another Study—Similar Findings

The procedure of the third study [72,73] on interviewer warmth was essentially the same as in the previous one. There was one female interviewer, with fourteen female interviewees in each of the four interview conditions (warm-warm, reserved-warm, reserved-reserved, warm-reserved).

In addition to interviewee productivity level, the study included the following temporal indices: response latency or reaction time (RT), average pause duration, pause frequency ratio (number of pauses per response divided by the summed duration of all vocalizations) and speech rate (number of words per response divided by the total response duration). The postinterview questionnaire included the three scales which were used in the previous study and items designed to assess interviewees' perception of the interviewer's competence and a self-disclosure inventory.

Interviewer warmth was a highly significant source of variance in all the rating scales except those concerned with anxiety. Subjects in the warm conditions rated their interviewer as warmer, were more attracted to her, and rated her as more competent than did subjects in the reserved conditions. Furthermore, in relation to all these ratings, the experimenter's discrepant preinterview set influenced interviewees' ratings in the direction of the set. Unlike the results of the previous study, however, the warm and the reserved sets had pretty much the same effect on interviewees' ratings. It should be noted that in this study, unlike the previous experiment, interviewer warmth was not a significant source of variance in interviewees' anxiety level. Perhaps the most significant finding as far

as the rating data are concerned is that the warmth manipulation had a strong effect on the interviewees' perceptions of interviewer competence. This certainly casts doubt on previous assumptions of orthogonality between these two dimensions [56]. The results of the study indicate that from the interviewees' point of view, a reserved and neutral manner compromises the interviewer's competence.

Interviewer warmth was a significant source of variance in the interviewees' average pause duration scores and speech rates and a near significant source of variance in relation to their pause frequency ratios. Most important, the differences between interviewees' scores in the warm-warm and the reserved-reserved conditions in relation to all the indices were highly significant.

Although interviewer warmth did not account for a significant proportion of the variance in the interviewees' RT scores, the interaction between interviewer warmth and sequence did, reflecting the fact that during the first part of the interview subjects did respond with significantly shorter RTs in the warm than in the cold conditions. However, this difference was not sustained during the second half of the interview.

Interviewer warmth was a significant source of variance in interviewee productivity scores, but this was primarily because of the difference between the reserved-warm and the warm-reserved conditions. The difference between the interviewees' productivity levels in the warm-warm and the reserved-reserved conditions, which is the crucial comparison as far as the effect of interviewer warmth per se is concerned, did not even approach significance. In other words, while there is no support for the hypothesis that interviewer warmth per se facilitates productivity, or that interviewer reserve per se inhibits productivity, there is some indication that the combination of interviewer reserve and the disconfirmation of a positive expectation is associated with a reduction in productivity level. There was one other significant source of variance as far as interviewees' productivity scores are concerned — the interaction between sequence and the disconfirmation of interviewees' expectations. In both the warm-warm condition and the reserved-reserve condition, interviewees' productivity scores increased from the first to the second half of the interview. However, no such increase occurred in the two conditions in which interviewees' expectations regarding their interviewer's behavior was disconfirmed. In this study, then, the inhibiting effect of disconfirming interviewees' expectations did not become apparent until the latter part of the interview.

Finally, interviewer warmth had only a borderline effect on interviewees' self-disclosure scores, with greater readiness to discuss intimate issues with a warm than with a reserved interviewer.

EFFECTS OF INTERVIEWER WARMTH ON INTERVIEWEE BEHAVIOR

The weight of the evidence, as reflected in a series of studies conducted in two independent laboratories, fails to support the widely held assumption among practicing clinicians that interviewer warmth is the key to interviewee productivity and self-disclosure.

There is ample evidence in the studies conducted in both laboratories that both male and female interviewees prefer warm and friendly interviewers over neutral and reserved ones. Interviewees are clearly more attracted to and like the former more than they do the latter. Perhaps it is this fact that has given rise to the general assumption that interviewer warmth is also more effective than interviewer neutrality in eliciting productive and meaningful interviewee responses. However, the results of our second and third experiment on the effects of interviewer warmth indicate that there is little if any correspondence between the level of interviewee-interviewer attraction in a particular experimental condition and interviewees' productivity levels in that condition. The same findings were obtained by Heller and his associates in their studies. In the Pope and Siegman [55] study the correlation (r) between interviewees' attraction to interviewer scores and their productivity scores was 0.054, clearly not significant.

At first glance, these findings seem to be discordant with general social reinforcement theory, which has been invoked in order to justify the superiority of a warm and friendly interviewer style over a neutral and reserved one. It is argued that, according to social reinforcement theory, interviewees should want to prolong exchanges that are pleasant and rewarding and to terminate those that are unpleasant and painful, either of which they can achieve by manipulating their productivity level. In response it can be argued that reinforcement, properly understood, is the rewarding of an operant response. Therefore, for an increase in interviewee productivity to occur, it would be necessary that the social reinforcers be dispensed on a contingent basis, that is, only after the occurrence of productive interviewee responses. The indiscriminate, noncontingent dispensation of social reinforcers on the part of an interviewer may very well create a general ambience of friendliness and warmth — and our studies certainly indicate that they do — but there is no basis in reinforcement theory for the conclusion that such ambience will necessarily enhance interviewee productivity.

Later in this chapter it will be shown that even the "reinforcement"*

* The quotation marks around the word *reinforcement* indicate that in this sentence the term is used in its colloquial sense, that is, the rewarding of a response, rather than in its narrow technical sense as used by operant psychologists.

of discrete interviewee response classes is not necessarily associated with an increase in the frequency of the reinforced response class, if the reinforcement takes the form of explicit interviewer approval or agreement with what the interviewee has been saying. In fact, such explicit statements of approval and agreement on the part of an interviewer seem to have an inhibiting effect on the interviewee, in contrast to disagreeing interviewer statements which seem to elicit productive interviewee responses. These findings are most parsimoniously explained if we assume that people have a need to appear rational and logical, which motivates them to defend themselves when challenged by others. To some interviewees a reserved and neutral interviewer demeanor may be interpreted as a lack of approval or agreement with what they have been saying, and hence as a challenge to justify their position. This, then, could account for a positive correlation between interviewer reserve and interviewee productivity whenever such a relationship is noted.

Some of the studies cited earlier suggest that the relationship between interviewer warmth-reserve and interviewee productivity is moderated by interviewees' gender, with males more likely than females to respond productively to a reserved interviewer, and by interviewees' personality characteristics (for example, dependency and scores on the Mooney Problem Checklist). Much more research, however, needs to be done before it will be possible to identify more precisely the moderating effects of demographic and personality variables on the relationship between interviewer warmth and interviewee productivity.

Finally, it should be pointed out that the widely held assumption among clinicians that a reserved and neutral interviewer demeanor inhibits interviewee productivity may have a basis in fact. There is clear-cut evidence in our second warm-cold experiment, and borderline evidence in the third experiment, that expecting a warm and friendly interviewer and finding him reserved and neutral instead, does have an inhibiting effect on interviewee's productivity level. On the basis of data obtained from a questionnaire study, we know that as a rule interviewees do expect their interviewers to be warm and accepting. The interviewees' low productivity level in response to neutral and reserved interviewers probably reflects not so much the effect of interviewer reserve *per se*, but rather the interviewees' disappointment in having the expectation of a warm and accepting interviewer disconfirmed.

In contrast to the apparent lack of a clear-cut covariance between interviewees' attraction and productivity scores, there seems to be a definite relationship between attraction and verbal fluency. The greater the interviewees' attraction to their interviewer, the shorter their silent pauses and the faster their speech rate. Interviewer warmth is similarly associated

with shorter silent pauses and a faster speech rate in interviewees' response. What is the meaning of this inverse relationship between interpersonal attraction and silent pauses? Traditionally, an interviewee's silent pauses, certainly the relatively long silent pauses of 2 seconds and over, have been interpreted primarily within a motivational-emotional framework as signs of anxiety or of resistance. This approach is characteristic not only of clinicians but of researchers as well (e.g. [36]). However, for a number of years considerable evidence has been accumulating to the effect that silent pauses are indicative of information processing that is taking place at the time of the pausing [15]. Siegman [71] has argued that the same is also true of other hesitation phenomena such as filled pauses (ahs and similar expressions), and even of speech disturbances or disruptions. Moreover, a case can be made for the proposition that this cognitive, information-processing interpretation of silent pauses provides a parsimonious explanation for the various findings that have been reported in literature in relation to silent pausing [72]. As far as the inverse relationship between interpersonal attraction and pausing is concerned, it is suggested that it too is cognitively mediated. Interviewees who do not like their interviewer are likely to be more guarded in what they say, and to engage in more self-monitoring, than those who feel at ease with their interviewer. The same would, of course, apply to other types of interpersonal interactions. On the other hand, under certain circumstances — for example, in male-female dyads — attraction may lead to greater self-monitoring, and hence to more rather than less silent pausing. A major advantage of these vocal nonverbal indices is that they allow us to track or monitor changes in interpersonal attraction over time. Some experimental manipulations may produce only a temporary change in the interviewees' feelings of attraction, while others may produce "sleeper effects" which do not become manifest until some time later. All this, however, can be ascertained by means of a careful monitoring of moment-to-moment changes in these vocal indices of interpersonal attraction.

Another finding of interest is that in one of our studies, the interviewees perceived the reserved and neutral interviewer as less competent than the warm and friendly one. In an earlier study [56], we found that interviewees' ratings of interviewer warmth were independent of interviewees' ratings of interviewer competence. This has been confirmed in subsequent studies. It should be pointed out that in all these studies the interviewers were at least minimally friendly. Although their behavior varied, it could never be characterized as consistently reserved, and certainly not as clearly unfriendly. The finding in one of our cold-warm studies that the reserved interviewers were not only disliked but also rated as incompetent suggests a lack of symmetry in how interviewees respond to

friendly versus reserved interviewers. An interviewer's friendliness is reciprocated in kind only — he is more liked — but it does not affect the interviewee's perception of the interviewer's competence. On the other hand, lack of interviewer friendliness is not only reciprocated in kind — he is disliked — but may also cause the interviewee to challenge the interviewer's competence or status.

By now it should be obvious that the effects of interviewer warmth or reserve on interviewees' behavior are fairly specific, facilitating some behaviors and interfering with others, even though these different behaviors may be related to each other in terms of some higher-level dimension. The fact that interviewees are more attracted to a warm interviewer than to a neutral one does not allow us to reach any conclusions as to the effects of interviewer warmth on interviewee productivity, on self-disclosure, or on verbal fluency. Each of these relationships must be investigated in its own right.

INTERVIEWER STATUS AND THE FLOW OF COMMUNICATION

Factor-analytic studies of diverse social relationships, such as parent-child, husband-wife, employer-employee, have consistently obtained two basic dimensions: power or status and love or warmth [12]. Following these findings, we proceeded to factor-analyze the interviewees' perceptions of interviewer behavior. In one of our first experimental studies of the initial interview, the subjects were asked to rate their interviewer on a number of bipolar adjective scales. These ratings were then intercorrelated and factor-analyzed. The results suggested two factors, which were labeled warmth and competence, or status. The positive pole of the first factor describes an interviewer perceived as warm, sympathetic, understanding and pleasant. The positive pole of the second factor describes an interviewer perceived as intelligent, strong, comfortable, competent, and confident (Table 19.2). It should be noted that these are the same two factors that have emerged from the factor-analytic studies of other types of interpersonal relationships.

Although experimental findings are in short supply, there is a widely shared body of opinion that people are more willing to communicate with an interviewer whom they perceive as a competent expert rather than an unskilled novice. Maccoby and Maccoby emphasize the role of status in the interview. They remark: "In general we know that people are more anxious to communicate to those above them in the hierarchy than to those below them . . . While upper-class respondents feel they have little to gain by expressing their opinions to an interviewer, lower-class respon-

Table 19.2
 ROTATED FACTOR MATRIX (ORTHOGONAL) OF
 INTERVIEWEES' POSTINTERVIEW RATING OF THEIR
 INTERVIEWER

<i>Variables</i>	<i>I</i>	<i>II</i>	<i>h²</i>
Intelligent — unintelligent	-0.18	0.47	0.25
Warm — cold	-0.72	0.11	0.53
Strong — weak	-0.01	0.43	0.19
Sympathetic — unsympathetic	-0.61	-0.13	0.39
Accepting — rejecting	-0.52	0.32	0.37
Active — passive	-0.22	0.16	0.73
Understanding — lacks understanding	-0.73	0.09	0.54
Pleasant — unpleasant	-0.61	0.22	0.42
Tense — relaxed	0.14	-0.39	0.17
Slow — fast	0.04	-0.18	0.03
Comfortable — uncomfortable	0.03	0.64	0.41
Competent — incompetent	-0.40	0.62	0.54
Confident — lacks confidence	-0.01	0.53	0.28
<i>a</i> ²	2.33	1.88	4.21
Total variance (%)	10.0	21.5	31.5

Factor analysis by the principal axis method with varimax rotation.

dents are pleased to be consulted. The content of the communication, of course, will be affected by the status relationships: The person of lower status will be motivated to present himself in a favorable light to someone who might be in a position to influence his future" [35:462].

From this quotation it is apparent that there is some hazard in attributing too much generality to the dimension of status as a facilitator of interviewee communication. The interviewee may, indeed, be more willing to cooperate with a high- rather than a low-status person. But he may, at the same time, be more guarded, more concerned with making a good impression. If the content of what he is willing to communicate is likely to be affected by the status of the interviewer, it is to be expected that the relevance to the interviewee of the context in which the status differential occurs will be an important factor. Thus a person from a slum area in the inner city who is interviewed by a graduate student from a school of social work will be either reinforced or inhibited in different content areas from those of a graduate student interviewed by a senior member of the faculty. This distinction would probably obtain even if both interviewers played no part in the power structure within which the interviewee finds himself.

There is yet another way of conceptualizing the potential effects of

interviewer status on interviewee speech. It may be that people are likely to adopt a more formal style when addressing a high-status person than when conversing with a peer. If so, there is yet another reason for expecting people to speak more carefully, with more hesitations and perhaps with more silent pauses, when addressing high-status as opposed to low-status persons. Furthermore, within the context of the interview, perhaps one can expect interviewees to speak more freely about intimate matters to a high-status interviewer than to a low-status one.

The results of a study [56,70] that addressed itself to status concerns provide at least partial support for the hypothesized relationships. In this study, thirty-two female nursing students were interviewed twice, once by someone introduced as a senior professor and experienced interviewer and once by someone introduced as a novice. Two interviewers alternated between the high-status and the low-status role. In order to protect the credibility of the status manipulation, the two interviewers — of different ages — conducted the interviews from behind a screen. The subjects never saw their interviewers. The manipulation also provided a plausible cover story, namely, that the purpose of the study was to investigate the effects of the screen on the interviewees' behavior. The interview itself was divided into two segments, one focusing on interviewee's family relations, the other on interviewee's school experiences. Of the two syntactic variables presumably related to speech formality, that is, the subordinate clause ratio and the passive-verb ratio, only the latter was significantly affected by interviewer status. As expected, the interviewees showed a higher passive-verb ratio when responding to the high-status interviewer than to the low-status one. Interviewees also responded with more productivity, with significantly shorter response latencies and higher silence quotients to the high-status than to the low-status interviewer, suggesting that in addressing a high-status person, one is under pressure to respond promptly, but that the response itself is associated with more written-response pausing, perhaps because of a more formal style. A further analysis indicated that these effects did not occur across the board in the two interview segments. Rather, they were limited to the segment focusing on the interviewee's school experiences, perhaps because it was to this segment that the interviewer's status as a professor was most salient. There was one other significant finding in this study: the high-status interviewer elicited significantly fewer speech disruptions in the family relations topic than the low-status interviewer, suggesting that interviewees found it less anxiety-arousing to discuss this topic with the high-status interviewer. There was no significant relationship between interviewer status and interviewee self-disclosure.

On the whole, however, the impact of interviewer status on inter-

viewees' speech was fairly minimal. In fact, its impact was less pronounced than the impact of the topical manipulation in this study. Perhaps in an interview situation, any interviewer, whether a professor or a student, is in a dominant position vis-à-vis the interviewee. In other words, perhaps the crucial factor is not one's social status, nor even one's experience, but one's role in a specific dyadic interaction.

Seminaturalistic Studies

The finding that, contrary to a widely held opinion, interviewer status and experience do not have a dramatically facilitating effect on interviewee productivity has now been confirmed in a series of seminaturalistic studies by Pope and his associates [50,51]. In the first of the series the authors compared a group of experienced professionals with two groups of novices, all of whom conducted initial interviews. The novices were sophomore students majoring in psychology and had been admitted into an undergraduate program for training baccalaureate level mental health workers. Their training had not yet begun at the time of the study. The experienced professionals were staff psychiatrists and third-year psychiatric residents in a private psychiatric hospital. In these studies, as in the previously cited experimental study, interviewer status and experience had no facilitating effect on interviewee productivity and self-disclosure, as measured by the Superficiality Index. There were, however, significant differences in the interviewees' (college students) perceptions of the two categories of interviewers. Not unexpectedly, the experts were perceived as more competent and relaxed than the novice interviewers. Perhaps these perceptions were influenced by the higher level of speech disruptions, as measured by Mahl's [36] SDR, which characterized the novices' as contrasted to the professionals' speech. On the other hand, the novices were rated as more sympathetic, accepting, and sensitive than the professionals. Pope and his colleagues conclude that the greater skill of the professionals is balanced by the greater social proximity of the novices, and hence the failure to find any differences in interviewees' productivity and self-disclosure levels.

Pope and his associates [50] proceeded to monitor the two novice groups over a three-year training period. At the end of this period, the trainees had increased their interviewing skills, which were now rated as equal to those of the professionals, and had lost none of their advantage in terms of social proximity — at least as reflected in the interviewees' ratings of these interviewers. At that time, then, the trainees had an edge over the professionals, but it was not manifested in greater interviewee productivity or self-disclosure, as measured by the Superficiality Index.

THE ROLE OF NONVERBAL CUES

Psychodynamically oriented psychotherapists were among the first to recognize the significance of nonverbal cues, especially vocal nonverbal cues, such as voice intensity, rate of speech, and silent pauses in human communication. A major reason for their sensitivity to such cues is probably the fact that these therapists are frequently less interested in the objective referents of their patients' communications than in the clues which they provide for changes in their patients' affective states, especially anxiety, depression, and anger. Sullivan's statement is a particularly apt example of the importance he assigned to vocal nonverbal cues:

The beginning of my definition of the psychiatric interview states that such an interview is a situation of primarily vocal communication, not verbal communication alone . . . if consideration is given to the nonverbal but nonetheless primarily vocal aspects of the exchange, it is actually feasible to make some sort of crude formulation of many people in from an hour and a half to, let us say, six hours of serious discourse . . . Much attention may profitably be paid to the telltale aspects of intonation, rate of speech, difficulty in enunciation, and so on [81:5].

There is yet another reason for concern with nonverbal behavior in the interview, which involves the validity of a client's responses. There are many factors that tend to reduce the validity of an interviewee's responses — not the least of which is the client's tendency to suppress and distort material that may present him in an undesirable light. In other words, interview responses are subject to the social desirability response bias and to other response biases which are so common in questionnaire responses. Interviewers have, therefore, been alert for nonverbal correlates of such biases, although systematic research on this topic is rather meager. Studies on deliberate deception and their nonverbal correlates, both vocal and in terms of body movements and gestures, have been reported by Ekman and his associates [6,7]. In our laboratory, the focus has been on the vocal cues which are associated with the discussion of intimate and potentially embarrassing material.

Anxiety and Silent Pausing

One category of vocal nonverbal cues to which clinicians engaged in interviewing or psychotherapy have been especially attentive includes silent pauses and other temporal aspects of speech (for example, speech rate). Silent pauses, certainly the relatively long silent pauses of 3 seconds and more, are typically interpreted within a motivational-affective framework,

that is, as direct manifestations of anxiety, or as manifestations of anxiety-related resistance.

One of the first to investigate the relationship between anxiety and silent pauses empirically was George Mahl [36]. His working assumption was that anxiety has a disruptive effect on the normal flow of speech.

Empirically, two of the many behavioral attributes of speech in the interview that are useful to the therapist in assessing anxiety in the patient are: (a) disturbances in speech called "jumbled," "confused," or "flustered" speech, and (b) hesitancies and longer silences by the patient when he is free and motivated to talk. Theoretically, silence (and perhaps speech disturbance) may be regarded as a defense motivated by anxiety, evoked by ideational events or by the nature of the interpersonal relation. Speech disturbances and short hesitancies may also be conceived as predominantly indirect linguistic consequences of anxiety that do not have the instrumental function of reducing anxiety. This notion is based on the assumption that one effect of anxiety, regardless of its source, is to disrupt all complicated ongoing behavior, irrespective of its behavioral relation to the source of the anxiety. Here, speech is merely an excellent instance of such complex behavior susceptible to the disruptive effect of concurrent anxiety. [36:1-2].

In this study, Mahl [36] divided a series of therapeutic interviews with a single patient into high-anxiety, high-conflict versus low-anxiety, low-conflict phases and found that the former were associated with significantly longer silent pauses and significantly more speech disruptions. The positive association between situational anxiety arousal and speech disruption has since been confirmed in many studies, with only a single negative finding (for a review, see Siegman [70]). On the other hand, two experiments which appeared soon after Mahl's interview study cast some doubt on Mahl's conclusion that anxiety arousal is associated with an increase in silent pauses and clearly indicated the need for further research of this question. In these studies, Kanfer [28,29] administered electric shocks, preceded by a tone, to subjects who were instructed to free associate. Subjects showed an increase in posttone verbal rate and a decrease in postshock verbal rate, suggesting that anxiety arousal, which presumably followed the auditory warning signal, had an accelerating effect on subjects' verbal rate.

In the Siegman and Pope studies [70,77,78], the primary interest was on silent pauses and other temporal aspects of speech encoding within the context of the initial interview; experimental analogues of such interviews were used to investigate the relationship between anxiety arousal and speech. Interviewees' anxiety level was manipulated by means of two interview topics which differed in their anxiety-arousing potential. Interviewees were selected on the basis of a preinterview questionnaire so that

questions focusing on their family relations would be more anxiety provoking for them than questions focusing on their school experiences. A postinterview questionnaire indicated that this objective was in fact achieved, although it was also clear that the topical manipulation produced only mild to moderate anxiety levels. The subjects were fifty female nursing students, all of whom were interviewed by a male interviewer who asked a set of eight prearranged questions in which the two topics were counterbalanced in an A-B-B-A design. The dependent variables were: *silence quotient*, which was obtained by summing all silent pauses 3 seconds and over in a response and dividing that by the total duration of the response; *reaction time*, defined as the silent interval between the last word of the interviewer's question and the first word of the interviewee's response; and *speech rate*, which was obtained by dividing the total number of words in an interviewee's response by its total duration in seconds.

An analysis of the results showed that the anxiety-arousing topic, in contrast to the neutral one, was associated with a lower silence quotient, a shorter reaction time, and a higher speech rate. The difference in relation to reaction time became clearly significant when the analysis was limited to interviewees whose responses to each of the questions contained at least twenty-five words [77]. In this analysis, the anxiety-arousing topic was also associated with a lower filled-pauses ratio (ahs and similar expressions) than the neutral topic. This finding that anxiety-arousal reduces silent pauses and accelerates speech rate — which is clearly at odds with Mahl's [36] finding, has been confirmed in a number of other interview studies [3,9].

One criticism that can be directed at this type of interview study is that subjects' anxiety arousal was achieved via topical manipulation, as a result of which one cannot be certain that the findings reflect variations in anxiety arousal per se and not topical focus. This criticism, however, does not apply to the Kanfer studies [28,29], in which the anticipation of electric shock, rather than topical focus, was used to manipulate subjects' anxiety level. Furthermore, in the Siegman and Pope study, the interviewees were administered, prior to the interview, Bendig's shortened version of the Taylor Manifest Anxiety Scale (MAS), a measure of trait or predispositional anxiety. The correlation (r) between interviewees' MAS scores, on the one hand, and their reaction time, silence quotient, filled pauses ratio, and speech rate scores, on the other, were -0.14 , -0.15 , -0.24 ($0.05 > p < 0.10$) and 0.27 ($p = < 0.05$), respectively. Trait anxiety, too, seems to be associated with an acceleration rather than a slowing down of speech and this finding, unlike those of the experimental studies, cannot be explained away on the basis of its being confounded with topical focus.

That anxiety arousal seems to accelerate rather than to slow down speech can be readily understood if we conceptualize anxiety in terms of drive, as has been done by Spence and his associates [80,83]. It should be pointed out, however, that within the Hullian framework, whether anxiety arousal facilitates learning — be it conditioning or serial learning — or interferes with it, is, among others, a function of the nature of the task. The same level of anxiety arousal that facilitates simple learning — tasks in which the dominant response tendency is also the correct one — is likely to interfere with complex learning — tasks which elicit competing response tendencies [43,61,83]. By the same token, the effects of anxiety arousal and of stress on speech tempo should also be a function of the difficulty of the task. The same level of anxiety arousal that accelerates highly habituated speech sequences or “automatic speech,” as it is referred to by Goldman-Eisler [15], and which is likely to occur when discussing a familiar topic or object, will slow down speech which requires complex decision making, for example, when responding to a difficult exam question.

Strangely enough, most of the early studies investigating the effects of anxiety arousal on speech have ignored the role of task variables. However, we are now carefully looking at the effects of anxiety arousal and stress on the temporal aspects of speech as a function of task difficulty. The results of one recent study [68] showed that high test-anxiety scorers obtained higher speech rates than low test-anxiety scorers when they were asked to describe a series of *New Yorker* cartoons, which is presumably a simple task, but obtained significantly lower speech rates when asked to formulate the meaning of these same cartoons, which is presumably a complex task. These findings are clearly consistent with the hypothesis derived from a Hullian drive approach to anxiety.

THE INVERTED U HYPOTHESIS

In discussing the energizing-facilitating effects of arousal on behavior, a number of authors have argued that this effect is likely to reach an asymptote with increasing levels of arousal, and that eventually it reverses itself [5,20].

In a review of the literature by Murray [44] on the effects of anxiety arousal on speech, including silent pauses and speech rate, the author invokes the inverted *U* hypothesis in order to reconcile what he feels are conflicting results. Murray’s hypothesis, that even if mild and moderate levels of anxiety arousal tend to accelerate speech, very high levels of anxiety arousal are likely to have the opposite effect, is not only consistent with everyday experience but also makes theoretical sense. It is, however, a hypothesis that is difficult to test empirically. It is difficult to calibrate

levels of anxiety arousal and to identify in advance precisely which anxiety levels will produce a facilitating effect and which will produce the reverse effect. Failure to obtain the hypothesized asymptote or reversal in any particular study can always be attributed, *post hoc*, to insufficient arousal.

Perhaps the most clear-cut evidence in favor of the inverted *U* hypothesis comes from a study by Fenz and Epstein [11] in which the authors obtained stories in response to TAT-like stimulus cards from a group of novice parachutists on their jumping day and, by way of control, on a nonjumping day. As an additional control, they included a group of nonparachutists. Subjects always responded to three types of cards: no relevance to parachute jumping, low relevance to jumping, and high relevance to jumping. The reaction-time data clearly suggest that anxiety arousal had an activating effect on response latency. Conditions which can be assumed to have aroused mild to moderate anxiety levels were associated with a decrease in reaction time. On the other hand, the one condition which probably aroused very high anxiety levels, namely, the high relevance cards on the jumping day, was associated with a steep increase in reaction time. Also, pauses in the parachutists' stories showed a *U* shaped activation effect. There were no parallel differences in the control group. By and large, then, the results of the Fenz and Epstein study provide fairly strong support for the inverted *U* hypothesis, as far as anxiety and temporal indices of speech are concerned.

One study's results, at least at first glance, appear to be clearly inconsistent with the inverted *U* hypothesis. In this study [49], six psychiatric, hospitalized patients spoke, each morning for the entire period of their hospitalization, into a tape recorder, describing for about ten minutes any of their experiences during the preceding day that they chose to discuss. The patients were also rated each day by a team of trained nurses on a number of manifest anxiety scales. The speech samples recorded during each patient's eight most anxious and eight least anxious days were compared. It should be noted that all patients had psychosomatic diagnoses and that occasionally they all manifested extreme anxiety as well as stretches of calm and relaxed behavior. Speech samples recorded during subjects' high anxious days, in contrast to speech samples recorded during their low anxious days, were associated with lower silence quotients and a faster speech rate (this study did not yield reaction time scores). These findings, then, suggest that even high anxiety arousal — there is little doubt that during the high anxiety days these patients were very anxious indeed — is associated with a higher speech rate, owing to a reduction in long pauses. But even this finding can be reconciled with the inverted *U* hypothesis, provided it is limited to complex speaking tasks.

What about silent pauses and hesitant speech that occur not as a direct manifestation of anxiety arousal but as a manifestation of defensiveness or resistance? This, of course, is a distinct possibility. Intimate and potentially embarrassing interviewer questions, even if they do not arouse high anxiety levels, do slow down on interviewee's verbal fluency.

Vocal Correlates of Topical Intimacy

The major objective of a recent study in our laboratory [79] was to determine the effect of relatively intimate versus relatively nonintimate interviewer probes on some vocal — primarily temporal — aspects of interviewees' responses. The underlying assumption of this study was that the highly intimate interviewer questions are likely to arouse interviewee resistance and defensiveness, and that the results of this study, if any, would provide us with a set of nonverbal vocal cues of interviewee defensiveness.

The interview (see Table 19.3) consisted of nine questions with the first question always being: Tell me something about your family. The remaining eight questions were divided among four topics (father, mother, self, and sexual experiences), with one personal or intimate question and one impersonal or relatively neutral question in each of the topics. The sequence of the two types of questions was alternated between subjects. The first question provided the interviewees with a brief adaptation period. Only subjects' responses to the remaining eight questions were analyzed.

The interviewers were three male and three female graduate students in psychology, each of whom interviewed six male and six female undergraduate students who volunteered for an interview study. The interviewers had all taken a course in interviewing techniques and were especially trained for this particular interview.

The dependent variables were: RT, average pause duration and productivity, which in this study was defined as the mean summed duration of interviewee's vocalizations in response to the interviewer's questions. This measure has been found to correlate very highly with the more traditional measures of productivity, such as number of words or number of clause units per response. One other measure is the PC_v/PC_p ratio. It is based on automatically measured sound-silence sequences, and is an adequate estimate of speech rate [8,73].

The design of this study also made it possible to assess the effects of interviewer-interviewee gender composition on interviewee productivity and on indices of defensiveness and resistance, should such emerge. Clearly, it is important to know whether certain interviewer-interviewee

Table 19.3
THE INTERVIEW SCHEDULE IN THE STUDY ON TOPICAL
INTIMACY

<i>Items</i>	<i>Intimacy</i>
1. Tell me as much as you can about your family.	—
2. What aspects of personality characteristics of your father do you like best?	low
3. What aspects and personality characteristics of your father may indicate maladjustment?	high
4. What aspects and personality characteristics of your mother do you like best?	low
5. What aspects and personality characteristics of your mother may indicate maladjustment?	high
6. What do you feel best about and proudest of in your past?	low
7. What do you feel the guiltiest about and ashamed of in your past?	high
8. How do you feel about sex education in the schools?	low
9. How can you tell when you are becoming sexually aroused?	high

gender compositions are more facilitative of communication within interview than others.

RESULTS. Intimacy level was a highly significant source of variance in relation to all the dependent variables ($p < 0.0001$), with interviewees being less productive and responding with longer RTs, longer within-response silent pauses, and slower speech rates to the intimate than to the nonintimate interviewer questions. It is of interest to note that of all the interviewer variables which we have looked at, none has emerged as such a potent source of variance in relation to so many interviewee speech variables as did intimacy level. It is suggested that intimate and potentially embarrassing interviewer questions present the interviewee with difficult decisions as to what to say: what to include and what to exclude and how to phrase what is not censored. In other words, the defensiveness associated with intimate interviewer questions is also conceptualized in terms of cognitive decision making.

There were also a number of significant interactions. Thus, the interaction between interviewer intimacy and interviewee gender was significant in relation to productivity, RT, and the speech-rate index. The interactions were such that the impact of asking intimate questions was greater for the female than for the male interviewees, independent of the interviewer's gender. In relation to within-response silent pausing, however, the impact of the intimacy manipulation was least apparent in relation to the female interviewees interviewed by female interviewers. In

fact, in this group there was no significant difference between the two types of interviewer questions. This is reflected in the significant triple interaction between interviewer intimacy level, interviewer gender, and interviewee gender.

To the extent that within-response silent pausing is an index of defensiveness provoked by the intimate interviewer probes, our findings suggest that such probes arouse the least defensiveness in the female-female dyads. Also using within-response pausing as an index of defensiveness, the findings suggest that the interviewees felt more comfortable talking about their parents when they were paired with a like-gender interviewer than when they were paired with an opposite-gender interviewer. Males felt more comfortable talking about their fathers and females felt more comfortable talking about their mothers. Whatever their explanation, these findings provide some basis for a rational approach to interviewer-interviewee gender pairing, an issue to which relatively little attention has been paid in the past.

We are now in a position to give a more complete answer to the question: What is the effect of anxiety arousal on interviewee silent pausing or on other temporal indices of hesitant speech? The answer must be that anxiety arousal *per se* reduces silent pauses and has an accelerating effect on speech, unless the speaker's task is a difficult one that involves complex decision making or the interviewee responds to the anxiety with defensiveness. Anxiety, then, can accelerate speech but it can also have the opposite effect. More important, the occurrence of long silent pauses in interviewees' speech is not necessarily an indication of anxiety arousal, but rather of cognitive decision making.

The Effects of Vocal Cues in Interviewer's Speech on Interviewee's Behavior

In the discussion thus far the focus has been on vocal cues in the interviewee's speech as indicators of the interviewee's affective state, or of the interviewee's attitudes about the interviewer, or of the interviewee's cognitive processes. By the same token silent pauses, speech disruptions, and other vocal cues in an interviewer's speech will be interpreted by their interviewees, whether these interpretations are valid or not. The results of a study by Milmoie and associates [42] suggest the powerful influence that extralinguistic cues in an interviewer's speech can have on the interviewee's behavior. In this study the authors were able to postdict doctors' success in referring alcoholic patients for treatment from the level of anger and irritation in the doctors' voices when discussing their experiences with alcoholic patients. Of course, this being a postdictive-correlational

study, one can only speculate about a possible causal relationship between the doctors' voice qualities and the patients' behavior.

Also relevant to the attributions which interviewees make to the nonverbal cues in their interviewer's behavior is an experimental study by Word and his associates [86]. In this study, the interviewers sat four inches closer, made 1.17 fewer speech errors per minute, and spent 3.35 minutes more with one-half of their subjects than with the control subjects. Experimental subjects reciprocated by moving their chairs significantly closer and by making fewer speech errors than did control subjects.

The most interesting feature of this experiment was the ratings made by independent observers of the interviewees' fitness for the position for which they were ostensibly being interviewed. The judges, who were only shown videotapes of the interviewees' behavior, rated the subjects who received the affiliative nonverbal cues from the interviewer as more qualified than the control subjects. Thus, the ratings of the quality of the interviewees' behavior was affected by nonverbal interviewer cues of which the subjects were unaware. The ratings were, of course, mediated by the interviewees' nonverbal cues, which were, however — and this is the crucial point — elicited by the nonverbal behavior of the interviewers. This is, of course, not different from what probably occurs in any dyadic interaction. A speaker's nonverbal behaviors — vocal and otherwise — are all sources of personality, attitudinal, and motivational attributions made by a listener about a speaker, which in turn influence the listener's behavior toward the speaker. Of course, the vocal and other nonverbal cues emitted by the listener will in turn influence the speaker's subsequent behavior. What we have here is a quasi-cybernetic model of nonverbal behavior, which can set off a vicious cycle of mutual dislike or a benign cycle of mutual liking.

The implications of this conceptualization for the interview are manifold. At the very least interviewers should be aware of their own nonverbal cues, and ideally they should learn to control them. In interpreting the interviewees' nonverbal cues, interviewers must be able to distinguish between interpretations that have consensual validity (naive judges within the culture generally agree on the meaning of that particular nonverbal behavior), but lack empirical validity (that these consensual agreements have no basis in fact), and nonverbal cues that are empirically valid. In this context, it should be stressed that nonverbal behavior is probably inherently ambiguous, in the sense that any one cue — for example, a high level of eye contact — could communicate a variety of specific messages, depending on the context. It is generally agreed, however, that this ambiguity can be reduced by simultaneously monitoring a variety of such cues and by interpreting patterns of nonverbal behavior rather than single cues. In this chapter, the emphasis has been on vocal cues, but many other

channels besides the vocal one are involved in the totality of nonverbal behavior. A systematic review of recent research findings in each of these channels can be found in Siegman and Feldstein [74].

In conclusion, it should be pointed out that aside from expressing affective states, attitudes, and information processing, nonverbal cues play a most important role in regulating the communication process. A detailed discussion of this function can be found in Jaffe [27] and Rosenfeld [59].

SYNCHRONY WITHIN THE INTERVIEW

It is a common observation that a person's speech characteristics are influenced by ambient stimuli, including one's conversational partner. People tend to raise their voices when conversing with someone who speaks loudly and to lower their voices when talking to someone who speaks softly. The results of recent studies indicate that many speech characteristics are susceptible to such mutual influence, including speech rate [84], the duration of silent pauses and of switching pauses [10], and vocal intensity [85]. This fascinating phenomenon is variously referred to as synchrony, congruence, pattern matching, or symmetry.

The basis mechanism or mechanisms involved in this phenomenon is still little understood. A number of alternate hypotheses, including an explanation based on modeling, are discussed by Webb [84]. I have suggested that it may be related to the phenomenon of dialect accommodation [70] that has been noted among speakers of different regional dialects [14].

Among the first to investigate the synchrony or congruence phenomenon within the context of the interview were Matarazzo and his associates [38,40]. Using experimental analogues of the initial interview, which were divided into three equal segments, they manipulated the duration of the interviewer's remarks so that they were either clearly reduced or prolonged during the middle of the three interview segments. The interviewees were found to match the duration of their responses to those of the interviewer's remarks. This evidence for synchrony, as far as the duration of interviewees' responses is concerned, was not replicated, however, when the authors analyzed a series of naturalistic interviews, although the phenomenon did obtain in relation to other verbal indices [39]. Pope and his colleagues [50] obtained evidence supporting synchrony in relation to productivity level with inexperienced interviewers but not with experienced interviewers. Using natural conversations, Feldstein and his associates [10] obtained evidence in support of synchrony or congruence in relation to the participants' pausing behavior, but not in relation to the duration of their vocalizations.

The following is an attempt to explain the failure to consistently demonstrate congruence as far as duration of responses or productivity is concerned. Productivity among two speakers, whether in interviews or in natural conversation, unlike loudness or speech rate, is a zero-sum game. One can readily match one's loudness level or speech rate to that of one's partner without mutual interference or without producing tension in the system. To the contrary, it is suggested that such matching indicates mutual accommodation. On the other hand, an increase in productivity level on the part of speaker A reduces by that much the time available to speaker B. Conversely, matching one's partner's lack of productivity is likely to produce discomfort and tension in the system. Failure to obtain synchrony in relation to the duration of utterances among speakers is, therefore, readily understood. What needs to be explained are the exceptions to this rule. In the case of the novice interviewers, the obtained congruence probably reflects the inexperienced interviewers' accommodations to their interviewees. In the experimental studies by Matarazzo and his associates [38,40], the rather abrupt changes in the duration of the interviewer's remarks, perhaps accompanied by other cues, may have served as signals to the interviewees that they too were expected either to increase or decrease their productivity levels.

Whatever the explanation may be, there is considerable evidence for the synchrony phenomenon in relation to a wide range of speech parameters, which illustrates the profound interactional nature of dyadic conversations, including those occurring in initial interviews. Clearly it is important that interviewers be aware of this phenomenon.

OPERANT CONDITIONING AND THE INTERVIEW

An early experiment by Greenspoon [17] successfully applied the operant paradigm to human verbal behavior. In this study the experimenter successfully reinforced the subjects' verbalization of plural nouns, by using "mm-hmms" as a reinforcer. These findings gave rise to a spate of studies using expressions or signs of approval or disapproval, *i.e.*, generalized positive and negative conditioned reinforcers, in human verbal conditioning studies. Others applied the verbal conditioning paradigm to clinical phenomena, including the interview [38,41].

The spirit which imbued some of this early research is thus expressed by Greenspoon: "It should be possible to work with verbal behavior in much the same way as experimenters have worked with the behavior of rats, pigeons, etc. It should also be possible to investigate the same kinds of variables that have been investigated with nonverbal behavior of humans and infrahumans" [18:511].

Despite some initial extravagant claims that the operant paradigm is sufficient to account for all that occurs in psychotherapy, including dynamically oriented psychotherapy, it was apparent, even from some of the very early studies, that the application of the operant paradigm to complex social human behavior necessitates the introduction of other mediating processes. For example, Mandler and Kaplan [37] found that the effectiveness of a reinforcer such as "mm-hmm" was related to subjects' subjective interpretation of the stimuli as being either positive or negative. Other studies have shown that the effects of both positive and negative reinforcers are a function of experimentally manipulated subject and experimenter expectancies [1,34]. Such findings suggest that cognitive hypotheses may play a mediating role in some of the findings obtained within the operant paradigm.

Heller and Marlatt argue that cognitive strategies operate even in the most straightforward human verbal operant studies.

A bar press can be conditioned easily through operant procedures, with the result that frequency of bar presses increases over time. Conceiving of a word as a single response akin to the bar press seems to be an overly simple analogy. If the analogy held without restriction, then application of a verbal reinforcer to the plural noun "horses" should lead to an increase in this word alone. How, then, can one explain the generalization to other plural nouns, such as "cats," "birds," or "houses"? This can only be done by bringing in the concept of stimulus class. Here it is concluded that the class of plural nouns has been "conditioned." All items within the class are said to have increased probability of occurrence following reinforcement.

When one speaks of a class instead of individual response items, one begins to tread on cognitive ground . . . It is our own view that verbal "reinforcers" are best characterized as discriminative stimuli which provide information as to the appropriate or desired response class for the subject; this is similar to what occurs in a concept-formation task, where the experimenter provides the subject with knowledge of the "correctness" of his choices [24:576].

Noncontingent Reinforcement

Matarazzo and his associates [41] found that more or less continuous "mm-hmming" by interviewers resulted in substantial increases in interviewees' utterance duration. However, in similar studies in which the interviewee was permitted to state when he had completed his utterance and in which kinesic and other potentially confounding interviewer cues were eliminated, no such effects of noncontingent "mm-hmms" were found [67]. In fact, in some studies in which the interviewer refrained

from responding with "mm-hmms" during the second half of an interview, after having dispensed such responses during the first half of the interview, the withholding of these social reinforcers was associated with an increase in interviewee productivity (62,63). One possible explanation for this finding is that the withholding of "mm-hmms," following a previous period of interviewer responsiveness, is interpreted by the interviewees as a sign of interviewer displeasure. This in turn may motivate interviewees to give more information or to explain and justify their previous remarks in order to restore the interviewer's approval. These considerations do not negate the reinforcement model. Quite to the contrary, they can be derived from it, either from a simple negative reinforcement paradigm or from an escape conditioning one. Other findings [67] suggest that when an interviewer responds with "mm-hmms" after not having done so earlier in the interview, such responses tend to inhibit interviewee productivity, possibly because in this case the "mm-hmm" is interpreted as a signal that the question has been satisfactorily answered and that there is no need to go on talking. At any rate, these findings suggest that interviewer "mm-hmms" can inhibit interviewee productivity and, conversely, their absence can facilitate interviewee responsiveness, depending on their sequence. Much work still needs to be done on determining the most effective way of orchestrating the dispensation of social reinforcers within the interview so that maximum interviewee productivity is obtained.

Contingent Reinforcement

There is ample evidence that the rate of occurrence of arbitrarily designated classes of verbal response can be increased by providing such listener consequences as nods, smiles, and leaning forward [33]. Heller and Marlatt [24], however, have argued that these results were obtained under conditions of minimal experimenter responsiveness, that is, ambiguous experimental conditions, which serve to enhance the cueing properties of the reinforcing stimuli, and that the few attempts to demonstrate a verbal conditioning phenomenon in more active and mutually responsive social interactions have been disappointing. For example, in an interview study by Heller, Brahlek, and Morris (cited in [21]), the authors compared two types of negative feedback: one word verbalizations such as "uh-uh" or "no" versus elaborate disagreements on the part of the interviewer with what the interviewee said. In both conditions, the first five minutes of the interview represented the "operant period," in which the interviewer responded every other minute, starting 30 seconds after the interview had begun, regardless of the content of the subject's verbalization. For the last

15 minutes of the interview, the interviewer responded only on the response class to be reinforced, in this case references to past events. Whereas the one-word negative reinforcers did indeed decrease the frequency of past verbs, the longer and more active disagreements in which the interviewer stated the exact subject remark with which he disagreed produced the opposite effect. The authors conclude that when confronted with specific and explicit disagreements, the interviewees attempted to convert the challenging interviewers. Subjects could argue with these interviewers because they identified their disagreements, which was not the case in the simple-negative condition in which the interviewer only said "no" or "uh-uh."

The effect of an interviewer's disagreeing or challenging remarks on interviewee's productivity was also investigated in a study in which interviewees had a previous interaction with the interviewer [64]. One-half of the subjects indicated that they liked him, the others that they did not. As in the Heller study, interviewees were significantly more productive when the interviewer responded with disagreeing and challenging remarks than when he responded with neutral or agreeing remarks. The expectation that the effects of the interviewer's disagreements would be a function of how much the interviewees liked the interviewer was not confirmed. Interviewees' liking of and attraction to the interviewer were not significant sources of variance in their productivity, either independently or in interaction with the agreement-disagreement manipulation. It is suggested that the results of this study are most parsimoniously explained if we assume that people have a need to appear rational and logical, a need which motivates them to defend themselves when challenged by others. Furthermore, this need is sufficiently internalized so that it is relatively independent of external approval or disapproval. Although these findings, as well as the findings obtained by Heller and his colleagues, in no way negate the operant paradigm, it is suggested that they are most parsimoniously accounted for in terms of a cognitively oriented heuristic.

CONCLUSION

Despite the many difficult and as yet unresolved problems in generalizing from the experimental laboratory to "real life" situations, including the clinic, it is argued that there is value in subjecting clinical problems to controlled experimental investigation.

A number of the studies discussed in this chapter were originally undertaken in order to clarify practical clinical issues: (1) What are the vocal correlates of stress and anxiety? (2) How important is interviewer warmth

and friendliness in facilitating interviewee productivity and self-disclosure? (3) What is the role of the interviewer's status and experience? Our initial working assumptions in relation to these questions were not always confirmed. One working assumption, which was based to a large extent on clinical lore, was that anxiety arousal would have an inhibiting and disruptive effect on interviewees' speech, that it would reduce their productivity, slow down their speech rate, and be responsible for a high rate of speech disruption. On the other hand, we assumed, at least in part on the basis of clinical lore, that interviewer warmth would facilitate interviewee productivity and self-disclosure. Both sets of expectations are probably reinforced by a special type of fallacious reasoning, which assumes that if something is positively valued, its consequences too are likely to be good and, conversely, if something is negatively valued, its consequences too are likely to be bad. Since we value warmth and understanding, we assume that its consequences are necessarily positive, and since we do not value anxiety and stress, we assume that all its consequences are negative. Reality, however, is amoral and good things can have negative consequences, and vice versa.

As far as anxiety is concerned, we now know that anxiety arousal *per se* facilitates interviewee productivity and speech rate, unless the task is a cognitively difficult one or the anxiety gives rise to defensive operations, which by their very nature tend to involve complex decision making.

As far as interviewer warmth is concerned, it has been difficult to demonstrate its beneficial effects on interviewee productivity and self-disclosure. While there is some evidence for the expected facilitating effect of interviewer warmth in some groups, there is also evidence for the opposite effect in others. The relationship between interviewer warmth and interviewee productivity and self-disclosure is evidently a very complex one, in the sense that it is moderated by a number of personality and situational factors. The general clinical observation that neutral and reserved interviewers tend to inhibit their interviewees' productivity and self-disclosure *may* be valid, because of the interviewees' disappointment in having their expectation that the interviewer would be warm and accepting disconfirmed.

Finally, as to interviewer status and experience, there is as yet little, if any, empirical support for the crucial role assigned to it by many practitioners — perhaps for all too obvious reasons.

In contrast to interviewer warmth and status, the consequences of which for interviewee productivity and self-disclosure are elusive, other interviewer variables have been found to have powerful influences on interviewees' productivity and on other aspects of interviewees' verbal behavior. These include the phrasing of questions — open-ended versus specific — and their intimacy value. One advantage of these variables is

that students can be readily taught how to phrase their questions, how to sequence them, and how and at what point to introduce relatively intimate questions.

The studies reported in this chapter should help focus the clinician's attention on the cognitive factors in the interviewee's behavior. Silent pauses in an interviewee's speech may reflect defensiveness against anxiety which he is experiencing as a result of the interviewer's remarks, but they could also reflect cognitive activity which is unrelated to anxiety. Ever since Freud, dynamically oriented clinicians have demonstrated an "affective bias" by slighting the role of cognition in human behavior, a point of view which has been forcefully presented in recent years by Hartman, Kris, and Lowenstein [19]. This is not to deny the powerful role of affect, including that of unconscious forces, in human behavior but merely to emphasize the frequent neglect of cognitive processes, which, as Schachter [60] has pointed out, give structure to our affective experiences.

Furthermore, I would like to argue not merely for submitting clinical problems to empirical investigation but, beyond that, for conceptualizing them in terms of general psychological principles. Such conceptualizations can open new vistas and remove clinical problems from the dead end in which they frequently end up. Thus, the conceptualization of anxiety, in terms of Hullian drive theory, has alerted us to the role of task difficulty and has generated a comprehensive research program on the effects of anxiety on speech as a function of task variables. Research based on theory can even enrich the clinician's armamentarium with new practical skills. Thus, in our series of studies, we have discovered, or perhaps rediscovered, the role of negative reinforcers, such as challenging interviewer statements, as valuable interviewer strategies.

But the benefits do not all go in one direction. As pointed out by Gamer [13], practical problems frequently provide the impetus for new theoretical developments. Interview and therapy analogue research is particularly suited for the testing of general psychological models and principles, especially those sociopsychological ones.

In the typical sociopsychological laboratory experiment, the investigator assesses the effects of some manipulation on subjects' feelings or attitudes toward another person or object. This assessment is usually made at one point in time by means of rating scales. The relevance of such data to behavior in the real world, which is continuous and ongoing and very seldom frozen in time, is at best limited.

A major advantage of using interviews for the testing of sociopsychological theories is that they readily allow for the evaluation of time effects.

Another advantage for using interviews as the testing ground for general sociopsychological theories is that conversation derived speech

variables, certainly noncontent variables such as speech rate and pausing, are relatively unobtrusive, subtle, and less amenable to manipulation than are the rating measures so widely used in sociopsychological research.

We have in fact used the interview format to test Aronson's gain-loss principle of interpersonal attraction [66,73]. In these studies we relied on within-response silent pauses and other vocal indices of interpersonal attraction. So far, the results have been different from those obtained with the usual rating scales.

Interviews have other advantages as well. By their very nature dyadic conversations are interactive and sequential, which is, of course, another feature of social behavior in the real world. In the real world, our behavior elicits feedback from others, which in turn modifies our subsequent behavior — a feature which is built into dyadic conversations.

In conclusion, a note of caution. While some of our experimental analogue studies have been cross-validated in clinical settings with clinical populations, others have not. Such cross-validation, or "bridging research" is, of course, necessary if we wish to generalize from the laboratory to the clinic. In the interim, the findings based on analogue studies, especially those which are at odds with established clinical wisdom, should serve as roadsigns to the areas that need further investigation.

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20

Basic Principles of Interviewing

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The successful practice of medicine requires not only an abundance of scientific knowledge but also the skill to bring that knowledge to bear in the diagnosis and treatment of illness. The patient interview remains, even in the face of geometrically expanding medical progress, the most fundamental of those skills requisite for the proper practice of medicine. It is on the basis of the data obtained in the interview that all subsequent treatment plans are made. Errors deriving from incomplete or inaccurate information gathered in the interview will be reflected in all decisions which follow from the ordering of inappropriate diagnostic tests to the initiation of erroneous treatment. Viewed from this perspective, it is difficult to exaggerate the central role that medical interviewing plays in the practice of medicine.

From the outset it should be recognized that the psychiatric interview and, indeed, all medical interviewing, is a social transaction between two human beings — the physician and his patient. As such, it is a skill that can be attained only through actual practice, for which no amount of study or reading can substitute. Therefore, it is recommended that the physician begin early in his medical school career to avail himself

of every opportunity to participate in the interview process in as broad a spectrum of clinical circumstances as possible.

The psychiatric interview is a unique type of social transaction, perhaps more properly termed *a structured exercise in human observation*, at least from the perspective of the physician. It is a goal-specific transaction and thus should conform to certain guidelines. It is the purpose of this chapter to outline broadly many of the principles upon which the interview should be based.

Simply put, the goal of the psychiatric interview is to obtain the historical and observational data necessary for the physician to make a diagnosis of the patient's pathological state. This, however, is oversimplified. First, it fails to encompass the ultimate purpose of the interview, namely, the initiation of treatment. The physician too often becomes enraptured with the process of arriving at the diagnosis, to the exclusion of the therapeutic elements which should be inherent in every interview. He fails to recognize that the patient's purpose in coming to him is to obtain relief in the form of treatment. This incongruence of goals sets a poor stage for the type of cooperative communication that is the foundation of all efficacious medical treatment. Second, the definition fails to recognize the importance of understanding the patient and his illness. Feinstein [1] has made the significant distinction between disease (a description of the pathologic process in scientific, impersonal terms) and illness (the evaluation of the consequence of this process in a given patient). The accomplished physician makes this distinction in his thinking and while he may be fascinated by the intellectual exercise of making the diagnosis, he gives equal attention to the consequences of the pathology in his patient. He recognizes that failure to do so frequently results in therapeutic misadventure and thus to defeat in his ultimate goal, the amelioration or cure of the disease.

It seems appropriate, before considering the basic principles of interviewing, to reflect on one of the most fundamental philosophical tenets of medical thinking which results in an attitude of mind detrimental to proper interviewing. There is a long tradition in medical thinking that leads the physician to look for a single causal agent as responsible for a single disease. This type of reductionist approach, while attractive for its scientific elegance, has been markedly overgeneralized. Based on the Kochian postulate, *reductio ad unum*, which played such an important role in developing our thinking with regard to infectious disease, it must be recognized that such an approach is both inadequate and naive in dealing with many medical diseases and most psychiatric disorders. Confronted with even a simple infectious illness, it is naive to consider only the infectious agent without regard to the attendant questions surrounding host susceptibility. Is there a problem with the patient's immune system? Does this, in turn, reflect a larger problem within the hematopoietic system?

What is the nutritional state of the patient? Has the patient been subjected to an unusual degree of emotional stress recently? Is the patient's environmental situation a contributory factor? All these questions and many more are relevant to the disease with which the physician is confronted. It is incumbent upon the physician to look for multicausal etiology and to attempt to weigh the contributing factor represented by each parameter. It seems clear that if the patient interview is undertaken from an orientation of unitary causality, it is doomed to failure from the outset. Multicausality and an assessment of contributory factors represented by each etiological element is the proper approach in all interviewing.

Basic to the process of diagnosis and treatment in medicine is the differentiation of signs, which are objective and demonstrable, and symptoms, which are subjective and nondemonstrable. As there are relatively few signs in psychiatry, we must rely on the recounting of symptoms — the subjective thoughts and feelings of the patient. It becomes necessary to acquire skill in estimating the relative importance of the patient's complaints when viewed against the total background he presents. It is apparent, therefore, that the psychiatric interview is directed not only toward eliciting the patient's immediate complaints, but also a significant titre of background history against which his present complaints can be evaluated.

It is, of course, possible to diagnostically categorize psychiatric disorders relatively quickly. However, the appreciation of the unique quality of a given patient, which is essential to understanding the forces operating in the development of his illness (the dynamics), is a much more extensive process requiring patience, empathy, time, and skill. Fundamental attitudes, perspectives, and interview structure help the physician elicit the type of emotional material required to make the diagnosis and promote a therapeutic atmosphere.

ATTITUDE

The strong tendency to want to "do" something to or for the patient must first be overcome in order to accomplish a good interview. The error most commonly made by neophytes is to say too much too often. By contrast the art of listening, perhaps one of the most difficult of skills to acquire, is the very cornerstone of good interviewing technique. Finesinger [2] has commented on the importance of minimal verbal activity on the part of the physician and its importance in the interview situation. Such minimal activity is not meant to imply passivity, but rather a redirected type of activity which facilitates the open expression of thoughts and feelings by the patient.

The ability to listen with an accepting and nonjudgmental attitude is paramount. And this, of course, requires time. The physician must be prepared to spend as much time as needed to gather the material required to make his diagnosis and establish therapeutic rapport. Finally, the importance of the interview setting must be appreciated. It must be consistent with the kind of highly personal and often confidential material which is necessarily a part of the productive interview.

ATMOSPHERE

Of the three essentials enumerated, the attitude of attentive, nonjudgmental interest — the art of listening to the patient — is perhaps the most important. Without it little can be accomplished, given the most private of settings and hours of time. Mere facts are simple to obtain. However, to garner the type of significant psychological data which is needed, the physician must convey to the patient the feeling that for this particular period of time, the patient and his story are all important. Indeed, nothing less than full attentiveness will work, since the physician must be interested in capturing the nuances of the patient's story, listening for what is not said, as well as what is said, and observing the nonverbal aspects of the patient's behavior, his gestures, degree of tenseness, vocal inflection, facial expression.

Conscious concentration on listening with a relaxed, supportive manner will facilitate the patient's responsiveness. The physician's verbal intervention should facilitate the flow of information and be open-ended in form. Requests for factual information should be minimal, especially early in the interview. An accusatory, judgmental implication in questioning should be assiduously avoided, as should questions beginning with the word *why*. Such questions are all but impossible to answer under the best of circumstances and connote an interrogative tone. An approach which frequently facilitates response is to "wonder why" such and such an event took place or such and such a feeling was produced in a patient at a given time.

Medical training helps the physician to become accepting and objective of things that often shock others: the sight and smell of pathological conditions, severe trauma, death, and even human excrement. Frequently, however, we are not so open-minded with regard to expressions of emotion, psychotic behavior, and neurotic distortion. If the physician is to deal adequately with the psychological problems, he must acquire the same type of objectivity about the emotional facets of illness as he learns to exercise with respect to those that are physical.

Love, hate, terror, pleasure, rage, guilt, ambition, envy, fear, sadness, loneliness, sexual urge, and shame, are feelings and emotions all human beings experience. They are the stuff of psychological medicine with which the physician must be prepared to deal with equanimity. Concepts of right and wrong have no place in dealing with patients. The physician's work is to help the patient understand what makes him hate his child and what effect it is having on him, what causes his overwhelming guilt and what might be done to eliminate it. It is not the physician's place to make judgments as to whether the patient should, indeed, hate his child, whether he should or should not have sexual urges.

Sexual impulses are powerful forces in all individuals and, even in the more open culture of the mid-twentieth century, are still subject to stronger taboos and restrictions than almost any other feelings experienced by humans. Special comment is made about sexuality because it is an area in which both patients and physicians experience problems within the interview setting. The patient is frequently reticent to express his feelings about sexuality and the physician to hear such material. Since patients often experience problems relating to their sexual feelings, it is incumbent on the physician to examine his own attitudes in this area and attempt to adopt the same type of objectivity that is required in other areas. It is often necessary for the physician to introduce the subject of sexuality with the patient. This is most properly done after the patient has been given the opportunity to become comfortable in the interview situation, perhaps even in a subsequent interview. In any case, it is an area that should be reviewed as a part of every psychiatric interview.

TIME

The physician's ability to spend adequate time with the patient and thus to present an unrushed, relaxed posture significantly facilitates communication in the interview setting. The overall atmosphere should be one in which the patient can be comfortable that he is not "wasting" the physician's time by expressing his concerns and feelings. When the physician's behavior and the situation in which the interview takes place connote that the physician is rushed and that there are other duties he must perform, many patients are reticent to occupy the physician with details which they feel may be irrelevant. Most often, however, the patient is not in the best position to make a judgment as to which details of the history are most significant and thus should not be placed in the position of making this type of decision because of the feeling that he may be impinging on the clinician's time. Frequently the most pertinent material to emerge

from an interview is that which might be considered irrelevant by the patient.

Interviews should be scheduled at times when it is unlikely that they will be interrupted by emergencies of any kind. Phone interruptions should not be permitted except under the most unusual circumstances. Should such an interruption occur, it is wise to apologize to the patient for the interruption despite the fact that it could not be prevented. Such an apology demonstrates the physician's respect for his patient and is not only a courtesy, but also tends to confirm the fact that for this period of time the given patient's feelings and concerns are the primary focus of the physician's attention.

While no absolute guidelines can be given as to length of an interview, it is generally found that any time less than forty-five minutes is insufficient to generate the volume of material necessary to arrive at an initial diagnostic impression. Interviews frequently are timed for approximately one hour and, under certain circumstances, may last as long as an hour and a half to two hours. However, under special circumstances interviews are markedly curtailed. Actively psychotic patients can frequently tolerate only a few minutes of interview, as is the case with many medically ill patients suffering from concomitant psychological disease. Often it is wise to terminate an interview with an uncooperative patient, resuming at another time when the patient is more amenable to interaction with the physician.

THE SETTING

While it is not always possible, the optimum configuration for a successful psychiatric interview is one in which both patient and physician are physically comfortable and as free as possible from external distraction. A small room that contains comfortable furniture and is well ventilated and free of ambient noise is most suitable. Human voices are particularly distracting to patients who are attempting to respond to the physician with material they consider confidential.

The arrangement of furniture and the position a physician assumes in relation to the furniture in the interview room is important. The physician who sits in a large chair, behind an equally large desk, looking down at the patient before him, is an imposing figure indeed. This type of setting hardly fosters the kind of relaxation necessary for the patient's open communication. By the same token, too intimate a setting is frequently threatening for many patients. Generally, the patient should be invited to sit where he will be most comfortable and to relax before the interview begins, particularly if the physician notes that he is rigid and tense, sitting

on the edge of his chair. This type of simple remark indicates that the physician is aware of the patient's situation and thus attentive to his needs. The assumption by the physician that the patient is tense and somewhat anxious, particularly during an initial interview, is a safe one and should be the foundation for his interchange with the patient.

It must be confessed, however, that this type of optimum configuration for the interview is not always possible. Frequently it is necessary to interview patients in a general hospital ward setting. And while every effort should be made to interview the patient in another setting, this deficit can be partially overcome, at least, by the general demeanor and attitude of the physician and his willingness to spend time with the patient.

PERSPECTIVE

The notion of the interview as a structured exercise in human observation implies a broader perspective for the interviewer than is often observed in traditional medical history taking. Traditionally, the focus is exclusively on obtaining from the patient that factual material necessary to understand the disease from which the patient suffers. Such material constitutes what is termed the *content* of the interview. There is, however, another facet to any interview situation, though it is often ignored. This is termed the *process*. Process constitutes the qualitative behavioral aspect of the interchange between the physician and his patient during the course of the interview. An awareness and appreciation of this facet of the interchange leads to greater sensitivity to the patient and thus to a more perceptive and productive interview. Beyond this, however, material gained through an appreciation of the process constitutes valuable insight into mental status and underlying character structure.

Consider, for example, how the patient enters the office. Is his posture slouched, his head down? Is he hypervocal, greeting the physician with a supercilious air? Given a choice, does he sit close to the physician or as distant from him as possible? What material does he emphasize during the interview? Does he omit material one might generally anticipate hearing? Is he reticent to speak or is he more open and intimate than one might expect, given the circumstance of a first interview? Does he seek to maintain control of the interview either by flaying the air with irrelevant conversation or by withholding any spontaneous verbal interaction with the interviewer? Does he assume a passive stance, seeking to be guided completely by the physician? Does he seem to have difficulty recalling dates or ordering events with respect to time? Is his affect consistent with the material he is delivering? Does he appear inappropriately angry or tense? And does this relate to specific content material or is it a pervasive

mood? Is he painfully concise and detailed in his answers or does he, by contrast, tend to treat serious issues in a cavalier manner? These are a few examples of the qualitative behavioral aspects of the interview that are termed process.

Because the customary focus is on content alone, it is necessary to make a conscious effort to develop perception to process. Attention should be directed to all aspects of the patient's behavior during the course of the interview and an attempt made to correlate the consistency and appropriateness of the process to the content.

The skillful, diagnostically productive, and therapeutically effective interview is one in which the physician is equally aware of content and process. Indeed, the degree to which the physician can integrate his appreciation not only of the content material but of the process of the interaction within the interview situation will stand in direct proportion to his perceptive skill as an interviewer.

INTERVIEW STRUCTURE

Although this section attempts to elucidate the general principles which properly characterize all psychiatric interviewing, the focus is principally on the initial interview, which is customarily known as the diagnostic interview. Its goal is to obtain sufficient information to allow for the establishment of a well-founded diagnostic impression. The initiation of treatment and the immediate disposition of the patient are totally dependent on the material obtained from the first session.

There are three essential categories of information that are relevant: the present illness, including the patient's chief complaint; past history, in as much detail as time will allow; and finally an assessment of the behavioral and mental status features the patient presents at the time of the examination. While more specific direction will be offered in subsequent sections and chapters regarding each of these, a brief comment is pertinent here.

After a courteous but brief introduction, as a preliminary to beginning an inquiry into the current illness, the patient should be invited to state in his own terms what bothers him most. Such a beginning tends to establish in the patient's mind the notion that the physician is interested in listening to what the patient has to say in his own words. In addition, it offers a clue as to the patient's perspective regarding his current distress. Next, the patient should be asked to expand on his symptomatology, as well as the life events that surrounded its development. Insofar as possible, it will be found convenient to order the material chronologically, developing it either prospectively or retrospectively.

An appreciation of the patient's past history from both a developmental and experiential standpoint is vital as a background against which the symptomatology can be evaluated more pertinently. Generally in psychiatric interviewing, past history should be given attention at least equal to, if not exceeding, that afforded the present illness. It must be recognized that the past is always prologue in psychiatry and perhaps all of medicine.

Although the mental status information obtained in an interview is of vital diagnostic, therapeutic, and prognostic value, it need not be sought in a formal "review of systems" fashion. For the most part, information regarding orientation, affect, thought process, judgment, mood, intellectual level and functioning, memory, insight, perception, and behavior can be obtained during the course of the interview by attending to process and content. If it is indicated that more formal testing or inquiry regarding specific areas of mental functioning be made, it is generally best to wait until the conclusion of the interview. Such formal testing is generally threatening for the patient and its introduction too early in the interview may lead to subsequent uncooperativeness.

Finally, there is an art in questioning the patient. Two fundamental principles are utilized in formulating questions put to patients during the course of the interview. First, questions posed to the patient should proceed from open-ended toward a more specific form. The patient should initially be asked questions which invite him to answer broadly in his own words. The examining physician then derives clues from this broad answer to focus more specifically on pertinent aspects of the initial response. When he has arrived at the degree of specificity required in a given subject area, the interviewer should again return to the broad, open-ended format. Leading questions are to be avoided, while questions which will help the patient to develop an understanding of himself and his situation are highly desirable since they foster the development of insight and engender a sense of personal autonomy and integrity in the patient.

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21

Medical Interviewing Techniques

Ephraim T. Lisansky, M.D.

The changing patterns of medical illness are the results of multifactorial changes in the human environment. The pressures of an ever-burgeoning population, increasing longevity, pollution, changing personal and family life-styles, and the complications of newer methods of surgical and medical treatments, including the side effects of drugs, has led to an increasing burden of physical and psychological morbidity in both acute and chronic medical and surgical disease [17]. Today the practice of comprehensive clinical medicine requires a knowledge of the previous life patterns, social background, and family of every patient, since these areas serve as the psychobiological seedbed for the latent predisposition to human organic disease, for its acute precipitation, and for its chronic perpetuation (Figure 21.1). The behavioral sciences — psychology, sociology, and cultural anthropology — are now more highly regarded than previously in the pre-

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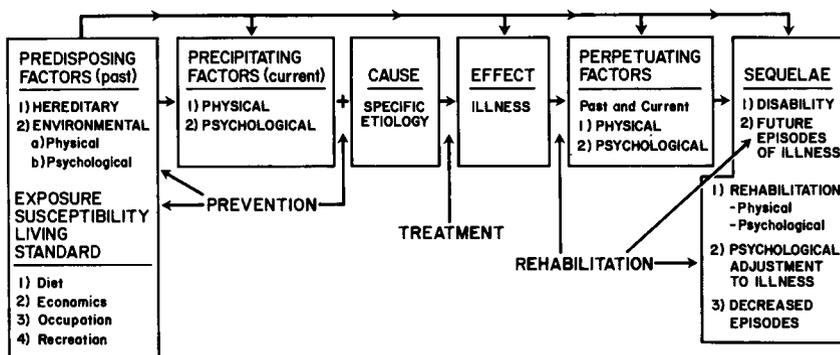


Figure 21.1
Patterns of intervention.

medical and medical school curricula and contribute to an increased understanding of the ecology and epidemiology of medical illness. Until recently medical schools offered little chance for involvement (other than intellectual) with the psychosocial factors which significantly contribute to the diagnosis and management of medical illness and to the maintenance of health [5,21,25].

The medical wards of every general hospital are crowded with acutely ill patients requiring immediate diagnosis of their physical illness and a prompt decision concerning emergency management. Influenced by the urgency of the situation and his own insecurity the medical student or resident physician hews to the line in doing what seems, and in fact is, most appropriate at the time, since the major challenge is the immediate emergency; his gratification, self-esteem, and promotion hinge on the alacrity and intelligence with which he handles this situation. He is intellectually aware, but not yet comfortable with the fact, that the practice of medicine in his private office will *not* exclusively encompass those medical and surgical emergencies which constitute a highly selected group of hospitalized patients. He soon learns that this is neither the main nor the bulk of the job with which most physicians are occupied in their office practice.

TEACHER-STUDENT RELATIONSHIP VERSUS DOCTOR-PATIENT RELATIONSHIP

The traditional, authoritarian teacher-student relationship in premedical education may become even more highly structured and rigidified in medical school. Informal scholarly dialogue may be attenuated by the pressing need of the faculty to present more and more data to the medical

student as the avalanche of medical knowledge increases. The didactic "lecturing at" is not appreciably helped by increasing the faculty roster and thus having so-called smaller group seminars, but continues the separation of faculty and student and perhaps yields only so much ground that one may say the students are "talked to." Rarely is the verbal transaction between teacher and student altered to encompass the quality of a dialogue best described as "talking with."

The usual teaching method may be in direct opposition to the technique required of the student-physician in his relationship with a patient and for his ultimate evolution into a clinician who knows how to talk with people. Thus the very process of traditional medical education emphasizes the acquisition of knowledge, which, although necessary, by its very format obtunds and stultifies the student for those aspects of interpersonal relationship emphasized in this chapter. If the authoritarian teacher-student relationship is transferred to a similar doctor-patient relationship, the patient is lectured at or to, advised dogmatically about the obvious or unrealistic, scolded if he is remiss in following instructions, and rejected if he is uncooperative. This type of behavior may be manifested in the most indirect, subtle, and genteel manner and may be quite outside the doctor's consciousness; yet the effect is the same, namely, lack of appropriate positive responsiveness from either student or patient. The recently graduated physician has been much talked at and talked to and has had little opportunity to see how seasoned practitioners have laboriously learned how to talk with people. He lectures his patients with his vast store of seemingly precise medical information and wonders why they do not improve faster, if at all. Thus many physicians have to do much unlearning in order to transcend their own experience as medical students and to modify the unidirectional authoritarian approach to their patients.

The goal is to retain control of the doctor-patient relationship and the interview by listening patiently and knowing how and when to interrupt adroitly and goal-directedly. Thus the material describing the patient's illness becomes manifest to both patient and physician, and they may then work together to achieve a new state of equilibrium of health for the patient and his family.

ROUTINE VERSUS COMPREHENSIVE HISTORY TAKING

The history-taking outline learned in medical school has a valuable but limited place in the early medical school curriculum as an initial operational approach to the diagnosis of medical and surgical illness. In making a tentative diagnosis the history is more important than the physical examination or the various laboratory procedures. The medical history indicates the direction in which the physician must search as he performs

the physical examination and as he selectively chooses the most enlightening laboratory procedures. Naturally, all three modalities, appropriately combined, lead to the highest percentage of correct diagnoses. This general thesis has been a time-honored concept in the practice of medicine. Conventional history taking serves as a base for security in the early years of clinical clerkship. However, if the outline is too scrupulously and rigidly followed and if the sections concerning the history of the patient's personal, family, and social life are included perfunctorily and by rote, it will not fulfill the goal of formulating a dynamic comprehensive diagnosis [24]. The convenient, but artificial, tag-end position ascribed by default to this portion of the history vitiates the meaningful associative apposition of physical, psychological, and social data in a logical, chronologically related manner and thus obscures the fuller understanding of sick people. Recent articles on history taking stress that "a skillfully taken history, carefully interpreted, will provide important information regarding the psychosocial background of the patient which may be of utmost value in the solution of his problem" [14]. "Disease often tells its secrets in a casual parenthesis" [18]. These authors also advise the physician to listen attentively and selectively and to let the patient talk. Castelnovo-Tedesco and Engel emphasize that an adequate medical history includes the social context in which the medical symptoms developed [3,4,13].

George Engel wrote: "The interview, in my view, is the most powerful, sensitive, and versatile instrument available to the physician. The interview serves many functions. Through it a relationship is initiated, the conditions and requirements for communication are established, roles and obligations are defined, the information necessary to delineate disease and to characterize the patient and his life circumstances are collected, data are processed, the patient and his family are prepared for decisions and judgments are instructed in care, and a human compact between patient and physician is achieved" [12:131].

HISTORY TAKING

History taking by the physician should add the dimension of an *interpersonal transaction* which, when compounded with the concept of the associative anamnesis, becomes the more comprehensive process of interviewing [6]. Many physicians develop this ability through seasoned maturity, sensitivity, wisdom, and long, cumulative experience in talking *with* patients. The purpose of this discussion is to structure this technique graphically so that it may become a more consciously and deliberately used tool. The general physician is usually the first line of defense against any illness, and it is his increasing responsibility, as well as that of all

other nonpsychiatric physicians, to diagnose and treat many people who are beset by the crises of an interlocking and interdependent physical, emotional, and social disequilibrium. For this reason the general physician should learn those psychiatric concepts and techniques of interviewing which, when modified, are applicable to the practice of clinical medicine. This technique is learned most readily by subjecting the general physician's verbatim interviews to the critical scrutiny and detailed analysis of a psychiatrist interested in medical problems.

Initially, the psychiatrist serves as a tutorial supervisor who reviews the verbatim interviews with the physician until the latter has become familiar and comfortable with this new process. He guides the doctor in developing facility in the technical, associative process and in understanding the content of the interview. Since the goals of the general physician are different from the goals of the psychiatrist, the technique of interviewing is accordingly modified from psychiatric interviewing, even though it is based on similar principles [19,31,34,35]. This modified, technical process is essential to the practice of medicine and may help to clarify our understanding of many diverse illnesses in which psychosocial factors are unearthed, analyzed, and dealt with in both diagnosis and management. By this process of interviewing, the patient may be helped to recall and rearrange known material more realistically and to uncover by association forgotten material which has been suppressed or repressed.

The Physician as the Central Figure

The advent of multidisciplinary group practice and the wider use of allied health professional personnel — social workers, medical assistants, nurses, for example — will not replace the physician as the central figure with the ultimate responsibility for taking the medical history. Neither these valuable associates — the printed questionnaire, the rapid-fire, question-answer interrogation — nor the programmed computer can take a comprehensive history, with all its nuances, which is directed at revealing the association of physical symptoms and illness with life stress. The physician's role as the health team leader makes him responsible for the medical interview in which meaningful data of the personal, family, and social life of the patient are incorporated associatively and in a meaningful cause-and-effect sequence with the physical symptoms of the chief complaint, current illness, relevant past history, and system review. I suggest a *process* of history taking or interviewing which, in the first contact with the patient, is calculatedly direct toward being comprehensively diagnostic and even therapeutic. This transaction through subsequent visits may

become, with minor modifications of technique, increasingly more psychotherapeutic. The basic concept of this process was first presented by Felix Deutsch in 1939 and was called the *associative anamnesis* [6]. At that time he recommended this technique for eliciting information from patients with psychosomatic disorders. The modification presented in this chapter suggests that this type of history taking is useful to clarify many medical and surgical illnesses.

Moreover it develops a doctor-patient relationship which can be observed by the physician and can be evaluated clinically as an index of the patient's reactions to other interpersonal confrontations. The interview and relationship with the doctor are *microscopic* compared to the *macroscopic* aspects of the patient's life pattern in dealing with other people.

It is estimated that 25 to 35 percent of patients who complain of physical symptoms suffer solely or predominantly from emotional or "functional" illness. Also, 75 percent of medical patients with organic illness are thought to be influenced by associated emotional factors of moderate or severe degree [36]. Therefore, we react with increasing uneasiness and a sense of incompleteness to the avoidance or the curt dismissal of family and social data indicated by the frequent comment, "family and social history are noncontributory." This hiatus is particularly obvious when one hears the histories of patients with recurrent illnesses such as coronary thrombosis, peptic ulceration, ulcerative colitis, and bronchial asthma. The need for prompt diagnosis and treatment of the patient suffering with an acute medical or surgical emergency disallows an immediate complete comprehensive history. However, the psychosocial data should always be elicited on subsequent visits during or after the patient's convalescence. The comprehensive history gathers the multifactorial predisposing and precipitating factors whose coalescence have crystallized the latent factors into a manifest clinical illness. If this is successfully accomplished, both the patient and physician understand better the natural history of the multiple factors from which the illness developed.

The Concept of the Double Diagnosis

The physician may arrive at a tentative comprehensive or "double diagnosis" [32] by eliciting data about the patient's medical complaints, namely, the physical *symptoms* (designated as *S*) and at the same time and with appropriate strategy assessing the patient's quality of his *intrapersonal state* and his capacity for *interpersonal relationship* (designated as *I.R.*). Thus, by inferential reasoning, he may develop possible answers to the following central questions: (1) What organic illness does the patient have? (2) What kind of person is he? By following this trend of thought other questions

and possible answers proliferate: What factors predicated the development of this particular illness? Why did he become ill at this particular time? How will he and his family react to this illness? What factors in this person's biological and psychological makeup will tend to perpetuate or ameliorate this illness? What concepts are developing (during the history taking and physical examination) as to possible strategems of immediate therapy, and what plan of management might prevent recurrences and complications?

Following the first or after subsequent sessions, the doctor makes a tentative formulation concerning the biological and psychological strengths and vulnerabilities of this patient which influenced his predisposition to a certain illness. An assessment is made of what particular stress factors may have precipitated illness in this person, how he will tolerate the physician's regimen of treatment, and what factors may militate toward or against rehabilitation and subsequent episodes of the same or other illnesses. This modified process of history taking or interviewing offers a broader perspective to both the physician and the patient for the diagnosis and treatment of his current problem and the prevention of future illness. This modification of technique and others recently suggested [24] do not replace, but rather add a new dimension to, the conventional method of taking a medical history. The term *process* is used to designate the technique by which the doctor elicits the *content*, which is associatively related. The term *content* is used to describe the raw data elicited by the interview and the various interpretations that may be drawn from it. Taking a history in this way requires some knowledge of the psychodynamics of human behavior and its relationship to the natural history of medical illness [23,26]. It also imposes a responsibility on the physician to consider and to use this information wisely and tactfully.

The Process

The *process* of interviewing suggested in this chapter is illustrated by Figures 21.2 and 21.3). In this concept *S* refers to physical symptoms and is designated as being *above the line*. The initial focus is in this area. Physician and patient exchange verbal material concerning such complaints as pain, headache, fatigue, nausea, vomiting, dizziness, and cough. This area of legitimate inquiry is pursued by the physician as the focus of highest initial priority. This fulfills the preconceived expectation of the patient and allows the physician to accumulate important data necessary to formulate a tentative diagnosis of the physical illness. The physician uses a minimal activity and encourages the patient to describe all aspects of his physical symptoms, thus revealing the natural history of his illness and

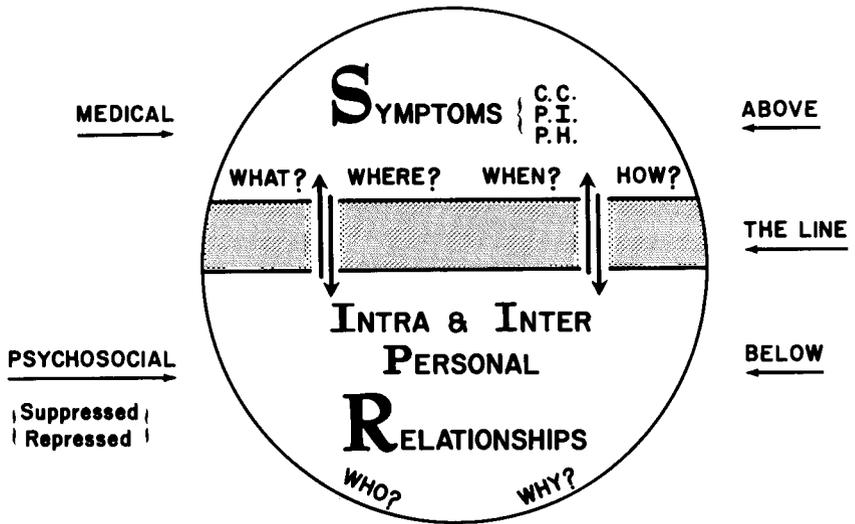


Figure 21.2
The double diagnosis area of focus in interviewing.

pertinent past history. The physician repeatedly focuses on the main symptoms, using nondirective questioning, minimal intervention, pauses, gestures, and vocal and facial expressions to facilitate and guide the patient's verbalization. Initial focus on material above the line, therefore, partly fulfills the important but intermediate goal of the traditional method of medical history taking which emphasizes the acquisition of information pertinent to the differential diagnosis of organic medical-surgical disease. This material is also necessary to indicate the direction in which the physician must search as he does the physical examination and, thereafter, selectively chooses the most appropriate laboratory procedures. During this early phase of the interview, it is most important to listen patiently and attentively, to appear unhurried, and to let the patient talk. Seemingly trivial and peripheral symptoms of which the patient complains as an aside or even parenthetically may be the crucial key to the medical diagnosis.

I.R. refers to interpersonal and interpersonal relationships is designated as being *below the line*. It contains highly charged psychological material which is frequently suppressed or repressed. This area includes important information about the patient such as feeling, moods, opinions, judgments, fears, hopes, and attitudes toward self, others, money, sex, death, and dying. Entering this area requires the greatest technical deliberation and artfulness. Here the doctor must use the utmost tact and the lightest touch in extracting hidden material. The patient may be unaware

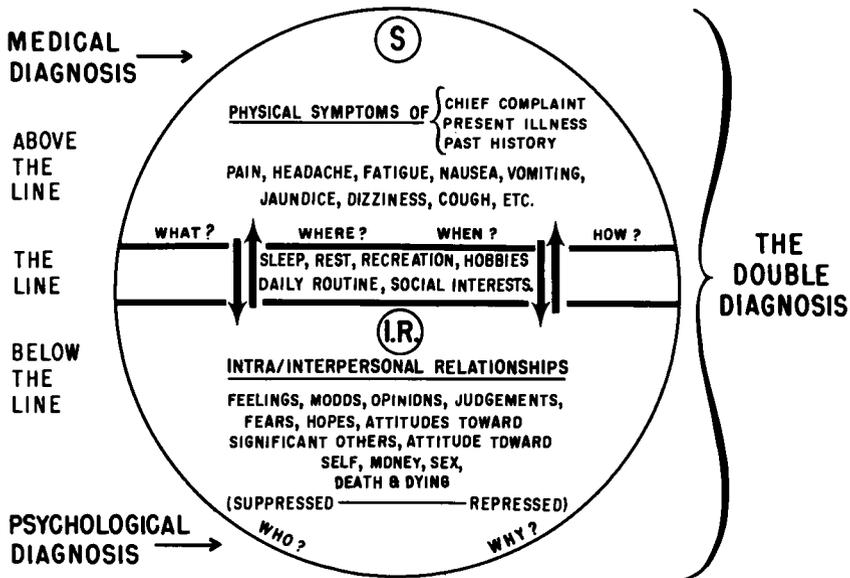


Figure 21.3
Areas of focus in interviewing.

of the significance of these data. Many people are reluctant to talk about these things and feel they do not need help in these areas; they believe that their own moral strength or willpower, logic, or intelligence should see them through these psychological and social difficulties, and they ask themselves and the doctor, "What does this have to do with my bleeding ulcer?"

The line in Figures 21.2 and 21.3 refers to the middle area of neutrality between the physical symptoms and the highly charged psychological material. This includes such data as sleep, rest, recreation, hobbies, and daily routine. These items of personal behavior fall within the limits acceptable to patients as a focus of inquiry and are usually explored without being considered threatening. This area may be focused upon to amplify the nature of the patient's reaction to his physical symptoms and thus be deflected above the line. Also, it may serve as an opening wedge into the highly charged area of the patient's personal life, which lies below the line. As an example of how easily one can tip the focus either way, consider the following example: If the character and duration of a patient's pattern of sleep is being discussed and the physician asks "how long," this obviously directs the focus above the line. If, however, one asks "with whom," this obviously dives far below the line.

Initiation of the Interview

The diagnostic challenge and the therapeutic work begin simultaneously in the first interview with the patient. At this time the physician's first focus is on eliciting and clarifying the *physical symptoms*. The doctor's brief greeting indicating cordiality, interest, and respect initiates the interview. Particularly at this time the patient should be allowed to do most of the talking with as few interruptions as possible by the doctor. However, the actual work of the patient is small compared with the work of the doctor who does most of the listening while quietly observing and assimilating a variety of perceptions, both verbal and nonverbal, that flow from the patient. Many hard-working medical students, residents, and practitioners argue that there is not enough time to take a history in this way. I submit that this structured, goal-directed technique can be employed productively for ten to fifteen minutes to elicit pertinent material and to strengthen the doctor-patient relationship. On each subsequent visit the doctor enlarges his perspective and understanding of the patient, the progress of his illness, and the multiple variables relating the two. There is enough time if one learns *how* to do it.

The doctor, by his attitude of friendliness, interest, and professional competence, augments the patient's feelings of hope and confidence and facilitates his ability to share the burden of his complaints. The doctor's insight grows as the material is presented by the patient with support from the doctor. The doctor's skill and empathy in relating to the patient at this point determine how therapeutically effective he will be. At the same time the patient is making an appraisal of the doctor in an untutored way, but he may be so intuitively perceptive that he may be aware of the doctor's actual feelings rather than his attitude. The doctor should realize that both he and the patient are influenced by their mutual and reciprocal verbal and nonverbal communication and by the reverberating feedback responses. If the doctor successfully communicates a feeling of respect by his nonverbal attitude, this in itself will help the patient feel less anxious, talk more freely, and even begin to feel some respect for himself. This concept of attitudinal communication is a keystone in the initiation of psychotherapeutic work.

Before the patient even speaks, that part of the physical examination called *inspection* has started. The history and physical examination continue with the handshake and the accompanying verbal exchange. Thus the physical examination begins even before this exchange. An evaluation of the patient's mental status begins concurrently.

The doctor can learn many things from the handclasp and inspection. The muscular tone of the hand, the condition of the nails; the size, color, and involuntary movement of the fingers; the texture, temperature, and

degree of dryness or moisture of the skin communicate data of diagnostic value. The tone-lacking, cold, moist, hastily withdrawn palm of the patient with anxiety neurosis is easily recognized. In this type of patient the normal tremor may be markedly increased in amplitude, if not in rate. The restless, tobacco-stained fingers of the chronic cigarette smoker and bitten nails are an index of the patient's emotional status. The overly robust, finger-crushing handclasp of some patient's may be an aid in estimating the nature of their defenses against the stress-of-life circumstances. The fine, rapid tremor and the warm, moist, velvet-skinned hand of the hyperthyroid is an aid to diagnosis just as is the cold, dry, rough, sallow hand of the hypothyroid. Thickening and contracture of the palmar fascia with thenar and hypothenar redness may indicate the chronic alcoholic. Cyanosis and clubbing of the fingers have long been considered traditional signs of congenital heart disease. Clubbing of the fingers with cyanosis may indicate a cardiac, pulmonary, or chronic debilitating disease, such as subacute bacterial endocarditis, pulmonary fibrosis, or chronic ulcerative colitis. Long, tapering, spider-like fingers (arachnodactyly) are frequently associated with Marfan's syndrome. The serious emotional difficulty with which these patients may suffer is well recognized and frequently overlooked. Palmar and nail bed pallor may be an important clue to chronic anemia of selective malnutrition or chronic blood loss. The finger joint deformities of rheumatoid, hypertrophic, and gouty arthritis are pathognomonic. Silverman and Littman have described how the clinical examination of the hand aid in comprehensive diagnosis [33].

Before the interview starts, information is gathered by observation of the patient's gait and posture. As the interview proceeds, the doctor scans the facial color, mobility, and expression. The lower half of the face is much more mobile than the upper half and, thus, is a more facile reflection of the patient's feelings. The doctor should notice the texture and grooming of the hair, the direction and movement of the eyes, the patient's apparel, general grooming, dental hygiene, body movement, and mood. He should listen for stream of talk, slips of tongue, dialect, vocabulary, coherence, indications of general intelligence, degree of education, and memory. The doctor becomes deeply involved in making a comprehensive diagnosis as visual, tactile, and verbal material challenge his perception. The patient offers his behavior, words, intonations, gestures, and the somatic expression of his feelings — for example, tears, sweating, and variation in respiratory rate. Everything that happens in the doctor-patient encounter is pertinent to the diagnostic process by which the physician elicits and assesses material. Nothing that happens can safely be disregarded [14,15,28,29].

The patient may volunteer associative correlates by the juxtaposition

of psychological life circumstances with physical symptoms. These are noted and explored briefly, but with sufficient latitude and flexibility to allow the physician to make diagnostic inferences as to their relative importance and meaning. As the meetings with the patient continue, regardless of periodicity or frequency, the physician-patient relationship deepens and the multiple symptomatology becomes more diagnostically exposed to valid interpretation. Thus, the focus of the verbal exchange may shift more naturally and quickly to the data concerned with the pertinent intrapersonal and interpersonal life of the patient.

In the initial interview one sees the essential characteristics and the goal-directed strategies of a prolonged, therapeutic process which may enlarge to several meetings or, as time goes on, to many sessions [35].

During the first five to ten minutes of the interview, the focus is always on the area of the physical symptoms. This allows the physician an opportunity to make certain inferences about the organ system involved and the possible pathophysiology. At this time his obvious interest in the patient's symptoms and his restraint in talking promotes a positive doctor-patient relationship. Frequently, by the time the patient has sufficiently clarified the most important symptoms, a feeling of positive rapport has been established.

The patient, encouraged and guided by the physician's focus, has the time and the opportunity to tell the story of his illness. After this the physician may appropriately ask a legitimate question concerning these items in the neutral area of the line (Figures 21.2 and 21.3) which by association will lead to more highly charged personal data. He thus encourages the patient to tell him more about his work habits and recreational activity, and the patient may then slide smoothly into the area of family background, education, and social relationships.

The patient may have made some previous reference to these points. The physician now has his opening and he can return to these references to get the patient to talk about more personal material and its possible relation to the symptoms. At any point in the interview he may tactfully refocus on the area of symptoms by asking for a repetition or reclarification of the complaint for several reasons: (1) The patient impulsively and prematurely dives into the highly charged personal area before the doctor is informed enough to discriminate between significant and insignificant information; (2) The evoked material is disturbing to either the doctor or the patient, and the continuity of the interview is threatening; (3) The patient wanders afield into irrelevant areas.

The area of symptoms above the line is the safe area, the area of refuge for both physician and patient whenever the interview becomes difficult for any reason. In like manner, the physician may refocus from very personal items such as sexuality, self-concept, or money to less highly charged items such as work or recreation. He should not indicate prema-

turely an inordinate attitude of curiosity about those intimate areas of a person's life, but rather should indicate serious interest and concern, uncolored by any attitude, gesture, or verbalization indicating a value judgment. Later in the interview, when both patient and physician are ready to communicate on a more sensitive and personal level, he may again focus on those highly charged issues previously mentioned by the patient.

The physician tries to elicit information about the patient's personal and social life circumstances which occurred before and at the time the symptoms began. He does this by asking: "What was going on at the time the vomiting started?" "How had things been going for you that day?" (or "the day before?" or "the week before?" or "the month before?"). "How were you feeling that day?" (or "the day before?" or "the week before?" or "the month before?"). If a patient has had several episodes of an illness such as a bleeding duodenal ulcer, the most recent episode is the optimal one on which to focus for a discriminating and accurate description of the symptoms and possible precipitating factors. The next optimal episode on which to focus is the first episode, since this, by its novelty to the patient, may be remembered more accurately. This helps to clarify any periodicity or pattern to the attacks of illness. The physician focuses firmly, although tactfully, on eliciting the biological and psychological background of the patient before he became ill. This may be related to the predisposing and precipitating factors which ultimately culminated in his present illness. The clinically perceived illness is not the beginning but the end point of many coalescing factors.

On several different levels of consciousness, the physician perceives the patient's verbal and nonverbal communication and should be aware of his own unspoken associative thinking both above and below the line. This requires concentration in listening, restraint in speaking, and adroitness in interviewing. Appropriate timing and shifting of focus allow the physician to maintain control of the interview and to elicit concurrently the associative material from all these areas. The patient may lead or be led into an area and the physician may follow, maintaining control of the interview by focusing. The physician shifts the emphasis from one topic or one area to another, advancing and retreating, stressing and supporting as the occasion demands and as the patient's story unfolds. The process is goal-directed and structured, yet flexible [14]. Thus, a comprehensive, although tentative, medical and personality diagnosis may be formulated. The process of adroitly focusing either above or below the line and the physician's judgment and skill in pressing the patient to yield more and more personal material while at the same time supporting and reassuring the patient determine the flow of the interview. The most productive interview is obtained by the doctor's timing and focusing his behavior and remarks, thus applying an appropriate admixture of stress and support to the patient. Near the close of the first interview, which usually

takes about forty-five minutes, the doctor should refocus on the symptomatic difficulty. This may be done in several ways: one way is by the doctor's repeating in succinct, abbreviated phrases his understanding of the symptoms and his asking by an unspoken questioning gesture for any additions or corrections. This allows the interview to be concluded in a neutral atmosphere and brought to a graceful conclusion by refocusing on the material above the line.

More information may be elicited quite naturally and appropriately during the physical examination. As each organ area is examined, the doctor may ask brief, pointed questions with reference to a review of systems and past history, thus allowing the patient less latitude of response than obtained in the preceding phase of the interview. For instance, while examining the abdomen and inquiring about symptoms, the physician may ask about drinking milk, coffee, tea, carbonated beverages and, thus, quite naturally about beer, wine, and whiskey. While examining the genitalia, he may ask about nocturia and frequency and then about libido and potency. In most cases a thorough physical examination can be done in fifteen to twenty minutes, including the verbal interchange which evokes material augmenting those items not focused upon in the interview proper. During and after the examination the doctor may modify his technique and use moderate or marked verbal activity to inquire more directly into the past history, review of systems, social, family, and personal history not previously covered [23].

The foregoing techniques employ a process of data gathering in an associative manner so that the doctor can, rather quickly, arrive at a tentative double diagnosis, namely, from what medical illness is the patient suffering? What kind of person is he, and how do his personality and life experiences relate to his illness, its etiology, recurrence, chronicity, and management? The patient's behavior during the interview and physical examination is an important index of how he reacts to stress in other circumstances.

The technical process elicits the physical symptoms and psychology of the patient's life as associative continua. A consideration by the physician of these two inseparable parts of the medical history as a totality allows him to develop an "expanding ecologic perception of the patient" [1]. The process of taking a meaningful medical history elicits relevant items from both *above* and *below* the line in an associative manner to enable the tentative formulation of a comprehensive diagnosis. This includes a consideration of the patient's physical status, an estimation of his personality or psychological status, and an understanding of how the two areas may interrelate. The most amenable area for intervention may be that of the patient's personality and his feelings about himself, his life, his illness, and his resultant behavior. A clarification and understanding of

this area with insight, first by the physician and then by the patient, may suggest a regimen of management resulting in a decrease in the severity of the patient's symptoms and in recurrent attacks.

The physician's unhurried, patient, and thoughtful demeanor allows latitude for the patient to tell the story of his illness. The focus is directed by the doctor to elicit meaningful material using minimal verbal activity and mildly encouraging gestures, repeating with a slight questioning intonation the key words and phrases which the patient has used to describe the symptoms of the chief complaint and the present illness. This introductory segment of the initial interview usually takes ten to twenty minutes and the focus is above the line. This serves the following three purposes:

- 1 The attentive attitude of the doctor and his focused interest on the physical symptoms impress the patient with the medical organic orientation of the doctor. The focus is on "what" and "when" rather than "who" and "why."
- 2 The careful accumulation and the repeated modification and verification of data above the line allow the physician to make those inferences necessary to formulate a tentative organic diagnosis.
- 3 The doctor tenaciously, but gently, requires the patient to repeat the description of his physical symptoms, the setting and the timing in which they began, and the subsequent train of events. This soon exhausts all the important, easily recalled, and obvious data of which the patient is consciously aware. Repeated refocusing in this area presses the patient by his associative recall to slip involuntarily into the area below the line.

The goals of the initial interview are as follows:

- 1 To make a tentative diagnosis of the patient's organic illness with the help of a complete physical examination and the appropriate laboratory studies.
- 2 To make a tentative diagnosis of the patient's personality and mental status.
- 3 To initiate and to solidify a constructive, effective doctor-patient relationship.
- 4 To formulate and to initiate a tentative plan of comprehensive medical management. This begins with the concept of immediate treatment of the medical illness, but includes the planned use of all available and necessary allied health professional services (physical, social, and psychological) which will

hasten convalescence, facilitate rehabilitation, and prevent recurrences.

During the interview the doctor's awareness and behavior must function on many different levels:

- 1 To focus initially on symptomatic material *above the line* and to accumulate all appropriate material necessary to make a medical diagnosis.
- 2 To note, so as to focus on, any cues that might yield psychological material from *below the line* and to note the thought and verbal associations which allowed this juxtaposition by the patient.
- 3 To exploit tactfully any neutral material offered in *the line* area that may lead the patient to relate material below the line by natural association.
- 4 To be aware that his inferences are also influenced by his experiences with many other patients and by certain aspects of his own life.
- 5 To be sensitive and yield to the "vicissitudes of inference" [35] in his search for validity.
- 6 To be aware that the words of the patient have both conscious and unconscious meanings.
- 7 To be aware of the significance of the nonverbal but vocal communication, for example, rate of speech, sighing, inflection, intonation, and enunciation. Also to note the hand gestures and body movements associated with the voicing of verbal and nonverbal sounds.
- 8 To be aware that the patient uses speech to communicate and to reveal as well as to defend himself and to deflect the doctor's perception.
- 9 To be aware that the patient may unwittingly engage in evasions and deceptions.
- 10 To be aware that the areas avoided by the patient may be significant.
- 11 To be aware of the possibility of conflict developing in the doctor-patient relationship because of the doctor's own value judgments, anger, boredom, fatigue, discontent, and preoccupation with other distracting thoughts.
- 12 To learn to be aware of the attitudes, feelings, and fantasies which a patient experiences with reference to the physician, many of them arising irrationally from the patient's unconscious conflicts rather than from the reality of the relationship.

Also, to face and control his own irrational attitudes, feelings, and fantasies concerning the patient, which may arise from the physician's own unconscious conflicts [26].

By keeping these points in mind the physician accumulates data which allow him to develop a concept of the patient's "mental status" while taking the history.

These several tributary streams of converging, interdigitating material directed toward the doctor require him to think inferentially in order to arrive at tentative diagnostic and etiologic categories. The tentative inferences may be valid or invalid, but repeated testing, perhaps on future visits of the patient, allows the doctor sooner or later to separate the wheat from the chaff. This sifting of material is possible if the contact between the patient and doctor is goal-directed toward a comprehensive assessment of the patient. The process of interviewing should not interfere with the doctor's attitude of friendliness and warmth. However, the relationship is always structured to accumulate pertinent information concerning the patient. Making a comprehensive diagnosis requires an effort at problem solving on several different levels concurrently. Within certain limits this technical process is sufficiently flexible to allow for the various personal approaches to patients. It can be formulated, learned, and incorporated by any doctor and is consistent and repeatable [14]. How, when, and where to focus and then retreat, to refocus and advance, either *above* or *below* the line becomes a matter of strategy. Appropriately employed, the principles outlined allow the material to be elicited in a meaningful sequence and with consideration for the development of a constructive doctor-patient relationship.

Indiscretions to be Avoided

If possible, the physician should avoid the following specific indiscretions of strategy in interviewing:

1. Asking a question which can be answered by yes or no. Such a question allows the physician, rather than the patient, to describe the illness. Since the physician's concept of the symptoms is necessarily sketchier than the patient's concept, questions requiring a descriptive answer are preferable.
2. Asking a double question. The patient intent on answering one question may forget to answer the second or may become confused.
3. Asking a question which by its wording contains the possible answer. The patient may find it easier to use the doctor's words and ideas than to recall his own more unbiased description and, therefore, he may

offer an inaccurate account of the symptoms. The possibility also exists that a suggestible or hypochondriacal patient may incorporate the symptoms or situations suggested by the doctor and unwittingly develop an inappropriate concept of his own illness.

The physician should also avoid the following general indiscretions:

1. Focusing prematurely on highly charged, sensitively guarded material. This should not be done before the stratagems previously described have been used effectively to make this area of exposure a suitable and graceful inquiry. The patient may interpret any direct inquiry in this area as a presumptuous intrusion into the privacy of his personal life, irrelevant to the goal upon which both patient and doctor have unspokenly agreed.

2. Reacting inappropriately to the patient's spontaneous and impulsive account of psychological material. The patient, driven by his anxiety and need to share personal data, may plunge below the line prematurely into the psychological realm of intrapersonal and interpersonal conflict. This may be interpreted by the doctor as a digression and may either threaten or distract him so that he rejects this material as a transgression of the accepted rules for reaching the correct physical diagnosis. This rejection may be manifested by a wide range of behavior on the part of the doctor. He may brusquely deprecate this offering, refocus on physical symptoms, or listen impatiently until the patient begins to talk about what the doctor considers to be more pertinent and meaningful. When this happens, it implies to the patient what the doctor considers important — the more measurable and more easily communicated story of the physical symptoms. This reinforces the constriction and rigidity with which the patient complies with the doctor's expectations, and thereafter the patient obediently stays *above the line*. On the other hand, in this circumstance, the doctor should put his pencil aside and listen attentively with encouraging gestures to the patient's story. Five to ten minutes should be used in this manner. Words or phrases to ease the patient's anxiety can be the avenue to important, relevant information and to the development of a positive doctor-patient relationship [37].

The doctor, however, may be too compliant or have no technical plan of interviewing in mind. He may become captivated by the intimate nature of the data and allow the patient to ventilate at too great length and without direction in this area. The patient, revealing too much prematurely, may withdraw his confidence before much benefit has been gained and before an effective doctor-patient relationship has developed. The doctor should avoid this by tactfully focusing and redirecting the channel of the interview after the patient has concluded the initial phase of his story. Thus the doctor remains in conscious control of the interview and at a strategic time can refocus on either the patient's physical symptoms or on his psychological reactions.

3. Focusing on physical symptoms to the exclusion of psychosocial data. All too frequently the patient shares with the doctor a description of his physical symptoms and submits this as the legitimate coin of exchange which he thinks the doctor wants to hear. Both patient and doctor are influenced by a mutual compulsion to exchange questions and answers concerning the past and present physical state of the patient and, thus, uncover information which will lead to the diagnosis of an organic disease. The doctor is influenced by the urgency of his immediate responsibility to the patient and may be respondent, in too narrow a sense, to the challenge of compressing the data into a useful classification of medical disease. The focus is, therefore, destined to be "disease oriented" rather than "patient oriented" [24]. The question of making a personality diagnosis or "What kind of person is he?" or "Why did he become ill when he did?" usually does not have a high priority in the doctor's mind. The focus is too sharply pointed to identification of the disease and its external etiology and not on the biological and psychological variables of the host [10,11]. The social, emotional, and family history may be given only routine, perfunctory attention. The doctor's attitude unwittingly may convey to the patient that the doctor is not interested in this area, so it may be avoided by both the doctor and the patient. By offering his physical symptoms, the patient engages the doctor in a univalent level of verbal transaction. Both participants tacitly agree that this is the substance of which the practice of diagnostic medicine consists. The more specialized the doctor, the more precise his questions may be with reference to a given organ system or class of disease syndromes. Here the patient, following the specialist's interest, restricts his offering to only those symptoms referable to a narrow segment of disease. The mind of the doctor is focused sequentially on the possibility, the probability, and the ultimate specificity of a disease.

The personality of the patient may be considered by the doctor as a secondary and tangential consideration. The doctor may ask about physical symptoms with the most microscopic inquisitiveness and the patient attempts to answer in the same vein. In no instance is the sensibility of either patient or doctor threatened by this. The doctor is behaving as the appropriate prototype, and the patient responds as best he can to the various questions with no feeling that his privacy is being encroached upon. The doctor acts this way because it is compatible with his professional training, competence, and assurance. Also, this behavior coincides with the patient's image of the doctor. In return for this professional thoroughness and interest, the patient responds as accurately as he can to these logical, important, and meaningful questions. In the pursuit of the disease, the relevance of the patient's personality may be overlooked.

4. This technique of taking a comprehensive history should not be used when the patient is obviously suffering a medical or surgical emergency. The decision to postpone the comprehensive history and to

care for the immediate needs of the patient requires the exercise of clinical judgment by the physician. He may later engage the patient in a more thoroughgoing history, fulfilling the goals and using the method previously described when the patient's critical state has subsided either during or after his convalescence.

The choice of focusing and channeling the verbal exchange in the initial interview begins with the physician listening to the patient describe the symptoms of the chief complaint and the present illness. There is usually no problem of decision for the medical patient since he is concerned about his physical symptoms and his initial verbal communication is *above the line* and includes one or more complaints such as vomiting or heartburn.

The physician should focus sharply and with tenacious emphasis on a description of symptoms by using appropriate questioning gestures, by using a patient, receptive attitude, and by uttering encouraging verbal and nonverbal vocalizations such as "I see," "Mm-hmm," "yes?" or open-ended phrases indicating interest by repeating a question, word, or phrase previously voiced by the patient, for example, "you vomited (pause) what (pause)?" These maneuvers extract additional modifying material such as the character, degree, site, duration, exact time of onset, periodicity, and factors which worsen or relieve these symptoms. This material is amplified and clarified by the doctor who uses carefully focused, minimal verbal activity.

Focusing Verbal Exchange

The following maneuvers illustrate the possible choice of focus, depending on the doctor's goal and his decision as to the appropriateness of the timing in the interview and the degree and character of the doctor-patient relationship. The patient's thoughts and words may slip below the line to clarify a certain point concerning a symptom. For instance, he may say,

1 "I vomited blood
 _____ after _____ = $\frac{(S)}{(I.R.)}$

I had been drinking
 a lot."

2 "I had heartburn
 _____ after _____ = $\frac{(S)}{(I.R.)}$

an argument."

If the doctor is still unclear about the character of the physical complaint and wants more information about the central and related symptoms, he may choose not to follow the patient below the line. He may note a few key words or phrases to focus on this highly charged, personal material at a later time when the doctor-patient relationship is more secure and he has a clearer understanding of the physical symptoms and the medical organic diagnosis.

Initially he focuses on symptoms above the line by a show of evident interest in this area or by uttering an encouraging word or phrase to guide the patient in this direction. In (1) he may ask any of several questions: "Could you tell me some more about the bleeding?" "What happened after you vomited the blood?" In (2) he may ask: "The heartburn — do you have it often?" "Were there any other symptoms with the 'heartburn'?" "Would you please describe the 'heartburn' to me again?"

The doctor should avoid asking about highly charged personal data below the line before the patient mentions this part of his life story. If this does not occur spontaneously, the doctor tactfully tries to maneuver the patient into taking this step. Once the patient has gone below the line and mentioned a certain aspect of behavior or feeling such as drinking too much or having an argument, the doctor may then or at a later more appropriate time in the interview or successive interviews say: "Would you please tell me more about the argument you mentioned before?" Occasionally the patient's feelings of anxiety are so intense as to compel him to tell the doctor at the beginning of the interview. When this happens, it should be gracefully accepted by the doctor without interrupting or refocusing the flow of material until the timing is more appropriate.

If the timing is appropriate, the doctor may choose to follow the patient below the line and thus reinforce the focus on the social and personal context in which the symptom developed. In (1) he may retort by one of several verbal questions: "What do you mean by 'a lot'?" or "How long has the drinking been going on?" or "How do you drink — with people or alone?" or "Has this been much of a problem to you?" The last question allows the patient to answer either by focusing on the symptoms of "vomiting blood" or "drinking"; thus he chooses the direction of the verbal interchange. In (2) the doctor may retort by focusing on the material below the line by asking: "These arguments — how often do they happen?" or "Could you tell me some more about how these arguments start?" or "The arguments are usually with ——?" The doctor thus uses minimal verbal activity and by careful, planned selection of words indicates which direction he prefers the patient to take. He does this by repeating a word or phrase uttered by the patient, either above or below the line, and offering this in the form of a question, "What other symptoms (pause) before the vomiting?" When the doctor uses minimal verbal

activity to focus on a topic, it allows the patient to utilize maximal initiative and verbal flow to amplify the history in the direction chosen by the doctor as the immediate goal.

TECHNIQUE FOR SUBSEQUENT INTERVIEWS

After the initial meeting a tentative diagnostic evaluation and management regimen are selected. All subsequent visits of the patient are structured by the doctor as follows:

- 1 He begins each successive interview by inquiring about the medical symptoms which the patient previously described. Thus on each occasion the initiating gambit focuses on the medical symptoms and reemphasizes them.
- 2 He reviews the effect of the previously recommended advice and treatment — change of diet, exercise, rest, sleep, and medication.
- 3 He then may tactfully and by indirection introduce a less highly charged topic and, thereby, ultimately inquire about the more highly charged psychological and social areas, which had been mentioned in the previous sessions.
- 4 As the patient and doctor continue in a relationship over several weeks, months, or years, the interviews are focused more overtly and more quickly on the psychological aspect of the patient's life and how they influence or are influenced by his illness. However, the order of priority remains the same as the valence of emphasis changes.

Using these technical concepts in a planned process of interviewing during successive visits serves two purposes: (1) It continuously reinforces the patient's opinion that his doctor has retained an interest in the initial, possibly recurring, and occasionally persistent, medical symptomatic difficulty. (2) It allows the medical patient sufficient time to renew the sensitive doctor-patient relationship while briefly reviewing his physical symptoms, thus enabling him to talk more freely about highly personal, psychological factors which may be influencing the remissions and exacerbations of his illness.

On these visits the verbal exchange about physical symptoms may take only five minutes and the ensuing fifteen minutes may be used to talk about intrapersonal and interpersonal material. This may be followed by an abbreviated, but goal-directed, physical examination of the organ system involved in this patient's clinical syndrome. An interval examination

of this type may take five to ten minutes, allowing five to ten minutes for the concluding summarization by both patient and doctor. Naturally this time schedule should be flexible and may be modified to meet the needs of the patient at that particular visit. Subsequent visits are terminated on a neutral note by the doctor refocusing on relatively bland, nonthreatening matters — advice concerning diet, rest, medication, or exercise. On the other hand, the doctor and patient may tacitly agree that more time is needed to clarify the important psychological area. If the patient is being seen rather frequently and his medical condition remains stable, the physical examination may be omitted from that visit, and more time may be spent on the more immediately demanding personal areas. Or the patient may be given an appointment to return, perhaps with a parent or spouse, for a session that could last thirty to sixty minutes. Also, at those times when the patient is being seen frequently and when the medical symptoms have subsided, the important focus is on the highly charged psychological areas which both patient and doctor have agreed are of primary importance. The same general process of interviewing technique pertains during these visits which have now become, primarily, a more goal-directed effort in psychotherapy. Here the medical physician focuses initially on less highly charged data in *the line* area, such as sleep, rest, recreation, work, and daily routine and waits for the opportunity to focus more directly on highly charged material *below the line*. He continues to employ the technique of minimal verbal activity, focusing and channeling on the *current* stress situation before he encourages the admission of background data describing the patient's early developmental life story.

Thus, the more formal, calculated efforts of the primary physician to do psychotherapy should be focused on a clarification of the current problem. He should reassure the patient by being receptive and sharing with him the account of his troubles. By his nonjudgmental attitude and by his positive feeling for the patient, as well as by his obvious wish to be helpful, he *is* helpful, reassuring, and a professional.

He must avoid giving hastily conceived advice and premature verbal support. He must encourage and stimulate the patient to clarify the problem area and to wrestle and cope with it. Focus on the remote past history, although very important in understanding the psychodynamics of the patient's personality and illness, should only be included as it is pertinent to the immediate goal of clarifying and rectifying the patient's current stress problems. The primary physician should help the patient consider alternate choices of action, face his feelings, and clarify his thinking. The patient may be afraid to do this by himself, but is encouraged to try with the reassuring partnership of his doctor.

Thus the patient begins to have feelings and thoughts about his illness and its associated problems in a way that enables him to share

them with his doctor. The doctor's rapt attention and understanding attitude are balanced by his careful avoidance of unnecessary verbalization. The doctor shares the patient's problem in a way that influences the patient to make many important and personal decisions for himself. This allows for the patient's growing independence and more complete compensation. Skillful interviewing accomplished by a primary physician may become an important psychotherapeutic tool. Repeated visits allow for the progressive unfolding and understanding of the patient's patterns of living in illness and in health. Through listening to his own verbalizations, the patient is led to make many discoveries about himself. If the primary physician learns to help the patient do this, the physician has achieved facility in one of the important and cardinal concepts of psychotherapy.

MULTIPLE AREAS OF THERAPEUTIC INTERVENTION

Every physician must try to prevent the impending and repeated attacks of many acute and chronic illnesses such as peptic ulceration, diabetic acidosis, angina pectoris, ulcerative colitis, rheumatoid arthritis, and attempted suicide. He must try to clarify and prevent the coalescence of those variable factors which culminate in illness, and he must assess and reinforce those strengths in the patient's biological and psychological makeup that may prevent future illness. To do this he should elicit a comprehensive history with the greatest economy of time and without neglecting the immediate treatment of the medical illness [22].

The medical practitioner, working as an isolate, has difficulty in thinking epidemiologically. The concept of the epidemiology of infectious diseases is well understood, but the epidemiology of noninfectious clinical syndromes requires a different body of knowledge and is less widely appreciated [16]. An increased understanding of the relevance of the behavioral sciences allows the doctor to see common denominators in human development, life circumstances, and illness which clarify the epidemiology of many clinical syndromes. Because of the fortunate opportunity to follow patients and their families over a long period of time, the physician can perceive many acute medical emergencies as peaklike, crescendo exacerbations interrupting the continuum of smoldering chronic illness. This modified concept and the increasing prevalence of chronic illness, characterized by remissions and exacerbations, make it imperative that the physician learn how to elicit and evaluate the ecological variables found only in the psychosocial area. Patients confronted with alcoholism, portal cirrhosis, obesity, diabetes, hypertension, or coronary thrombosis,

or those involved in accidents and suicide attempts, are more readily understood and more efficiently managed. This goal may be achieved by the physician's learning the process and employing the associative technique of taking a comprehensive medical history [6-9,20].

This implies that a physician should know how to elicit pertinent information from the patient, allowing both the physician and the patient to share in an expanding perception of the patient's behavior and illness. Material thus gathered offers clues to both physician and patient indicating how and why this particular patient is afflicted with this specific illness at this time and how he and his family are reacting to it. The comprehensive interview is the tool by which the physician penetrates the patient's conscious and unconscious biological and psychological defenses, as well as the barrier of his physical symptoms and medical-surgical disease. It prompts the exposure and inclusion of data which serve as a basis for understanding and utilizing the psychological aspects of the practice of clinical medicine. To diagnose accurately, to treat effectively, and to prevent complications and recurrences require the assiduously repeated application of an interviewing technique that elicits data about the patient's personal life stresses and about his relationship with his family and his social group. This enables the physician and his allied health professional colleagues to intervene effectively on a broader horizon than previously, facilitating prevention, treatment, and rehabilitation.

The following brief résumés of two patients' histories and physical examinations help to illustrate the relationship between the personality and life circumstances below the line (*I.R.*) and the physical symptoms above the line (*S*) and how the two areas interact as a reverberating circuit, causing physical and psychological decompensation.

Case Histories

A sixty-three-year-old white man, complained of gradual onset of shortness of breath on exertion, a rash on the flexor surface of the lower extremities behind the knees, and arthritis of the finger joints. He told how his exertional dyspnea had increased during the years, although most normal activities were still well tolerated and only unusual activity caused any difficulty. The episodic rash behind both knees caused him some mild discomfort and insomnia. The finger joints were altered by the characteristic deformity of a moderate degree of hypertrophic arthritis, and he complained that his previous manual dexterity was decreased. The sum total of all three of his chief complaints was obviously not serious or life threatening, yet he complained bitterly about his inability to perform his job with his usual degree of effectiveness.

During the initial interview he appeared to be alternately apathetic and mildly angry. His posture was stooped, his movements slow, and his clothes and skin hung loosely, suggesting recent loss of weight. His tone of speech was monotonous and petulant; he gave the general impression of being moderately depressed.

Focus by the doctor on the patient's disappointment concerning his inability to do his work as expertly as previously produced important material. He was currently employed as a master mechanic and supervisor of twenty men who worked in one division of a large tool-manufacturing concern. He had worked there for the past eighteen years and had established a reputation for meticulous work habits and performance. He had learned perfectionism from his mother and father, who were German and who had brought him to this country when he was seven years old. They settled in a small town in western Pennsylvania, and he went to work as a miner at the age of sixteen before completing high school. He worked for eleven years as a hard coal miner until he developed a chronic cough. At the age of twenty-six, he became an apprentice to a machinist in the same town.

He married, fathered three children, and ultimately moved to Baltimore; at the age of forty-four, he began working as a machinist for his current employer. He made this move so his children would have the advantage of a "big city" education. His natural intelligence, skill, tenaciousness, perfectionism, and capacity for hard work earned him successive promotions, and finally he became a supervisor at the age of fifty-five. Two important, relatively current circumstances were of real concern to him. For the past three years the company, which had greatly expanded, had initiated a program of hiring very bright, young, technical high school graduates who attended evening college. These young men came to their job with new knowledge, new techniques, and a vigor and aggressiveness he could not match. He became preoccupied with the thought that they were indulgently patronizing him and that he was seriously slipping in his own effectiveness. The second circumstance was the distaste with which he faced his coming retirement at sixty-five, two years hence. His children had all been successfully educated, had left home, and had moved up the social and economic ladder. He felt his productive life was grinding to an end.

A complete physical and laboratory examination revealed only moderate abnormalities which were insufficient to warrant the degree of physical complaint. He had a mild degree of pulmonary fibrosis and emphysema and only a moderate decrease in functional

pulmonary capacity. The atopic dermatitis was localized and minimal and his hypertrophic arthritis, compatible with his age, was not disabling. This man could not verbalize his feelings of depression; he could only complain of his physical symptoms. Only by indirection and associative interviewing technique did it become evident that the most important area in which the physician could intervene was the psychological one to help this man develop insight into how and why he was reacting. The basic personality diagnosis and the realization that Mr. X. was potentially suicidal [20] caused the physician to intervene by asking him to return weekly for thirty-minute interviews, by prescribing an antidepressant and a soporific, and by advising him appropriately concerning his shortness of breath, rash, and arthritis. This man gradually improved over a three-month period and ultimately reacted well to his retirement.

Conscious and calculated intervention by the physician in the area of interpersonal and intrapersonal relationships proved to be a salutary maneuver enhancing the patient's clinical improvement. The doctor's appropriate interest, but avoidance of undue emphasis on the physical components, allowed the patient to save face and not feel like a psychiatric case. Each session started with the doctor asking about the physical symptoms. The patient would quickly dispose of this area and go below the line, developing increasing insight into his problem and gradually decreasing his concern about self-concept, job, and future adjustment.

In the second case a twenty-seven-year-old white man was hospitalized because of hematemesis and melena. He was found to have a bleeding duodenal ulcer; this episode represented the fifth exacerbation in the past two years. During the initial interview, the patient was noted to be somewhat hostile with an air of truculent bravado. On the basis of his ensuing comments and attitude, it was assumed that a chronic depressive state was hidden beneath his overt behavior.

The doctor focused on the symptoms of indigestion and bleeding, and the patient soon dropped below the line to reveal a lifelong underlying struggle between covert dependency and overt independence and his long and excessive use of alcohol to help him cope with his feelings of isolation, hostility, guilt, and depression. He spoke of his early and continued infantilization by his parents, of his inability to make a success of his life, and of his behavior under the stress of military combat, about which he felt guilty and depressed. He felt that he was responsible for the death of his buddy. Following

his friend's death, he suffered a minor shrapnel wound compounded by an hysterical illness and the development of duodenal ulceration, which ultimately culminated in his medical discharge.

For many years he had tried to ease his loneliness and depression by the excessive use of alcohol, which increased after his discharge. During the initial interview he was able to correlate the episodes of gastrointestinal bleeding with specific periods of excessive drinking.

A meaningful, comprehensive diagnosis of this man and his illnesses should include his early unfulfilled dependency needs, his orality, hostility, and resultant guilt and depression. This depression was later compounded by the guilt engendered by his army combat experience, his need to punish himself, and his need to escape from loneliness and depression through the excessive use of alcohol. The repeated episodes of bleeding duodenal ulcer may have been related to his basic personality structure as well as to his alcoholism. A comprehensive plan of medical management for this man and his multiple illnesses should certainly include an understanding of his personality and his basic emotional needs. This may allow a level of therapeutic interventions which otherwise would not be possible.

CONCLUSION

The careful and repeated verbatim analysis of many medical histories reveals that every tape-recorded example of our work contains errors of strategy and timing. None of our staff, including me, has escaped this criticism. However, there is much to be said for continued effort in improving one's technique of history taking so that a more comprehensive diagnosis can be formulated, enabling both doctor and patient to manage the illness with greater understanding and effectiveness [2,27].

The associative process of history taking offers a rearrangement of known material from both the physical-physiological (*S*) and the psychosocial (*I.R.*), allowing a clearer comprehension of the multiple predisposing, precipitating, and perpetuating factors included in the ecology of human illness. The equilibrium of health or the disequilibrium of illness may be a distillate of the many factors in these two coalescent variables. Therefore, medical illness may be the result of decompensation in both the psychosocial and physiological areas [30].

In recent years the behavioral and social sciences have rediscovered their mutually reciprocal relationship with the medical and allied health professional disciplines. The union of these two seemingly disparate areas of health service, the changing patterns of human illness, and the concept

of the importance of medical epidemiology and ecology indicate that the doctor's task should emphasize the care and treatment of people rather than the care and treatment of disease [2,27,30].

The challenge of the acutely ill patient, emergency treatment, and the clarification of an obscure medical diagnosis offer a fascination and a dedication of effort which transcend all other considerations in medical school and resident work. This obtains despite the excellent and recently enlarged curriculum changes which give important catalog status to departments of preventive medicine, psychiatry, and psychosomatic medicine.

During the years of medical school education and residency training, the need to learn emergency lifesaving techniques — for example, the judicious use of vasopressor agents, cardiopulmonary resuscitation, the correction of electrolyte imbalance, the immediate surgical intervention, or the use of new and sometimes miraculous drugs — has high priority. The faculty members involved in these dramatic and lifesaving programs deservedly receive the highest respect and admiration from the students, and offer a prototype to which the students respond. Nonetheless, this is neither the main nor the bulk of the job with which most practicing physicians are occupied in their office practice.

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22

Psychiatric Interviewing Techniques

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The manner in which an experienced psychiatrist conducts an initial psychiatric interview varies with the patient's problems and the setting in which the interview takes place; ideally it should be tailored for the unique personality of each patient. At the time of the initial interview, however, the psychiatrist seldom has an accurate appraisal of the patient's personality so his techniques must evolve as the patient reveals himself during the course of the interview. I will present an outline of the initial interview under ideal conditions and then describe variations in technique that would be necessary in other common clinical but less than ideal situations. A more detailed discussion of the interview technique is available in a concise form in Colby's *A Primer for Psychotherapists*" and in Wolberg's two-volume *Technique of Psychotherapy* [2,4].

Collecting the data necessary for rational therapeutic planning (and this is what I mean by an initial interview) may be possible in a single hour session if a patient is particularly cooperative and intelligent, but it often takes several interviews.

Psychiatric diagnosis depends largely on the verbalization of the patient, for several reasons. Most behavioral disorders, even acute psychotic states, do not show observable deviations on physical examination or

from laboratory studies. Directly observed nonverbal abnormalities can give important clues as to diagnosis, particularly with the more severe disorders, but this often requires confirmatory observation of behavior over a twenty-four-hour period and hence depends upon the reliability of reported data from friends, relatives, or hospital personnel. If the informants are unobservant or biased, this introduces skewed data that interfere with the evaluation. Furthermore collecting data from sources other than the patient may be contraindicated for several reasons. The data most useful, then, for the psychiatric evaluation is that conveyed by the patient through both verbalization and nonverbal behavior during the interview. The validity of these data in turn depends upon how candid the patient is. This, of course, requires both trust and confidence in the interviewer. Nothing must take precedence over developing this trust.

The first impression the patient has of his psychiatrist is crucial; it determines to a large extent whether a therapeutic contract can be established and facilitates (or delays) the revelation of pertinent psychodiagnostic data. In this sense every contact with the patient must be therapeutic; that is, therapy starts even before a diagnosis has been made or a treatment plan designed.

No matter how cooperative the patient desires to be, there are inevitable distortions in his verbal reports. Often patients present themselves in the best light to impress the physician. Some may do just the reverse: exaggerate symptoms to elicit sympathy or for other secondary gains. The more remote the reported event the more likely there will be a retrospective reediting of that event. Thus, although early childhood experiences are known to be crucial in the subsequent development of the personality and predispositions for adult disordered behavior, the patient's memory of such events is a considerable distortion of what actually occurred. These childhood data, although they reveal how the patient remembers the past, are not an actual recapitulation of that past. The most reliable data are what the physician observes and hears within the interview session. The next most reliable data are the events that the patient reports took place in the previous few days. The least reliable data are information reported from the distant past.

You probably will not learn the patient's impression of you as a possible therapist. If the potential patient objects to your behavior, he is unlikely to report it, only later revealing this information with the preface, "I didn't want to hurt your feelings." Even if his feelings are more positive, patients are still reluctant to admit it, for it is a common human trait not to reveal even positive feelings unless there are signs of reciprocal attitudes from the other member of the dyad. Skillful interviewers learn to read between the lines, constantly making inferences while realizing that they must be corroborated by future data.

In summary, from the patient's verbalization, the physician learns what goes on in his mind — his inner world. We can observe directly only our own inner world, the inner world of others is revealed by what they say and what they do, and this depends on how candid they are or, again, how much trust and faith they put in us as experts. Our first effort, then, is to facilitate this trust so that the revelations will be as complete and as accurate as possible.

To evaluate this reported introspection, compare the patient's thoughts and feelings to your own. This is a subjectivity that is inevitable and a necessary part of psychiatry. Of course, there is a danger of distorted evaluation because of cultural or personal differences between the interviewer and the interviewee, so it is for this reason that psychiatric trainees are encouraged to undergo psychoanalysis or insight therapy so that they can become aware of their own biases that might lead to inappropriate conclusions and decisions.

Before the initial interview itself, ask yourself what kind of questions you want answered immediately and what you wish to accomplish other than gathering information. The questions that you ask yourself are not those you ask the patient; you must look for circuitous ways to discover the answers if you are to avoid the normal human need to reedit personal experiences. The questions you probably want answered are:

- 1 What is the problem as the patient sees it? As an objective observer might see it?
- 2 What precipitated the patient to seek help at this particular moment?
- 3 What is the reason that he is seeking help from me rather than from somebody else?
- 4 What kind of help does he expect me to give? What are the rational and the irrational elements of this expectation?
- 5 How has he tried to resolve these problems in the past?
- 6 How urgently does he need a resolution to the problem?
- 7 What factors are available, both internal and external, that will facilitate or hinder resolution of the problem?

Notice that the diagnosis at this stage is not an important issue except in the broadest sense, such as the following questions indicate:

- 1 Does he need further medical evaluation?
- 2 Is it likely that a psychopharmacologic regimen will be indicated, or are drastic emergency measures indicated?
- 3 Assuming that all patients need some form of psychological reeducation (psychotherapy), how important will this be to the

patient and what type of psychotherapy might be best suited for the patient's needs?

During the initial interview, therapy of some form must take place. The following considerations are essential:

- 1 Restore the patient's self-esteem. Even today patients usually feel that turning to a psychiatrist for help is a defeat. You must indicate that they were wise in seeking professional consultation (if you believe this to be the case).
- 2 If you anticipate the need for continuing psychiatric care, you should begin educating the patient as to a realistic expectation of what psychiatry can provide. In times of stress and distress all of us regress to the extent that we hope for some intervention that will solve problems without effort on our own part. We must dispel this attitude gradually but not so quickly as to destroy a still-tenuous therapeutic motivation.
- 3 Many patients are naive regarding psychiatric techniques. If this is true, some kind of orientation regarding the uniqueness of the procedure should begin.
- 4 If possible, convince the patient of your desire to help him with his problem as well as the effectiveness of psychiatric intervention.
- 5 If you can do so with a reasonable prediction of success, some minimal interpretation or confrontation indicating your expertise is desirable even in the first interview.

All these factors are utilized to develop and reinforce the patient's therapeutic motivation.

THE IDEAL SITUATION FOR AN INITIAL INTERVIEW

Under ideal conditions, the patient is self-referred—that is, his decision to seek help was his alone, and he selected you as his psychiatrist. Whether the basis for his choice is realistic, the fact that he initiated contact with you individually rather than through some other agent shows his acceptance of your expertise. You should have some information regarding the patient, either by messages from the patient or referral contacts, so that you can decide whether he is likely to be acceptable to you as a patient. In the ideal situation, the initial contact should be unhurried and not influenced by emergency demands so that you have the opportunity to nurture

a therapeutic motivation as well as an appropriate doctor-patient relationship.

Harry Stack Sullivan has proposed the following outline for the initial interview [3]:

- 1 The formal inception or putting the patient at ease.
- 2 Reconnaissance or encouraging the patient's spontaneity.
- 3 Detailed inquiry or questioning.
- 4 Termination or interruption.

Formal Inception

The patient often does not know what to expect from the psychiatrist or the psychiatric interview. In fact he may have many unrealistic expectations. His confusion is justified because there is something unique in the psychiatrist-patient relationship that is not simulated in normal social intercourse or even in past experiences with the medical profession. Begin this initial interview in a familiar manner. Greet the patient as you would anybody else; introduce yourself, shake hands, address him by name, invite him into your office in a friendly manner, offer him a seat, suggest that he make himself comfortable, and perhaps indulge in friendly chit-chat: "Did you have any trouble finding my office?" or "Is it still raining outside?" This interchange on neutral grounds, a familiar social interaction, can do much to make the patient feel at ease. As soon as possible, shift to a different but still familiar role — that of the usual doctor-patient relationship — by asking, "What is the problem?" If you have received information from sources other than the patient, state what you have learned and from whom in the most general terms, but quickly follow this with a comment that you would prefer to hear the story from him. I often say, "Assume that I know nothing," and then request that he relate the problem in his own words.

Reconnaissance

In the next phase encourage as much spontaneity as possible, asking the patient in general terms to describe his problems. During this period you can evaluate the patient's capacity for candid reporting of introspective data. Observe any nonverbal accompaniments to his comments, such as motor restlessness, emotional changes, and mannerisms. Particularly notice what areas the patient avoids to help you gain an initial impression of the patient's personality as well as his symptoms. This is the information

you will need to guide you in making appropriate interventions to facilitate the doctor-patient relationship and the therapeutic motivation. During this spontaneous reporting, you will make an early appraisal of the patient's suitability for deeper insight therapy, that is, his capacity for candid introspection.

Most patients need encouragement to be spontaneous. You must provide this in the least directive manner, such as nodding your head or repeating a significant word or phrase in the interviewee's preceding sentence with an inflection that indicates a question or a slightly more direct encouragement (such as "Tell me more"). If you must intervene in a still more direct manner, do so in a way that encourages the broadest possible responses: "Can you elaborate?" or "Perhaps you can give me a recent example," or "Anxiety means different things to different people." "Can you describe it further?" As a last resort, ask specific questions, but be sure that these questions cannot be answered by a single word or a simple "yes" or "no." For example, avoid such questions as, "Do you and your wife argue?" Instead ask, "How would you describe your wife?" or "What is your marriage like?" These questions stimulate spontaneous elaboration.

Eventually the patient will undoubtedly say, "It would help me if you would ask specific questions." Reassure him that you will do so, but explain the value of first hearing his story without interruption. Do not be afraid of brief silences. On the other hand, do not prolong these silences to the point of marked discomfort on the part of the patient. Above all do not interfere with the patient's spontaneity unless you think it is undue discursiveness.

Detailed Inquiry

At some point in the interview, you should initiate an inquiry that is not designed to clarify detailed biographic data or even to complete an inventory of symptoms. You need more important and immediately useful data, but remember that the wording of the question you formulate in your mind is not the manner in which you should verbalize it for your patient. Even in the initial interview, a more circuitous route is necessary to obtain reliable answers. Some examples follow.

EVALUATION OF THERAPEUTIC MOTIVATION

The manner in which the arrangements were made for the initial interview will give you important clues as to the patient's therapeutic motivation. For instance, how much coercion was exerted by friends, family,

courts, employer? What attitude did the patient have in response to such pressure? Try to identify a precipitating event that led to his seeking aid. Usually the patient's symptoms have persisted for months or even years before the patient finally seeks help. There must have been some event that precipitated his seeking help at this time. To clarify what it was will not only aid you in understanding the patient's therapeutic motivation but will often give important clues for crucial psychodynamic factors behind the problems. Consider how he chose you as a psychiatrist. Was it based on a realistic appraisal of your reputation, were you in some way more available than other possible choices, or was the patient assigned to you arbitrarily? If the last is the case (and this is often true in large clinics), then the development of the doctor-patient relationship and the therapeutic motivation will be far more difficult. Finally clarify the patient's expectations and evaluate how realistic these are. Sometimes patients are strongly motivated for the wrong reason. For example, if the problem is a marital conflict, the patient may be trying to elicit your support on his behalf in the struggle with the spouse. Even worse it may include the hidden agenda that you will be expected to appear in court as an expert witness during divorce or custody proceedings. It is important to clarify such motivations immediately so that you can state unequivocally your position as to how you will (or will not) help the patient in meeting these nontherapeutic expectations.

PATIENT'S CONCEPTS OF PSYCHIATRISTS AND PSYCHOTHERAPY

It is important in the initial interview to establish what previous contacts the patient has had with psychiatrists, as well as his perceptions of the psychiatrist's role. If there was a previous psychotherapeutic experience, try to elicit some evaluations of the type of psychotherapy and the patient's opinion as to the effectiveness of the procedures. If the patient has been treated with medication, particularly a psychopharmacologic agent, determine what his attitude was toward taking pills and which helped and which did not and why he believes one helped and the other did not.

CURRENT SOCIAL SITUATION

In order to make decisions regarding a therapeutic regimen, you need some information on the patient's current social situation because the plan you suggest will have to be compatible with these social realities. These might include the patient's residential location, living arrangements, support of family or others, employment situation, income, and working hours. Any one of these could preclude therapy with you. If so, then your immediate goal is to prepare the patient for referral elsewhere.

Termination or Interruption

The termination or interruption of the first interview must not be so abrupt as to be interpreted as disinterest or discourtesy; leave sufficient time for this phase. Include some broad statement as to whether the patient can be helped, and praise him for seeking advice. Often during the first contact, you will be unable to propose a specific regimen, but you can usually make a statement such as the following: "I still have a lot to learn about you, but it's my impression from what I know thus far that there can be a definite program which will help you." Then give some estimate as to when you will be able to propose a regimen, and discuss arrangements with the patient for the next appointment. Ask the patient whether he feels there is an urgent need for specific help before the next appointment. For example, does the patient suffer from severe insomnia or anxiety that would demand some palliative pharmacologic therapy. Even if you suspect that this is not true, asking the question indicates your desire to offer professional help. Again reinforce the patient's self-esteem for seeking help, and try to demonstrate in some way your therapeutic skill.

Note that no time has been devoted to discussing fees. Preliminary screening should indicate whether the patient is seeking private or clinical care and whether he realizes the extent of the commitment in either case. If the patient asks you for fee schedules, briefly give your range of fees and then state: "I'm sure we can make satisfactory arrangements, but it will be better to discuss fees when we decide upon a definite therapeutic program." This conveys to the patient that concern for his well-being, not financial self-interest, is your primary goal.

Notice that during the initial interview you have not systematically tried to collect biographical data nor have you done a mental status examination; that will be reserved for future sessions. Your prime effort in this ideal setting is to develop trust and therapeutic motivation.

COMMON VARIATIONS OF THE IDEAL SITUATION

Acute Psychiatric Emergency

In this situation, usually a hospital emergency room or admitting office, you will see acutely disturbed patients who either cannot or will not cooperate for data collection. You will need to spend time with other informants, a maneuver that is best avoided during the ideal initial interview because the emphasis there is on developing a doctor-patient relationship. Interviewing other family members or friends behind the patient's back can only inhibit this trust. In the emergency room, however,

immediate action is necessary, and the most reliable data should be obtained as quickly as possible; this usually means obtaining them from other informants. Often you will have to make an early decision on the basis of limited information. Sometimes this results in coercing the patient into a protective environment. In doing so it is inevitable that you will alienate the patient, and this may preclude your functioning as his therapist in the future. Nevertheless emergency requirements demand such action, and referral to another therapist can be made at the appropriate time. In planning your recommendations you must consider alternative resources: a general hospital admission, an admission to a psychiatric ward in a general hospital, voluntary or commitment to a psychiatric hospital, close supervision at home, immediate medication or emergency diagnostic tests (serum drug levels), "talking down" the patient, who is in acute emotional state, or under the influence of psychoactive drugs, or a more limited but prolonged observation in a holding area.

Consultation Requests from Medical Colleagues

Your first task in this situation is to ascertain what the patient was told as to the purpose of your consultation and his attitude about this. Often the patient's primary physician has not discussed referral to a psychiatrist, so when the patient discovers your specialty, he becomes resentful and uncooperative (and may refuse to pay your bill). In such an interview simply asking the patient what his problem is results in a recital of medical symptoms. To circumvent this, carefully review the patient's chart before the interview so that you can say, "I reviewed your chart so I am aware of your symptoms," and then guide his discussion to more meaningful psychological data, perhaps by asking about his current living arrangements or life situation, job satisfaction, or interpersonal relationships. In most instances it is unrewarding to ask the patient to review his somatic complaints.

Brief Psychiatric Interview

The setting for a brief psychiatric interview is often a busy outpatient clinic or emergency room. Again the decisions on treatment must be reached quickly. This requires snap judgment based on experience and thus should, if at all possible, be avoided by the neophyte unless he is closely supervised. Even experts have a large opportunity for error, and some protection against such errors should be built into the system. For example, when you prescribe medication, encourage the patient to call

you within twenty-four to forty-eight hours to report the effects of it so any adjustments of the dose or a change in medication can be made. Otherwise the brief psychiatric interview is a condensed version of the ideal type. An experienced psychiatrist can often elicit information that answers the questions pertinent for the initial psychiatric interview in twenty to thirty minutes.

Medical Model for Psychiatric Interview

Some patients cannot tolerate the psychiatric interview and instead insist upon being treated as they would by their primary physician. They may demand immediate suggestions and guidance and expect frequent direct questions from you, as well as answers to their questions. They may not cooperate with the psychiatric orientation that demands a shared venture with shared responsibilities. If you are unsuccessful in gaining the patient's cooperation within the psychiatric model, you must decide whether to give in to the patient's demands. One potent psychological tool that seems to meet the medical model, at least as far as the patient is concerned, is hypnosis. Patients accept it because they feel something is being done to them and for them; they do not realize that a basic mutual cooperation is required for the induction of the trance state. This energetic activity on the part of the therapist is similar to the way internists or surgeons act. Others may demand medication rather than prolonged discussion. In these instances, it may be necessary to accede to this demand, postponing the development of a psychiatric orientation perhaps by prescribing homeopathic doses of drugs for their placebo effect. Doing so gives time for the patient to develop other attitudes more compatible with the psychiatric model.

Other problems may arise for those coerced into therapy, but despite the coercion, it is surprising how often a cooperative therapeutic motivation can develop if you seize every opportunity to encourage the patient's continuing contact with you while slowly developing such a motivation. Sometimes the patient may pretend that he has been coerced into therapy to help him maintain his self-esteem.

Acute Emotional State

Initial interviews of patients who are acutely anxious, depressed, or rageful demand an extensive modification of the ideal initial interview. Such patients will associate only with situations that enhance this emotional state. Thus if they are allowed to report their thoughts freely, they can

think only of events that will increase their depression, anxiety, or rage. In these cases emotional support to ameliorate these intense feelings is your priority. Brian Bird's *Talking with Patients* is a valuable source for techniques to deal with acute emotional states in patients [1].

CONCLUSION

For any medical situation appropriate diagnosis and treatment depend upon accurate data. What is unique to the psychiatric interview is that these data are provided by the patient's revelations about his inner thoughts and feelings. In this unique setting, which lacks data from an objective physical examination or laboratory studies, the crucial issue becomes one of establishing a trust between the psychiatrist and the patient, for only in the setting of trust and openness will the patient give the accurate data necessary for planning a rational therapeutic regimen. Because patients are often frightened of psychiatrists and believe that seeking psychiatric help is a defeat, they may feel insecure and doubtful about whether they really want or need psychiatric treatment. Furthermore all of us, particularly in times of distress, will distort our thoughts, feelings and experiences, often without any conscious desire to do so, so the psychiatrist faces still another problem: inferring data by interpreting the patient's verbalizations and nonverbal behavior. Thus the initial interview is primarily a time to establish a proper doctor-patient rapport and a therapeutic motivation.

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Social Factors Affecting Health, Illness, and Treatment

Gerard J. Hunt, Ph.D.

In thinking about health, illness, and the treatment of illness, the picture that most frequently comes to mind is that of a practitioner and a patient in a relationship in which the patient presents a series of symptoms and the practitioner searches for a constellation that will comprise the correct diagnosis and indicate a course of treatment. Both focus upon physiological and biological processes and, sometimes, stress-related psychological factors. Until recently few practitioners have given much thought to other aspects of their patients' lives that lie beyond this one-to-one encounter, though most are aware that health, illness, and its treatment occur within a social context, not a vacuum. A patient's social characteristics can influence each stage in his progress from the development and definition of an illness through the final stages of rehabilitation and return to health.

INDIVIDUAL SOCIAL FACTORS AND HEALTH CARE

Health care is more than the encounter that occurs between a practitioner and a patient. It is also a process that begins with a patient noticing some

change in himself and defining this change as a symptom of illness. The patient may try a series of homeopathic remedies before consulting outside sources and contact a number of practitioners (pharmacists, root workers, healers) before seeking the services of a physician. When the patient successfully obtains the services of a physician, he may encounter one or a number of parts of the health care system and a number of its practitioners. This encounter may be as short as a few minutes or as long as many years. If successful, there follows a process of rehabilitation (of varying length) and, if that is successful, the return to full functioning and a state of health.

At any point in this continuum, the symptoms may subside and the would-be patient returns to normal functioning, or the symptoms may become exacerbated and the patient may seek care on an emergency basis.

The patient's progress through each of the stages and the choices he makes at each stage are heavily influenced by his particular combination of social characteristics. At times one social characteristic may play a dominant role, but most often it is a combination of factors that must be considered in understanding a patient and the choices he may make.

If the practitioner's goal is to return the patient to a state of full functioning and well-being, he must take into account all that has gone before their encounter, and potentially what may follow. He must understand the social characteristics of the patient and the social context in which the symptoms and underlying illness occur.

SOCIAL FACTORS AND THE PROCESS OF HEALTH AND ILLNESS: RESEARCH FINDINGS

One of the best-known relationships between social factors and health is that American males have a shorter life expectancy than American females. The age at which American males die is as much as eight years younger than their female counterparts, and at some ages they are "up to five times more likely to be murdered, four times more likely to die in an accident, seven times more likely to kill themselves, five times more likely to die of alcoholism-related causes, seven times more likely to die of lung cancer, and four times more likely to die of coronary heart disease" [21:46].

It is perhaps less well known that females have higher age-standardized rates of both acute and chronic illness and suffer a higher degree of disability (restricted to bed and unable to perform expected roles) because of acute illness [44]. These findings hold even when reproduction-related events are removed from analysis.

Recognizing Symptoms

One explanation offered to deal with the discrepancy between reported morbidity and mortality in females is that different patterns of socialization for males and females in the United States lead them to different perceptions of symptoms, assessment of their importance, and motivation for action [31,32,44]. Males are socialized to ignore symptoms [6,10,30,35]; females may be more aware of bodily changes and more willing to report symptoms to others [44]. This hypothesis, however, does not explain Johnson's finding that although women over fifty-four years old have a lower probability of developing coronary heart disease, they have higher actual levels of three important risk factors: systolic and diastolic blood pressure and serum cholesterol [21].

In addition to sex, socioeconomic status and ethnicity have consistently been found to be related to knowledge of disease and reporting symptoms [12,16,23,41]. The relationship between class and ethnicity, on the one hand, and knowledge of disease and recognition of symptoms on the other, is not simple or direct. It requires that the practitioner know something of the particular subculture from which the patient comes. The research suggests that if the subculture is supportive of modern medicine, a person is more likely to have knowledge of disease and recognize symptoms promptly; if the subculture is indifferent or hostile to modern medicine, the opposite will hold true [16].

Defining One's Self as Ill

After the person has recognized the symptoms, the next stage concerns whether he will define himself as ill. Many factors influence this decision, including the severity and persistence of the symptoms, the degree to which they interfere with normal functioning, knowledge about underlying causes, and tolerance for pain and discomfort [29]. A man who collapses with severe chest pains, a woman with excessive vaginal bleeding, and a child with a fractured arm probably will define themselves as ill regardless of their socioeconomic status, race, ethnicity, or religion. However, as with all other aspects of health and illness behavior, social factors provide the context for whatever decisions are made.

We know, for example, from both field and laboratory studies that members of different ethnic groups have different tolerances for pain [39,47] and that the ability to tolerate pain is associated with the meaning given by the social context in which it occurs [7,24]. Soldiers wounded in battle requested medication to relieve pain in far fewer numbers than did civilians suffering less tissue trauma. The soldiers' wounds meant relief

from battle and going home, while the civilians viewed their surgery as a negative and frightening life experience [7].

Age has also been associated with tolerance for pain; older persons have been found to be more frequent complainers [17]. (However, more recent research has shown that self-health ratings by those sixty years old and older were positively related to physicians' ratings of health [25]. Older people may complain more, but they also may have more to complain about.) Finally socioeconomic status and ethnicity have been found to be related to decisions regarding illness [11,23]. One respondent illustrates the relationship between symptoms, interruption of normal function, and defining oneself as ill: "I wish I really knew what you mean about being sick. Sometimes I have felt so bad I could curl up and die, but had to go on because the kids had to be taken care of, and besides we didn't have the money to spend for the doctor — how could I be sick?" (quoted in Mechanic [29]).

Seeking Health Care

Not everyone who recognizes symptoms and defines himself as ill seeks health care. Estimates are that although three-fourths of the total population may have symptoms similar to those being seen by physicians every day, only about one-third of these will seek a physician's care. [27,45]. The evidence indicates that people will seek care when symptoms are unfamiliar to them [23,25] and/or cause disruption in their normal daily activities [5,27,40].

Even under these circumstances, they may not seek the services of a physician. They may delay, hoping the symptoms will subside; try homeopathic remedies; consult with relatives, friends, and other health professionals; and only then seek a doctor's help [40]. The prospective patient may consult a number of physicians in an attempt to find one in whom he can have confidence, can afford, and can see without major inconvenience [22].

The decision to seek health care and the kind of care sought are influenced by a variety of factors (severity of symptoms, disruption of activities, unfamiliarity of symptoms) which operate at each of these choice points. The social factors found especially influential in decisions to seek health care include sex (more women than men seek care) ethnicity, and family orientation and composition [1,4,18,19,27,36,38]. These factors plus some others apparently provide a set of norms that influence and often direct the person's decisions and subsequent health and illness behavior [27].

Practitioner-Patient Encounter

Depending upon such social characteristics as race, residence, and income, the patient who has decided to seek a physician may find that he has limited access to care. Nonwhites, rural farm people, and the urban ghetto poor have less access to medical care than the severity of their reported symptoms would indicate they should have [38,43].

If contact with a physician is made, the encounter itself is also influenced by a variety of sociopsychological factors. Physicians and patients may differ from one another in many major social characteristics, and these differences may produce vastly different perspectives and expectations about symptoms, their underlying causes, and each other. [27]. Every difference in social characteristic between patient and physician makes it more difficult for them to communicate effectively with one another [20,26]. For example, the patient may be alarmed by unfamiliar and disruptive symptoms and expect immediate action from the physician. The doctor's view of the symptoms and required action may be quite different, and he may fail to conform to the patient's wishes. If this difference in perspective is not handled well in their communication, the entire encounter may collapse, and a very low level of patient compliance will result [47].

Rehabilitation

If the desired outcome of treatment is to return the patient to full functioning and a state of well-being, the patient must cooperate in the treatment. The data, however, indicate that the degree of cooperation and level of compliance is not high (see chapter 18). Much research has been undertaken in an attempt to isolate the individual characteristics of patients who do not conform. Patient abilities and personality traits have been studied, sociocultural characteristics have been examined, and attitudinal orientations have been investigated. No clear pattern has emerged, and many of the findings have been contradictory [42].

Recent research suggests that the relationship between the physician and the patient may influence compliance more than the individual characteristics of the patients. When an effort was made by the physician to motivate and instruct the patient, and when there were fewer complaints regarding the treatment plan, compliance was higher [42]. Differences in social characteristics between patient and physician will make this kind of effective doctor-patient communication difficult, but physicians can develop skills in these areas and thereby improve their patients' compliance [20].

Health Maintenance

The final stage in the process of health and illness concerns the return of the patient to full functioning and a state of health. The task at this stage is to prevent a recurrence of illness and to maintain the healthy state.

The research literature in this area is hopeful; a positive attitude toward the use of preventive services is reported by the majority of those Americans surveyed [2,14]. However, although everyone may be in favor of using preventive services, not everyone does. Persons of low income appear less likely to have a regular source of care [2] and to utilize preventive care services [8,32,38]. Further the economic and culturally disadvantaged suffer from a sense of alienation and powerlessness, which in turn is related to a low level of utilization of preventive services [9,19,32]. A recent study found not only socioeconomic status and social relationship variables highly correlated with the utilization by mothers of preventive services for their children but also that children who had not used preventive services were in poorer health [37]. (It is important to note that these data are correlational in nature and that other factors — e.g., psychological — no doubt will be shown to be involved in whatever causal chain is finally discovered.)

As with decisions in each of the other stages of the process of health and illness, these social factors combine to form the social context within which decisions regarding the use of preventive services are made. Other important variables (e.g., physiological and psychological) influence these decisions and the behaviors that follow.

This chapter, illustrates how a variety of social factors influence the decisions that are made at each stage of the process of health and illness. From the recognition of initial symptoms through the decision to seek care, and the encounter with health care deliverers, to the final stage of health maintenance, the patient's social context plays an important role in the choices he makes. What are the implications of these findings for the practitioner?

In encountering the patient, the practitioner engages at once a total person with the biological, physiological, psychological, and social processes blended together in the patient. We do not yet understand how these systems influence each other, or what effect each has on the patient's process of health, illness, and treatment. Achieving this understanding represents the next challenge for medicine [15]. For now the practitioner must be certain that information regarding all of these major systems is included in each patient's history. If he neglects any one, he does so at the risk of losing a valuable source of knowledge that will be useful in the diagnosis, treatment, and rehabilitation of the patient. An example may

serve as an illustration. A third-year student was presenting a workup on a diabetic patient whom he had just interviewed and examined. Toward the end of the presentation, he was asked if the patient (a male) was married and currently living with his spouse. The student wondered why that was important to know and came to realize that it represented the first step in finding out whether he ate most of his meals at home or in restaurants and who had the responsibility of preparing those meals. If the man needed a special diet for his diabetes, some knowledge of these aspects of his life is important.

Inquiring about all aspects of patients' lives, including the psychosocial, takes only a few moments during a complete history, and, as in the case of the physician who discovered the Kepone levels in his patient's blood, inquiring about such factors as occupation, may save a person's life [13].

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Social Institutions and the Organization and Delivery of Health Care

Gerard J. Hunt, Ph.D.

Institutional factors influence the delivery of health care in the United States just as the patient's individual social characteristics do. An examination of the major social institutions that contribute to the social organization of our society reveals that the delivery of health care is the fastest-changing social institution in the nation. It is changing so rapidly that research into its processes and outcomes has a difficult time keeping pace. One reason is the conversion around it of five major societal forces: medicine, government, industry, organized citizen groups, and the mass media. Each of these five is also changing within itself and with reference to the other four institutions. One effect of this double-change process is a highly charged, conflict-laden atmosphere around health care delivery.

MEDICINE

During the past half-century, medicine has experienced unparalleled scientific and technological development. Since 1910, when Abraham Flexner

formally linked science and medicine, enormous advances have been made in our abilities to understand and treat illness. During this time, the focus has been more on illness than on how to eliminate many major causes of death and disease in our country and throughout the world. Health, however, is more than the absence of illness and disease. It requires an understanding of other human processes (e.g., social and psychological) in addition to our knowledge of biological and physiological processes. It also requires an understanding of a patient as a total human being rather than as a collection of highly differentiated physical and psychosocial systems.

Until recently our knowledge of human behavior and its affects on health and illness was extremely limited. As more knowledge is gained in this area, it is applied quickly. Thus one major change in medicine has been a gradual shift in emphasis from an exclusive focus on illness and disease to a wider focus that includes health as a state of human well-being. The increasing number of medical school courses dealing with human behavior, ethnics, human values, and humanistic medicine provides evidence of this change.

The second major change within the institution of medicine concerns a change in some elements of the health care delivery system itself brought about by a technological sophistication of dazzling proportions. Nevertheless the current health care delivery system has a number of major problems: (1) the system is highly individualized and characterized more by competition than by cooperation; (2) the benefits of the system are not available to all persons equally; and (3) the ever-increasing cost of health care is often ruinous to individuals, families, and the economy as a whole.

Individualization, Free Enterprise, and Competition

A wide variety of individuals and organizations are currently involved in the delivery of health services. These include private practitioners in general and specialized practices; therapists and counselors dealing with both physical and mental problems; voluntary, proprietary, and government-sponsored hospitals; special care units, such as extended-care facilities for the chronically ill; and emergency medical units inside and outside hospitals. If these were well related to one another, we could speak of a health care delivery system in our country. In fact, however, most of them are operating as individual entrepreneurs in a modified free enterprise system.

Problems in this type of system arise because of a lack of communication, cooperation, and coordination between and among the parts. Patients are transferred from one hospital to another without appropriate

communication about their current status and previous treatment. They are released from state mental hospitals without proper notification being sent to aftercare facilities within their community. Others with multiple and interrelated medical problems are shuttled back and forth between and among the various specialty units in order to obtain adequate care. Patients seeking care from more than one practitioner may be issued prescriptions for medications that should not be combined.

There are also problems for the system as a whole. Health care deliverers often find themselves in competition with one another for scarce resources, including patients and their fees and also the financial support of federal, state, and local government. The result is a large-scale duplication of services, equipment, and efforts. New hospitals have been built in communities where hospital beds stand empty. Hospitals within a short distance of each other insist on having the same expensive equipment. Some machines are used frequently, but others stand idle, and all must be staffed by highly trained and highly paid technicians, which adds to the cost of service. This cost is borne by the patients who require it and by taxpayers who provide the federal, state, and local resources to support it.

Some efforts must be made at coordinating and integrating the various parts of the health care delivery system. This will require collaboration on the part of health care deliverers. The change will not be easy since a strong ideology exists in the health care field for a competitive free market system.

Availability

Despite the recent increase in the number of physicians practicing in the United States and despite governmental efforts to make health care more available, there are still large segments of the population who are not served, particularly those in the inner cities and in rural areas [11]. The reason may not be the cost of care or disenchantment with deliverers or the system but that persons who are trained to deliver services do not live in the areas where these people do. Physicians and other health care personnel tend to settle in the more populous suburban areas; their choice of location is influenced by the number of affluent patients and the life-style provided by this environment.

This current distribution of primary health care personnel presents a grave problem for segments of the population who do not have access to them, and a number of national efforts aimed at remedying this situation are underway. Some health care personnel who receive federal subsidies for their education, for example, may be required to practice in an underserved area upon graduation [2]. These changes may be difficult for such

people to accept, and whether they improve the accessibility of health care professionals remains to be seen.

Cost of Health Care

Another major change occurring within medicine concerns the rapidly expanding cost of providing health care. In 1976, health care spending in the United States reached a total of \$13.3 billion, an increase of \$17 billion, or 14 percent, over 1975 — more than double the increase in the consumer price index.

Health care professionals, economists, and government officials all share a concern over the rapidly rising cost of health care. It is clear that if the proportion of the GNP spent for health care keeps rising (it is now 8.6 percent), it will have a major detrimental affect on the economy as a whole and on families who will have to cut back in other sectors of their living, such as housing, food, and clothing.

Past efforts to control the rapidly expanding cost of health care delivery have met with little success because of the conflicting interests of the parties involved (medicine, government, and industry) and the lack of clarity about which aspects of the health care system are making the major contributions to its rapidly expanding cost.

Since hospital care has been considered a major contributor to the rising cost of health care, and since hospital care now involves high labor costs, economists have felt that much of the rise in the cost care could be attributed to increases in wages for hospital workers. A closer examination of this hypothesis, however, reveals that increases in hospital workers' wages may not be as important a determinant as they were once thought to be. A staff study by the President's Council on Wage and Price Stability reveals that "although hospital wage rates have risen more rapidly than wages in other parts of the economy, these relatively greater wage increases are responsible for only a small part of the overall increase in the cost of hospital care" [1]. The same study also found that the portion of a daily hospital bill that can be attributed to labor has been decreasing over the past two decades. Thus although wages for hospital workers no doubt contribute to the rising cost of health care, they may not be as dominant a factor as previously believed.

Another explanation for the rapidly rising cost of health care includes the technological advances that make possible far more medical care for patients than ever before. Furthermore, physicians' fees have escalated. These combined with patients' expectations that they will receive the best that medicine has to offer, make the delivery of modern health care extremely expensive. The public's apparent lack of concern about the rising

cost of medical care is exacerbated by the fact that the cost of hospital and other kinds of health care does not represent an out-of-pocket expense for the patient. Health insurance now pays the major portion of hospital and other health care cost.

These three factors combined (public expectations, advances in medical technology, and third-party payments) may be the major contributors to the rapidly rising cost of health care. It may not be possible for the economy to continue to support the rapid escalation of these costs. Pressures are now being put upon medicine and other health care deliverers to make changes in this regard. Their response to these pressures for change may prove to be the most significant development in health care delivery in this century.

GOVERNMENT

Major conflicts occur between medicine and government around the issue of health care delivery. Because government is currently providing a significant portion of the total resources for the delivery of health care (26 percent), it claims the right to control and regulate activities in the field. For example, federal and state governments have taken steps to increase the number of health care practitioners currently available and to ensure their equitable distribution. These efforts have met with some resistance from both organized medicine and individual health care practitioners.

A more dramatic conflict is occurring around government's attempts to regulate the cost of health care. The most recent example of these efforts include a presidential proposal to limit the annual increases allowed in hospital costs. Immediately afterward, the media carried stories of planned government proposals to limit physicians' fees. Further nine states currently have legislation establishing review commissions to limit hospital costs [1].

Despite these efforts, some writers believe that health care costs will continue to accelerate [9]. The reasons are a lack of a coordinated program both within and between levels of government and resistance from organized medicine and health care industries. The president may propose legislation limiting costs, but it is uncertain whether Congress will enact it in the face of major lobbying efforts by the American Medical Association, the American Hospital Association, and pharmaceutical firms. Even if enacted, there is a question whether regulatory agencies will be able to enforce such legislation. Abuses in the Medicare and Medicaid programs make the outlook here less than optimistic.

Another issue around which the federal government and organized medicine are currently in conflict concerns national health insurance. It

seems clear that no efforts will be made to pass national health insurance legislation until the costs of health care are more successfully under control. Four major issues in the proposals that have been made stand out: financing, administration, quality assurance, and benefits [4].

Proposals for financing range from a payroll tax supplemented by general revenues to the individual purchase of private insurance, with contributions from the federal government to provide coverage for those with low income. Some call for the program to be administered by the private sector (e.g., insurance carriers) or state entities (e.g., state health commissions). Others call for a stronger role for the government with review boards at the federal, regional, and local level. Some bills contain no provision for quality control; others seek to extend the review of practitioners' services currently done by the professional standards review organizations. Finally, some proposed legislation includes comprehensive coverage; others provide only for catastrophic benefits to protect against the cost of serious illness or accident.

ORGANIZED CITIZEN GROUPS

Participation in health affairs by organized groups of nonproviders is not a new phenomenon. For decades affluent citizens from the community have sat on the boards of hospitals and local health departments. During the 1960s, however, the style and impact of citizen participation in health and human service delivery began to change dramatically. For the first time, a series of social programs, which culminated in the Economic Opportunity Act of 1964, mandated that recipients of services (minorities, the poor, and the disadvantaged) play a role in the programs provided for them [5].

Although the effects of citizen involvement have been disappointing, the social movement for consumer participation and control over human services is still potent [3]. The movement is supported by a national ideology of participatory democracy and an active desire on the part of local citizens for a voice in the tax-supported services provided to them. Groups such as Common Cause, Ralph Nader's public interest research groups, and voluntary associations formed around specific health problems such as the Heart Association and the Mental Health Association all attest to the growing strength of this movement.

These groups influence patterns of health care delivery in a variety of ways. Some collect funds for research and service programs, some lobby before federal, state, and local legislatures for funds for service programs, and some promote public health by messages in the national media. Still others testify before congressional committees and utilize the media to

point up shortcomings and abuses within the system. Sometimes the effects of the activities of these voluntary groups are quite noticeable; at other times little immediate change is apparent.

Another set of organized citizen groups has the potential for a significant impact on health care delivery. These are groups mandated by federal legislation. As such, they can control federal funds made available for health care. Two of them are the governing bodies of health systems agencies (HSAs) and the governing bodies of community mental health centers.

Health Systems Agencies

In passing PL 93-641, the National Health Planning and Resource Development Act, the Congress and executive branch hoped to establish a national health planning system to assess need, plan the development and implementation of programs, and review and comment on health facilities [12]. Each HSA is to be run by a governing body whose majority is to be consumers (nonproviders of health care). Although these HSAs control only a small portion of federal funding for health services, their current influence on local services can be substantial, and their future control over resources could be significant [12].

Like PL 93-641, the Community Mental Health Centers' amendments of 1975 (PL 94-63) require a citizen governing board for the operation of federally funded community mental health centers. Very few of these boards are currently operating, and there are still many problems to be solved before they can function effectively; nevertheless they are a potentially powerful force in the delivery of mental health services since they will have control over the budgets of these centers [6].

Organized consumer groups have survived the first decade of their life and seem stronger now than in the past. It seems likely that health professionals will have to deal with them just as they must with the representatives of other institutions who interact around the delivery of services (government, industry, and the media). Those who ignore these groups or deal with them irresponsibly do so at their peril, for the groups have the power to disrupt services and are legislatively mandated to determine important aspects of the methods in which health and mental health services are delivered.

INDUSTRY

A number of major national industries are involved directly and indirectly in providing health services, and they have a major influence over the

changes that occur within the system. The drug industry, the nursing home industry, the health insurance industry, and the medical technology industry are some of the major elements of private enterprise that have a substantial investment in health care delivery in the United States.

The 1976 Annual Survey Report of the Pharmaceutical Manufacturers Association (PMA) reveals that 1975 worldwide prescription pharmaceutical sales were \$12.2 billion; domestic sales were \$17.4 billion. Prescription drugs for the central nervous system topped the list of classes with 25.8 percent of total sales. Twenty-one firms (83.5 percent of the total market) listed domestic sales of over \$1 million [7].

The nursing home industry also has a significant vested interest in a portion of the health care delivery system. Its 1976 revenues topped \$8.5 billion, and its prominence as a growth industry can be seen from the 140 percent increase in nursing facilities between 1960 and 1970 and the 122.6 percent growth between 1969 and 1972 in total assets of 106 publicly owned nursing home corporations.

Each of these four health industries employs many people, pays a significant amount of tax, and contributes to the overall growth of the nation's economy. Each influences the delivery of health services in a significant way. Private insurance pays a major portion of the health care bill. The drug industry schools physicians in the use of their products and operates their own media. Nursing homes provide a needed service, and sophisticated medical technology makes miracle medicine possible. Each of these industries maintains strong lobbies at the national, state, and local levels and, in the face of their economic and political strength, medicine, government, the media, and organized citizen groups find it difficult to create changes within them.

Although there is ample evidence that many nursing homes are not providing adequate care for their patients, there is national concern about the overprescription of drugs that affect the central nervous system, and though adverse drug reactions take an estimated 30,000 American lives each year [8], very little change in the operations of these industries occurs despite the efforts of the other four health care institutions.

MEDIA

In addition to being big business, health care is also big news. Major newspapers carry stories about health and health services almost daily. The cost of health care is often featured news. Radio and television carry daily reports about health and the delivery of health services, and each national television network carries one or two special broadcasts each year dealing with some aspect of health and health services. Documentaries

such as CBS's "Health Care in America" (1970), NBC's "What Price Health" (1972), and ABC's "Women's Health" (1976) have highlighted important problems in the area of health care delivery. The media often present health care practitioners, especially physicians in private practice, as villains who perform unnecessary operations, refuse to service towns and rural areas, and are insensitive to the needs of their patients. Organized medicine's attempts to defend itself are often ineffectual.

Since the media maintain a substantial degree of credibility, their portrayal of the health service problems and the solutions to them have an enormous influence with the American people and their elected representatives. Media's focus on health almost demands a response from government. Government's attempt to change health-care delivery (e.g., by lowering its costs) will run into opposition from organized medicine in the health industries. Organized citizen groups may then step in and encourage the media's involvement again, and another round in the conflict will ensue. In order to improve health care delivery in the United States, a more productive means must be found to negotiate the issues involved.

The area of health care delivery is one of the fastest-changing institutions in American society. The conversions of the major institutional forces outlined in this chapter make it clear that change will continue at a rapid pace. If the results are an improved health care delivery system, responsible negotiations must take place between the major parties involved. The individual members of each institution must take a responsible role in bringing their point of view to the bargaining table. If this does not occur, conflicts will rage uncontrolled, our system of health care will be seriously weakened, and all of us will suffer as a result.

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25

Organization and Delivery of Mental Health Services

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Mental health services are not organized in a uniform manner in the United States. The variety of services offered and the array of settings in which they are delivered at first glance appear more chaotic than organized. Moreover, it is difficult to specify with any precision what constitutes a mental health service, for such social institutions as schools, churches, and the mass media are considered by some to play a role in the prevention and amelioration of problems for which people might otherwise seek direct psychiatric care.

This chapter focuses on services provided by physicians, nurses, psychologists, social workers, and other full-time mental health workers, but it is noteworthy that many Americans receive counsel and advice from clergymen, fortune-tellers, itinerant and indigenous healers, bartenders, hairdressers, and others. In addition, many fee-for-service activities are currently being offered as "therapy" by quasi-professionals and nonprofessionals; although such services comprise a sizable industry (especially in California and certain large, urban centers) they are beyond the scope of this chapter.

Conventional mental health services include the entire spectrum of psychiatric treatment modalities discussed in other chapters of this book, as well as such services as diagnosis and evaluation, consultation, education, and referral. There is no system by which these myriad services are coordinated. A comprehensive account of the organization and delivery of mental health services would include data on the utilization and effectiveness of various types of service. As indicated in the first two sections of this chapter, such data are unavailable. Thus, only a descriptive account is possible. In this chapter mental health services are divided into three delivery sectors: the general medical sector, the private mental health sector, and the public mental health sector. Although the general medical and private mental health sectors currently deliver care to more patients than the public mental health sector, this chapter devotes particular attention to the public mental health sector because of its greater degree of formal organization, its increasing importance in the delivery of services, and the likelihood that forthcoming national health insurance programs will more closely approximate the programs developed in the public mental health sector.

UTILIZATION OF MENTAL HEALTH SERVICES

The question of who uses mental health services in the United States is one that has never been answered satisfactorily. A few observations have been made repeatedly: women are greater consumers of mental health services than men; utilization is higher in urban than in rural areas; low-income groups in the population receive disproportionately more inpatient treatment than middle- and upper-middle-income groups, while the reverse is true for outpatient treatment; and those social groups having access to insurance coverage for mental health care have higher utilization rates than similar populations without such coverage. Beyond these generalities, however, understanding of the use of mental health services is limited.

This situation derives for the most part from limitations in available data. Most utilization data come from one of three sources: insurance statistics, hospital and clinic records, and case registers within particular geographic areas where detected psychiatric conditions must be reported to governmental authorities. Each of these types of data is associated with problems of interpretation. Insurance statistics can provide considerable information about utilization among insurees, but because this group is not representative of the population at large, these data cannot be generalized. Hospital and clinic records are seldom combined for a broad enough spectrum of facilities to show who uses a particular kind of hospital or

clinic. Beyond this, such data reveal nothing about care delivered outside these facilities, most notably by private practitioners in their offices. Case registers are plagued by serious problems of underreporting, and, in the United States, have been developed only for restricted geographic areas.

Accurate, detailed information about service utilization rates is important for those involved in the planning, administration, and evaluation of mental health programs. Although individual providers clearly have less use for such data, they should be aware of one fallacious use to which utilization data are occasionally put: the drawing of epidemiological inferences about the disorders being treated. Even the best utilization data reveal nothing about mentally ill persons not under treatment. Disproportionate representation of one social group among those receiving treatment for a particular disorder cannot be taken as an indication of the prevalence of the disorder among members of that group in the population at large. If it were found, for example, that redheads have higher utilization rates for the outpatient treatment of depression than do brunettes, this does not necessarily imply that brunettes suffer less from depression. It may mean that redheads are more likely to recognize depression in themselves, to seek professional help when it is recognized, to be offered treatment when care is sought, to be diagnosed as depressed rather than as something else, or any combination of these. These interpretations can be disentangled only through comparisons of utilization data with information gathered from general population studies.

EVALUATION OF MENTAL HEALTH SERVICES

Although considerable information is available concerning the efficacy of specific psychiatric treatments (most notably the pharmacologic treatments developed within the past two decades), little is understood about the organizational features of a service system that contribute to quality patient care. Moreover it is far from clear as to what constitutes quality of care, the crucial dependent variable in any evaluation of mental health services.

The majority of program evaluations report data only on the process of care, such as utilization frequencies or the adequacy of record keeping, and do not address the issue of the outcome of care, which would be a more objective indicator of the quality of care. The relationship between process data and the quality of services provided is never clear. Moreover even studies that do report on outcome measures are in many cases handicapped by their failure to approximate what is generally regarded as the best tool in such research: the randomized controlled trial. This technique,

which is nothing more than what nonmedical sciences call an experimental design, is relatively easy to employ in evaluating specific treatments within a single system of service delivery. Schizophrenic patients in a particular hospital, for example, can readily be assigned randomly to treatment groups receiving either a newly developed neuroleptic or a placebo. In contrast opportunities rarely exist for randomly assigning prospective patients to mental health programs differing on such organizational variables as staffing patterns, type of services provided, or method of payment. For this reason most evaluative research in mental health care delivery consists of reports of single innovative programs. Because comparisons between such studies are rarely practicable, there are no definitive answers to questions as to whether particular systems of providing mental health care are superior to others.

THE GENERAL MEDICAL SECTOR

Many mental health services are provided by nonpsychiatric physicians and nurses, with or without consultation from psychiatrists, psychologists, or social workers. Every practicing physician is called upon to manage psychosomatic conditions, anxiety, depression, behavior problems, addictive disorders, and family disharmony. Physicians have varying degrees of interest and skill in recognizing and treating such difficulties, which underlie a wide variety of patient complaints [3]. Nonpsychiatric physicians frequently undertake the management of mental retardation, hyperkinesis, and conduct disorders in children, depression and dementia in the elderly, and anxiety and delirium in all age groups, in many cases, it is in the patient's best interest that these and other psychiatric conditions be managed by the patient's usual family practitioner, pediatrician, or internist.

The organization and delivery of mental health services within the general medical sector do not differ substantially from the organization and delivery of other medical services. The organizational forms span a wide range, and many of the barriers patients encounter in seeking care reflect organizational factors. To a limited extent, organizational differences are broached by the traditional values, ethics, and role behavior of physicians and nurses. In the general medical sector, the priorities and skills of individual physicians and nurses are probably more important than the source of financing (private or public) in determining the kinds and quality of mental health services provided.

Although it is widely agreed that patients with psychosocial and psychiatric difficulties constitute a sizable proportion of all primary medical care [5], the management of these difficulties by primary care physicians has been a badly neglected area of study [9]. Appropriate data are

not available on the utilization or effectiveness of primary care physicians in managing mental health problems. Thus although much is known about the organization and delivery of general medical care, little is known about the provision of mental health services in this sector.

THE PRIVATE MENTAL HEALTH SECTOR

In 1970, the last year for which national psychiatric manpower data are available, 278,535 physicians in the United States were actively involved in patient care. Of these, 18,258 specialized in psychiatry [10]. A separate study conducted in the same year indicated that psychiatrists spent 45 percent of their time in private offices and 4 percent in private mental hospitals; 7 percent of time was spent in general hospitals and 7 percent in medical schools, some proportion of which included private patient care and consultation [1]. Thus over half of the nation's psychiatric person-hours are devoted to private patient care and consultation. The private mental health sector also includes the activities of clinical psychologists, psychiatric social workers, and psychiatric nurse practitioners in private practice, all mental health professionals in private hospitals (general and psychiatric), private partial hospitalization facilities, and other private settings.

Better data are available for the private office practice of psychiatry than for any other aspect of the private mental health sector, largely through a survey conducted in 1973-74 of a sample of respondents to the 1970 psychiatric manpower survey who had reported spending fifteen or more hours weekly in direct patient contact in their private offices. The more recent survey indicated that the respondents saw an average of thirty-two private patients per week — 81 percent in individual therapy, 10 percent in group therapy, and 9 percent in conjoint or family therapy. Most of these psychiatrists (93 percent) charged \$30 to \$45 for forty-five to sixty-minute visits. A sample of some 4,000 private patients seen by these psychiatrists included 44 percent with insurance coverage, 52 percent without insurance, and 3 percent with public third-party payment coverage. Thus few private psychiatric outpatients are covered by public third-party payment sources, including Medicare and Medicaid. Nonetheless private outpatients are by no means all wealthy: 24 percent had annual family incomes under \$10,000, and 35 percent were between \$10,000 and \$20,000 [8]. Moreover a study of psychotherapists in three U.S. metropolitan areas showed no substantial differences in income distribution between private patients seen by psychiatrists, clinical psychologists, or psychiatric social workers [6]. Both studies confirmed the expectation that patients of psychoanalysts come from families with higher incomes than patients of other practitioners [6,8].

There is no system of formal organization of private mental health services. Professional associations and state licensing bureaus set minimal criteria for membership and licensure and have limited power to enforce their codes of ethics. Psychiatrists, like other physicians, are regulated to some extent by peer review committees, but these are not necessarily a highly effective control measure. To an increasing extent, professional fees, record keeping, and the duration of treatment are regulated by private third-party payers, which refuse payment if their criteria are not met. The paperwork and limitations imposed by third-party payers are the subject of many complaints by mental health professionals, but their effects on the quality and efficiency of patient care are not yet known.

THE PUBLIC MENTAL HEALTH SECTOR

Prior to World War II, most seriously mentally ill people were confined in state mental hospitals, usually by court commitment. During the 1940s, two important types of treatment facility began to be established throughout the country. Outpatient clinics, which had their beginnings in the nineteenth century, began accelerated growth in the late 1940s. During the same period, psychiatric units were being developed in general hospitals. In the 1950s, effective antipsychotic medications first became available, resulting in the discharge of many state hospital patients. In the 1960s, community mental health centers (CMHCs) first came into being, and they now play a prominent role in the delivery of mental health services.

In 1970, psychiatrists spent 12 percent of their time in state mental hospitals, 7 percent in CMHCs, and 6 percent in government health and mental health administration agencies; an additional 11 percent of their time was spent working in other settings, which include the delivery of public mental health services [1]. Approximately one-third of the nation's psychiatric person-time is spent in the public mental health sector (albeit a considerable portion of this time is spent in administration, consultation, and research). The proportion of time spent in CMHCs will soon surpass that spent in state hospitals, if it has not already done so. Today many state hospitals have entire unused buildings and some state hospitals have already closed.

The first major study to emphasize increased community treatment of the mentally ill was conducted by the World Health Organization (WHO) in 1953 [2]. Its report stressed the need for community information services and the development of community facilities (such as outpatient clinics, day hospitals, and halfway houses) that would reduce the need for admission to mental hospitals. Following the WHO report, many Ameri-

can psychiatrists journeyed abroad to study the pioneering programs of community-based treatment being developed in England, France, Holland, and Canada.

New York, in 1954, was the first state to enact a community mental health services act. Other states followed. Under such legislation, the state provides matching funds to local political jurisdictions or agencies to develop and operate a variety of mental health facilities. Unfortunately these funds were provided in many cases without defining service priorities and with no expectation that the services would be integrated with the state-operated mental health institutions. Many community programs restricted service to those who had never been treated in state hospitals. Thus there began a three-tier system of services: private practice with private hospital and general hospital psychiatry, locally run community services, and the state-operated mental health institutions. There was very limited coordination and integration between the three tiers, which served people of differing socioeconomic levels and degrees of severity of psychopathology.

By the mid-1950s, discontent with treatment programs for the mentally ill, particularly those in state hospitals, was widespread. In 1955, a concerned Congress established the Joint Commission on Mental Illness and Health, with a mandate to study the problems of mental illness in America and to make recommendations for a national mental health program. The commission completed its study in 1960 and published its report, *Action for Mental Health*, which was widely hailed as a landmark document [7]. It urged an expanded program of services and long-term research by a doubling of expenditures in the mental health field in five years and a tripling of expenditures in ten years. It attacked large state hospitals, proposed their conversion into smaller, regional, intensive-care centers of fewer than a thousand beds, and argued for the development of mental health centers, suggesting that one would be appropriate for every 50,000 persons. It recommended emergency psychiatric services in the community for both chronic and acutely ill patients as a means of reducing the need for prolonged or repeated hospitalization. Moreover the report envisioned a broad range of rehabilitative services for the mentally ill both before and after hospitalization.

President Kennedy appointed a cabinet-level task force headed by Anthony Celebrezze Secretary of Health, Education and Welfare to study the recommendations and make specific proposals for a national program. The Celebrezze committee favored a radical break from the past and creation of an alternative service system largely independent of the mental hospital system. Disregarding the Joint Commission's suggestions for improving state hospitals, the committee proposed a nationwide network of centers to be located close to the patients' homes, eventually eliminating

the need for state hospitals. They supported the community care ideology and pressed for its translation into policy.

This ideology and policy were opposed by the American Medical Association, which feared further intervention in the medical field and increased governmental centralization. This opposition won the first round, for the final version of the bill passed by Congress in 1963 contained no authorization for staffing; the House committee cut out the staffing provision by a vote of fifteen to twelve.

In October 1963, Congress approved legislation authorizing limited federal financial assistance for the states to aid them in constructing community-based mental health centers. Congress believed that such centers could be more effective in treating the mentally ill than the institutional programs of state and county mental hospitals. It was hoped that community-based treatment programs would replace large institutions.

As approved by President Kennedy, the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 (PL 88-164) entitled each state to an allotment of federal funds on the basis of population, extent of facility need, and overall financial need. Each state was required to develop a comprehensive mental health plan and a list of priorities for its proposed mental health activities. Each was also required to provide assurance that the services of centers would be available to all and that a reasonable amount of care would be provided for indigent persons.

The Community Mental Health Centers Construction Act Amendments of 1965 (PL 89-105) made funds available for the initial professional and technical staffing of centers constructed under the 1963 program and for existing centers that proposed to add new or additional mental health services to their programs.

In October 1968, the scope and purpose of the Community Mental Health Centers Act were broadened by adding new programs of construction, additional assistance for initial staffing, and other specialized facilities for the treatment of alcoholism and narcotic addiction. Under the Alcoholic and Narcotic Addict Rehabilitation Amendments of 1968 (PL 90-574), facilities were entitled to grant assistance in amounts not to exceed two-thirds of the costs of facility construction.

Originally the CMHC program had been designed to provide basic money for the purposes of constructing community facilities and helping centers meet their initial costs of operation. But in 1970, Congress concluded that state and local sources of funding had proved inadequate and that additional financial support would be needed to promote and continue the development of programs.

Under the Community Mental Health Centers Amendments of 1970 (PL 91-211), the federal share of the costs of center construction was increased, the formula used to determine the federal share of staffing was

changed, and centers were entitled to grants over an eight-year period rather than for fifty-one months. A new program of initiation grants was added for assessing local needs, designing center programs, developing services, and other purposes. A new program for children's mental health services was incorporated into the act, including construction and staffing assistance and grants for training and evaluation. Also added was a program of direct grants for special projects relating to alcoholism and narcotic addiction. Funds were authorized for consultation services to be provided in centers and specialized treatment facilities.

In its review of the CMHC program in 1974, Congress determined that the patchwork history of the program necessitated a clear definition of a CMHC and a prescription for the comprehensive services that a CMHC must provide. Under PL 94-63, CMHCs are defined [12]:

- 1 A community mental health center is a public or private non-profit legal entity through which comprehensive mental health services are provided principally to individuals living in a defined geographic area (catchment area).
- 2 Within the limits of the center's ability it shall provide services to any individual living in or employed in its catchment area regardless of his or her ability to pay for such services, current or past health condition, or any other factor.
- 3 A community mental health center shall ensure that persons receiving services have access to all health and social services they may require.
- 4 Mental health services through the community mental health center shall coordinate with the services of other health and social agencies, including state mental health facilities, serving residents of the center's catchment area.
- 5 Services shall be available and accessible to the residents of the area promptly, as appropriate, and in a manner which preserves human dignity and assures continuity of high quality care and which overcomes geographic, cultural, linguistic, and economic barriers.
- 6 Services shall be available twenty-four hours a day and seven days a week.
- 7 A community mental health center must have a governing body composed of individuals who reside in the center's catchment area and who, as a group, represent the residents of that catchment area. The exceptions to this requirement are centers which were federally funded prior to PL 94-63 and are operated by government agencies. These may be allowed to have a representative advisory board instead of a governing board.

- 8 A community mental health center shall have established an ongoing quality assurance program, an integrated medical records system, a professional advisory board, and an identifiable administrative unit to provide the required consultation and education services.

PL 94-63 also designates specific services to be provided, including some that were absent from many existing CMHCs [12]: inpatient services, outpatient services, partial hospitalization services, emergency services, consultation and education services, services for children, services for the elderly, screening services, followup care, transitional services, alcoholism and alcohol abuse services, and drug addiction and drug abuse services.

The 1975 revision required all CMHCs to meet the definition and the requirements within two years as a condition of obtaining or continuing grant support. It also created the National Center for the Prevention and Control of Rape, which conducts research into the legal, social, and medical aspects of rape.

Since the first Community Mental Health Centers Act became law, the National Institute of Mental Health has set in motion a CMHC movement that will undoubtedly continue its development in all areas of the country. Over \$1 billion has been expended to fund 603 centers throughout the nation, making services available to almost 87 million people. In 1973, over 1 million persons received care through CMHCs.

CMHCs have had their share of successes and failures. The successes of their first decade (1963-1973) include [11]:

- 1 540 funded centers covering a potential service population of 80 million.
- 2 Reduction of state hospital population from 505,000 to 276,000. The state hospital inpatient rate is 30 percent lower for catchment areas served by CMHCs in operation for over three years than that for the United States as a whole.
- 3 The average length of an inpatient episode has decreased to fewer than twenty days.
- 4 The availability of noninpatient services to many communities has increased.

Failures and difficulties of these same CMHCs include:

- 1 Failure to develop alternative community support programs for the chronically mentally impaired.

- 2 Less than 25 percent of their funding is obtained from the direct provision of services, so they are dependent upon federal, state, and local tax support.
- 3 Most CMHCs have failed to integrate their service system with other providers, especially the related state hospitals.
- 4 Failure of many CMHCs to provide responsive emergency care. In one survey, thirty-two of ninety-nine centers failed to answer the telephone in response to the survey requests for emergency services.
- 5 Failure of many CMHCs to provide services for children, youth, substance abusers, and the aged.
- 6 Failure of most CMHCs to develop preventive programs.

Although PL 94-63 does address many of these deficiencies, it does not assure an adequate fiscal base for the long-term survival of a community-based service system throughout the nation. Yet even if the CMHC is only partially able to meet the original goals set for it, other values of the program may justify its continued growth.

CONCLUSION

Understanding of the use and effectiveness of mental health services is severely handicapped by a lack of appropriate comparative data. One major sector of mental health care, that delivered by nonpsychiatric health professionals, has been largely neglected as an area of study, though much is known of the organization and delivery of general medical services.

The delivery of services in the private mental health sector is not formally organized but is regulated to some extent by state licensing authorities, professional associations, peer relations, and, to an increasing extent, third-party payment sources. The delivery of services in the public sector is regulated chiefly by state and federal regulations and guidelines. The most visible regulating influences in both the private and public mental health sectors achieve their power through controlling payment and funding.

Although it is difficult to compare the types and quality of care delivered in the two mental health sectors, a few observations can be made with regard to clinical practices. The availability of psychoanalysis is one of the clearest differences between private and public mental health services. Psychoanalytic treatment usually requires two to five sessions per week for several years or longer, and the great majority of psychoanalysts are psychiatrists. Consequently psychoanalytic treatment is expensive to the patient and consumes a disproportionate amount of physician time, as

compared with other forms of treatment; it is rarely available in the public sector. Another difference, of more recent origin, is the availability of electroshock treatment (ECT). Most ECT is given in hospitals, and an increasing number of state hospitals no longer offer ECT as a result of new regulations and administrative policies, so, in effect, ECT is available almost exclusively to patients in the private sector.

Other differences between the private and public sectors in the types and quality of treatment are less clear-cut. For example, patients in private hospitals are more likely to receive individual psychotherapy than patients in public hospitals, but this is at least partially accounted for by differences in presenting problems between the two patient populations. Most available evidence does suggest that private sector patients, as compared with public sector patients, tend to receive more direct physician contact and a greater proportion of the higher-status treatment modalities (psychoanalysis rather than other psychotherapies, individual rather than group psychotherapy, pharmacotherapy plus psychotherapy rather than pharmacotherapy alone, and so forth). However educational and clinical differences between the two patient populations and uncertainty concerning the relative efficacy of various professionals and the relative value of various treatment modalities confound all efforts to compare objectively the quality of care in the two mental health sectors. Nevertheless it appears that both mental health sectors and the general medical sector are engaged in the delivery of desired services.

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26

Legislation and Health Care in the United States

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The pervasiveness of government in determining the environment of its citizens can be understood when it is realized that the quality of the air we breathe, the water we drink, the food we eat, the drugs we use, and the housing in which we reside are substantially affected by government's authority to legislate on these matters. The power of government in influencing health care assumes awesome proportions: it determines the qualifications of health professionals, the number of persons trained in these various professions, their manner of practice, and the method of reimbursement.

This chapter provides a historical background for an understanding of the role of government in determining the health of the individuals, a description of the current role of federal, state and local governments, in personal health care, and a statement of how the physician may affect government's authority in health care.

THE FEDERAL GOVERNMENT

Within the United States, the separation of power between the states and the federal government has been a prominent feature in the delineation of

authority for governance of health and medical affairs. Constitutionally powers not specifically set forth for the federal government were reserved for the individual states. In time, health affairs that related to foreign or interstate issues were recognized as within the domain of the federal government; all others fell within the authority of the states to govern for the general health, welfare, and safety of its citizens.

Out of this understanding, the early history of federal involvement in health affairs centered on an interest in communicable disease control. Legislative and financial support of such matters as quarantine and the development of a Public Health Service were promoted. The special medical care needs of those involved in the merchant marine resulted in federal legislation that created a system of U.S. marine hospitals. In its concern for the health care of World War I veterans, the federal government entered into a continuing legislative involvement, appropriating funds for a system of veterans' hospitals, payment for outpatient services, and the elementary framework of a long-term care program.

With the economic collapse of the Great Depression, the United States underwent a dramatic change in its interpretation of the role of the federal government in the preservation of the economic, social, and health conditions of its citizens. The Social Security Act of 1935 authorized a set of initiatives, nationally determined and administered, which through a succession of amendments over a forty-year period, have produced a system of monetary benefits for the aged, the disabled, and the indigent. Included in this system are comprehensive health benefits for the same population that absorb 40 percent of total medical resources.

In a parallel series of moves, the federal government has assumed a position of responsibility for the protection of the health of the population as a whole. During World War II a sequence of legislation created special grants for health manpower training. It continued after the war with significant grants for biomedical research, hospital construction, and categorical programs of health services. More recently there has been serious consideration of a national health insurance system, which is essentially a standard universal system for the financing, if not for the delivery, of all health services. To understand this historical development of a preeminent position for the federal government as a determiner of the environment of medical service, we shall consider the past, present, and immediate future of law as it bears upon the issues of health services financing, health services delivery, and health manpower.

HEALTH SERVICES FINANCING

The current posture of the federal government is to provide medical services for the U.S. population through a series of laws (see Table 26.1). As

Table 26.1
 MAJOR PERSONAL CARE PROGRAMS, FEDERALLY
 ADMINISTERED, AND EXPENDITURES FOR FY1975

<i>Population Segment</i>	<i>Law Governing</i>	<i>No. Covered (in millions)</i>	<i>FY1975 Expenditures (in billions of \$)</i>
Aged and disabled (Medicare)	Title 18 SSA	23.6	12.4
Indigent (Medicaid)	Title 19 SSA	24	12.4
Federal employees and dependents	FEHB Act of 1959	9	1.5
Military and dependents	PL 89-614	9.6	3.7
Veterans	Title 38	1.15	2.9

of July 1975, it disbursed 40 percent of total U.S. expenditures for personal health services, and there is a persistent trend upward in such federal health services financing. Each federal agency responsible for a health services program has set forth fee schedules, range of services covered, performance standards for the provider, and copayment and other requirements for the consumer. The actions of the federal government in the Medicare and Medicaid programs provide insight into the manner in which legislation affects physician and patient.

The Medicare program originally was designed to provide financial protection for a broad range of medical services required by the aged. Among such services and peculiar to the aged is the requirement for long-term care, institutionally or at home. By regulation the Social Security Administration (SSA) limits the protection to be provided to the eligible population and thereby forces the aged to pay for much of their long-term care or, when personal resources are not adequate, to submit to a means test and seek coverage under Medicaid.

In setting forth a basis of reimbursement for providers of service, the SSA meets the full cost of hospital care but limits the allowable items of cost, including a specification of acceptable profit factors. In respect to reimbursement of the physician, the criterion of usual and customary is interpreted as not including amounts exceeding the eightieth percentile of the distribution of fees charged for a stated service within a defined geographical area. A physician can reduce his fee for Medicare patients if the fee is above the eightieth percentile, or he can require the patient to pay the full amount above the reimbursable level, or the patient can seek other care.

In an attempt to influence the use of hospital care, one of the most expensive elements of the health service spectrum, the SSA has mandated the establishment of utilization review (UR) committees in each hospital participating in Medicare. The purpose is to guide admission practices of physicians and hospitals so that unnecessary admissions are minimized and the durations of stays conform to reasonable norms. Dissatisfied with the benign UR regulation promulgated by SSA, Congress enacted legislation (PL 93-603) to establish a nationwide network of professional standards review organizations (PSRO) whose mission is similar to UR with the exception that PSRO units are independent of hospitals, answer to the federal authority for Medicare and Medicaid, and are funded by the federal government.

An additional example of federal regulation of the financing of health services concerns drug reimbursement. The Department of Health, Education and Welfare, the authority for Medicare and Medicaid, proposes to limit reimbursement for certain drugs to the lowest-cost product form of each drug. In essence, the physician may prescribe only the generic entity, the pharmacist will be reimbursed only for the lowest-cost available product, and the patient will be entitled only to the lowest-cost product.

It is clearly apparent that the history of Medicare and Medicaid administration conforms to the thesis that as the public passes authority to government for the design and execution of health financing programs to assure equity, a concomitant substantial loss in the provider-consumer capacity to control the individuality of that relationship will inevitably occur. It can be argued that ruling and regulating are the means by which the object of legislation is attained: a high degree of equity of treatment of all citizens in a defined category and consistent with available resources. In respect to health, the federal initiatives provide a broad base of services, subject to constraints, but no more than is true in public education.

HEALTH SERVICES DELIVERY

The earliest federal legislation concerned with health services established the U.S. marine hospitals for the care of seamen, who paid a monthly premium for the coverage. The Department of the Treasury was the administrator both of the funds and for the system of care. Thus a precedent was set for the federal government's direct involvement in providing medical care for specific population groups.

In the late 1800s interest increased in the control of communicable diseases by quarantine. The federal government established standards for entry into the nation's ports and authorized the relatively small Public Health Service to direct itself generally toward the control of communica-

ble diseases and to man quarantine stations both here and abroad for immigrants. This precedent for the federal government's involvement in the broad area of preventive medicine and related health services led to the establishment of the National Institutes of Health by a sequence of amendments to the Public Health Service Act. These institutes concern themselves with significant biomedical research and demonstrations in the prevention and treatment of infectious diseases, cardiovascular disorders, cancer, arthritis and related diseases, mental disease, and others.

The specific and unique task of providing medical services to the military led to governmental establishment of significant health care systems for these people and their dependents. The care is now rendered by full-time, salaried staff with no cost to those served. Recognizing a responsibility for the wartime service rendered by large numbers of citizens, Congress authorized the establishment of a medical care system, largely hospital based, for veterans with service-connected needs. As was the case for the marine hospitals and military medical services, the delivery system developed by the Veterans Administration (VA) was one largely rendered by full-time salaried staff with no cost to those served. In the past twenty years, the VA has found it desirable to affiliate closely with university teaching and medical care centers in order to ensure quality of care and adequate specialty staffing.

Although the legislative initiatives have been significant elements in determining the nation's system for the delivery of health services, they have not directly affected the mass of the population in their impact upon personal care. In retrospect it appears that a historic move by the federal government in determining the nature of the nation's health delivery system was the enactment of the Hill-Burton Act in 1946. One of its provisions mandated the preparation of a state plan for community hospitals as a condition for annual federal grants for hospital and nursing home construction. The plan included a specification of the bed need per unit of population, an index subject to federal review and eventually subject to federal determination through the issue of guidelines. The constraint of the plan initially applied only to the disbursement of federal funds for hospital construction. Communities, public and private, profit and non-profit, could proceed to build their own resources. However in a series of legislatively determined moves, the federal government has used its power over the flow of Medicare and Medicaid funds to mandate that all hospital construction and, to a large extent, nursing home development shall be subject to an involved planning and certification-of-need process. It is likely that construction of physicians' office buildings will eventually be subject to the planning and certification process.

An additional major legislative move to influence the nature of the delivery system is the so-called health maintenance organization (HMO) proposal, first advanced in 1972. In order to promote prepaid group prac-

tice with emphasis on prevention and outpatient alternatives to expensive inpatient care, special grants for organizational and startup costs are available to nonprofit community groups that offer comprehensive health services packages on a prepaid (premium) basis. Thus the HMO is intended to provide an alternative to the more conventional fee-for-service health insurance system, which emphasizes solo practice or group specialty practice.

Although not enacted into federal legislation, the labor-backed health security bill sets forth a detailed system for the planning of national health services, which would be administrated by the federal government, funded by payroll taxes, and would emphasize prepaid group practice delivery system. This bill represents the widest departure from the current health delivery and financing systems that has been brought before Congress for debate. It is one of a set of bills dealing with national health insurance, which has occupied the attention of the nation's law-making process for two decades.

HEALTH MANPOWER DEVELOPMENT

The training of physicians, nurses, and other major professionals concerned with medical care of the general population was not a matter of federal legislative action prior to 1935, indeed it was considered an issue outside the federal domain. But in connection with the original (1935) Social Security Act, Congress provided appropriations to train physicians and related personnel for public health administration. During World War II, further federal legislation was enacted to provide grants to nursing schools and to meet tuition costs of nursing students.

President Truman submitted legislation in 1949 to provide for the expansion of medical school education because of a scarcity of practicing physicians and a limited capacity of existing medical schools to remedy the situation. Fearful of interference in medical school affairs, leaders of the medical profession, as well as of the medical schools, successfully resisted such governmental initiative. In 1956, federal legislation was enacted to provide for a continuing program of faculty support and for student financial assistance in nursing school education. This initial act, known as the Professional Nurse Traineeship program, has undergone successive amendments but has remained relatively intact. With the scarcity of physicians and economic viability of medical schools deepening, all parties to this situation were finally able to agree. In 1963, Congress enacted precedent-making legislation in the Health Professions Education Assistance Act, which provided grants for the construction of teaching facilities and for student loans.

Following this action, Congress has legislated or considered legislation on health manpower issues almost continuously. In 1971, the Comprehensive Health Manpower Training Act of 1971 and a parallel measure, the Nurse Training Act, committed the federal government to a wide-sweeping involvement in the future development of the health professions by providing for construction of teaching and research facilities, capitation grants to promote shortened curricula and increase enrollment, expansion of medical and dental schools, aid to schools in financial distress, and student loans and scholarships.

Health manpower legislation considered in 1975 included efforts to limit graduate training in the specialties and to make financial support of medical schools subject to the condition that students receiving loans or scholarships would provide service following completion of their medical education in geographic areas of exceptional need. This development of health manpower is designed to promote family (general) practice and to achieve a more equitable distribution of physicians.

STATE AND LOCAL LEGISLATION AND HEALTH CARE

Just as the federal capacity to affect health financing, health services delivery, and health manpower has grown, the individual states and cities have played a significant role in these matters throughout the history of the nation. Massachusetts in 1649 regulated the practice of medicine by restricting unskilled and unethical practices undertaken by "shoemakers, weavers, and almanack makers who are practicing medicine in the Province of Massachussetts" [2]. Virginia in 1639 provided for the regulation of the fees of physicians who were characterized as "gripping and avaricious men."

The range of concern of states in legislating on personal health care matters varies enormously. Common to most states is statutory involvement in licensure of physicians and of other major health professionals, including dentists, pharmacists, and nurses. Almost universally, states are heavily involved in manpower development through budgetary support of schools of medicine, dentistry, pharmacy and nursing.

Where the private sector has failed to provide sufficient volume or range of personal care, states have legislated substantial budgetary support and management authority for the establishment of special systems of care, such as hospital and outpatient care of the mentally ill, institutional care of the mentally retarded, and preventive medical services, particularly for the medically indigent. With the advent of Medicaid, states began administering a broad range of medical services for the poor.

With the growth of health insurance as a means of financing hospital and other major medical costs, the insurance carriers, both profit and nonprofit, have been placed under the regulatory power of insurance commissioners, who are authorized to approve or reject insurance rates. More recently several states have placed the institutional providers of care, such as hospitals and nursing homes, under the regulatory authority of cost control commissions.

A problem of growing dimensions is medical malpractice. Throughout the past two hundred years of medical practice, the legal challenge by a patient of improper care by a physician has been relatively rare. Within the past ten years, however, the situation has changed significantly. In 1975, physicians seeking adequate financial security by insurance against medical malpractice suits were required to pay from \$1,500 per year if they were in general practice to \$8,000 per year if they were fully engaged as orthopedic surgeons. These rates continue to rise. The rights of patients in medical practice suits are set forth in both common law and statutory law. In the latter regard, states have been called upon to legislate on such issues as the type of cases that may be litigated and the procedures for adjudication.

THE PHYSICIAN'S ROLE IN LAW FORMULATION

It is apparent that at both the federal and state levels, substantial powers are vested in the government to determine the course of medical practice in particular and of health care in general. In most instances, the resultant laws delegate authority to specific administrative agencies to execute the intent of the law. Following constitutional procedure, courts will from time to time determine what is and what is not acceptable practice in health care affairs.

Physicians are afforded an opportunity to affect the lawmaking process by influencing action by Congress or by state legislatures, the regulatory action of administrative agencies concerned with health care, and the decisions of courts. In the instance of Congress and the state legislatures, the individual legislators are attentive to the concern and opinion of their local constituents. The physician as an individual can therefore communicate with his congressman, U.S. senator, and state legislator to convey a point of view on specific legislation under review or to initiate legislation. To pursue this path presupposes an understanding of a problem or a set of health problems under legislative review. Because busy practitioners have difficulty remaining current with legislative affairs, their state and national professional organizations need to maintain a continuing liaison with the legislative process and to report in newsletters and in

regular issues of professional journals the flow of legislative business as it concerns health affairs.

The critical phase of lawmaking generally takes place in the legislative committees involved with health affairs. To affect the action of such committees, individual testimony is appropriate, but group action is better. The consensus reached by a county medical society or a state medical association in a carefully prepared survey of opinion will be influential in affecting a decision by a legislative committee.

Health legislation in the matter of personal medical care is a concern of both the provider of service and the consumer. In many instances, resorting to statutory law for the establishment of a basis for health services must be regarded as a breakdown in the solution-producing process that is afforded by the private relationship of provider and consumer (physician and patient) or by the dialogue of groups of consumers and physicians. From this point of view, physicians should encourage a free exchange of viewpoints with their patients on matters of availability, fees, and the rationale for treatment and recommendations. In part, this exchange can be assisted by the preparation and distribution of written materials, which is best accomplished by a county medical society. The consumer then becomes a constructive partner in legislation rather than an adversary.

Following the enactment of legislation, its execution is accomplished by regulations promulgated by administrative departments. In the instance of the federal government, such departments include the Social Security Administration, the Department of Health, Education and Welfare, the Department of Defense, the Veterans Administration and the Federal Trade Commission. Federal code requires that regulations proposed by these agencies shall be published in the *Federal Register*. It is customary that a period of thirty to sixty days is afforded to interested members of the public to comment in a written statement. This process provides another important means to physicians to affect lawmaking. It is, however, a process best accomplished by a formal statement filed by a group of physicians, and it requires systematic study of the regulatory moves of government.

Even when laws are enacted and regulations are promulgated, an opportunity is still afforded to affect the role of government in health care affairs. Although authorized by Title 18 of the Social Security Act to promulgate rules and regulations regarding Medicare, the Social Security Administration has been enjoined by the courts from enforcing regulations concerning utilization review. This court action was sought by the American Medical Association on the premise that cost-cutting objectives of a government agency cannot justify the interference with the safety and the constitutional freedoms of patients and their physicians. A wider

principle appears to have been given support by this court action [1]. Executive departments have generally assumed that whatever the government pays for, the government can regulate. The courts appear to be establishing the principle that cost considerations are secondary to human rights and constitutional guarantees of personal freedoms.

The practice of medicine and the delivery of personal health care services are activities within the power of government to direct and regulate. This power has been exercised historically and is pervasive in our medical affairs today. At the federal level, legislation is directed in three main areas: financing of health services, delivery of health services, and development and control of health manpower. At the state level, significant legislation is concerned with licensure of health professionals, control of costs, and financing of special systems of care.

Physicians today cannot divorce themselves from the world of legislation since it determines the quality of their professional life. There are constructive means by which law and regulatory activities can be influenced: drafting, consideration of, and enactment of laws; promulgation of rules and regulations by administrative agencies; and adjudication by courts. The medical profession requires considerable organization in order to affect the governance of medical affairs.

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Unmet Needs and Future Directions

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Despite the fact of its undeniable growth from 3,000 psychiatrists or 2.3 per 100,000 of the population of the United States in 1939, to a projected 30,000 psychiatrists or 17.8 per 100,000 in 1980, the volume of criticism, both from within the field and from outside, denotes a professional identity crisis of grand proportions. At one and the same time, psychiatry has been accused of not doing enough and of trying to do too much. "There are those who believe that psychiatry has bitten off more than it can chew and ought to get back to treating serious mental illness, and there are those who feel that unless we work to change social systems, we shall inevitably have a continuing flow of sick and troubled people" [8]. There are those who believe psychiatry should not exist [70] and those who believe that it does not exist [67], those who believe it should be a more integral part of medicine [6,41], and those who believe that psychiatry is the true medicine [23]. There are those who say that psychiatry is doing too much [6], and still more who say that it is doing too little [46,54].

Despite its substantial growth, both in the United States and in Canada [65], there remain almost insuperable and hotly debated issues, for example, the problem of meeting the demands for service (the problem of

quantity) and the problem of the quality of care provided, even to those who are served. There is still a question of the role of psychiatry, of the relationship between psychiatry and medicine, and psychiatry with society, and a question as to how far the "psychiatric revolution" has progressed. There is even some uncertainty as to whether this is the third or the fourth psychiatric revolution [29,59]. In view of all this uncertainty, it is appropriate first to consider some of the issues that beset the specialty before venturing into the topic of unmet needs and future directions.

PSYCHIATRY: ART, SCIENCE, OR PARADIGM?

Psychiatry has been defined by Grinker [28] as "the medical specialty concerned with the medical practice or applied science of diagnosing, treating, and preventing mental diseases or disorders of the mind," and by Masserman [48] as "a science which deals with the determining factors of human behaviour, and the means that may be employed to align behaviour with optimal personal and social goals." Yet the question has been raised frequently as to whether psychiatry has any claim to be defined, however broadly, as a science. That there are still so many diverse schools of thought as to theory and practice may suggest that there is as yet little consensus in the field.

"There is of course, a stage before there is any consensus at all, before a paradigm can be constructed. Perhaps psychiatry is not entirely out of the pre-paradigmatic stage" [64:630]. The critics of child psychiatry tend to bite even harder. McConville [42] questions whether child psychiatry can be considered as science or prescience or whether any of its theories justify the title of theory or should be relegated to the "area of prototheories, anecdotes, and other notions." As Anthony [4] pointed out, the situation in child psychiatry is much the same as that in adult psychiatry. He adds, "If we wish to enter the brotherhood of scientific professions, we must have more solid and verifiable underpinnings of knowledge than we currently possess." Chalke [11], however, feels that there are three major barriers to be overcome before a more fruitful scientific approach can be realized: a recognition of the changing meaning of the term *science* over the past few years, the difficulties in applying scientific methods to the content of psychiatry, and the attitudes of psychiatrists themselves. The barriers posed by psychiatrists, Chalke concludes, include a cultural wave of anti-intellectualism, a general feeling of indifference or irrelevance by many psychiatrists to the scientific status of knowledge in psychiatry, and a reluctance to submit to studies aimed at determining therapeutic outcomes. There are, in psychiatry, the special

problems of definition of terms, of quantifying measurement, and of formulating concepts. Cleghorn [14] in 1961 even suggested that the sciences necessary to explain the primary data of psychiatry had not yet been developed.

One of the major problems in regard to the scientific standing of psychiatry is that we like to think that science has developed by a logical progression of ideas; actually, as Paris has pointed out, "Scientists, like everyone else can only see the universe through ideological spectacles and the evolution of psychiatric concepts follows the same rule" [51:147]. We are victims, as were our forefathers, of history, current ideologies, and fashionable theoretical formulations. The current crisis of diversity and demand in psychiatry is characteristic of an age of diversity when many things are being challenged and where the rate of change is so rapid. Characteristic of this age is the lack of a unifying ideology, and while this creates anxiety for the psychiatrist as well as for the patient, a healthy spirit of eclecticism may be a necessary theoretical position.

PSYCHIATRY AND MEDICINE

At the moment, according to Clark [13] psychiatry does not fulfill even the basic attributes of a specialty of medicine. Its intellectual basis is too diffuse, its service base too broad, its technical base too obscure. Nevertheless several eminent leaders in the field have suggested that psychiatry should return to the medical fold. Authorities such as Braceland [6] have emphasized the remarkable resurgence in recent years of the basic biological underpinnings of some of the mental disorders: advances in psychopharmacology, neurophysiology, chemistry, and endocrinology. Ludwig [41] would exclude from the purview of psychiatry all those cognitive-affective behavioral disturbances for which it is unnecessary to postulate an underlying or associated biological dysfunction. These, thus, could be defined as nondiseases, or "problems of living." Some, however, agree that psychiatry should remain the purview of medicine with its concepts of disease and diagnosis, etiology and treatment, and unique aspects of physician-patient relationship but nevertheless feel that psychiatry at its best is a paradigm for general medical practice of the future. Both Eisenberg [23] and Rackoff [54] emphasize that psychiatric practice is unique because it deals with human distress in a context that includes the psychosocial as well as the biological. Spiegel [66] has cogently pointed out that critics within the profession disagree about the appropriate proportionate distribution of resources and goals, methods of treatment, what should be done about prevention, methods of finance, psychiatric care, and methods

of service delivery. Spiegel emphasizes that psychiatry as a profession is, and must be, concerned with high-risk situations — the management of potentially suicidal and dangerous patients — and with social issues. His model is essentially one of psychiatry as an interface between science and the arts: “a permanent experiment with risk-taking, a prolonged and loving engagement with uncertainty on behalf of the mentally disabled” [66:697].

On the other hand, a major criticism leveled at psychiatric practice is that it has been misused as an agent of social control. Chodoff [12] has termed those who would do away with involuntary hospitalization as abolitionists; these include authors such as Szasz [67] and Leifer [12] who believe that psychiatrists have functioned as society’s policemen in restricting the fundamental liberties of individuals by involuntary hospitalization; Laing [35] maintains that even a diagnostic label violates a person’s right to define himself, and Torrey [70] has opened a book by stating, “Psychiatry is dying.” It is dying, he says, because as a medical model approach to problems of human behavior, it has produced confusion rather than solutions. Psychiatry deals with disorders of function and departures from the statistical norm of behavior, and there is a real question as to whether a disease model is appropriate.

ETHICAL ISSUES IN PSYCHIATRY TODAY

Redlich and Mollica [56] have emphasized that rapid technological change and innovation have created problems — for example, the increasing ability to modify behavior has led to the necessity to consider seriously the question as to the desirability and limits of behavior change. Another is that the consumer revolution has led to the maxim that health is a right. Many major issues have recently come to light as a result of legal decisions, among them, the right to be treated. Patients who therapeutically need to be confined now have the right, legally mandated, to be treated adequately in institutions; those who are either not admitted or are discharged to treatment in the community equally have the right to be taken care of under proper conditions created for adequate care. Conversely the right not to be treated has recently been upheld in federal court. “Coercive treatment due to a patient’s being dangerous or incompetent should be ordered by a court of law on the basis of evidence of such behaviour and the value of availability of the treatment” [56:129]. As methods of behavior change and behavior control become more efficient, the problem will be exacerbated. Psychotherapies, the pharmacological therapies, the psychosurgical therapies, and methods of genetic engineering all pose increasing ethical questions as their effectiveness increases and becomes assured.

MENTAL HEALTH SERVICES IN UNDERDEVELOPED COUNTRIES

As Lambo [36] pointed out, low priority continues to be given to mental health services in many parts of the world, but since the World Health Organization constitution has defined health as "a state of complete physical, mental and social well-being," a basic principle for the future work of the organization (and one geared to fostering mental health) is the encouragement of the incorporation into public health work of the responsibility of promoting the mental as well as the physical health of any community and the rational planning of services within a geographically defined community to meet its estimated needs. WHO is developing a dynamic model of mental health service to enable developing countries to evaluate mental health activities and to coordinate them with socioeconomic development. A data base for such planning is required, and a four-part program has begun that attempts to standardize psychiatric diagnosis, classification, and statistics; to develop comparative research on specific mental disorders; to study the prevalence of mental disorders in geographically defined populations; and to deal with the training and development of manpower for epidemiological and social psychiatry in underdeveloped countries.

Giel and Harding [26] have demonstrated that epidemiological research carried out in the developing countries has provided impressive evidence of the overall magnitude of mental health problems. They feel, however, that the association between the prevalence rates of mental illness in the population and its need of psychiatric service is too complex and indirect to justify costly epidemiological surveys for the purposes of planning. They suggest that it would be more helpful to ascertain such facts as the extent and duration of disability resulting from mental disorders, the burden the mentally disordered place on their immediate environment, and the problems created by those with psychiatric illness in terms of frequency of attendance at health services and reduced working efficiency. They emphasize that in many countries of the Third World, where even the most basic health services are provided to not more than 15 percent of the population, the few available trained professional health workers must support and stimulate primary health care carried out by village health workers, or health assistants, who have only a few months to a year of basic training. They suggest that such workers could be trained to use the most effective and inexpensive psychotropic drugs, which would be sufficient to cover the majority of essential needs. A referral system and support from the health center, the general hospital, and ultimately the mental hospital is a requirement for the development of such a system of primary health care. Feedback on the operation of services (a simple information system) should be part of any existing system of health

statistical reporting, should involve no extra costs, and should be operated by available personnel with additional short-term training. In a situation where the supply-demand disparity is so evident, realistic possible solutions are apt to be more attainable than in a more well-endowed society where services have developed over the years in response to perceived needs in a largely haphazard fashion. Perhaps the WHO experience can provide a lesson for North America.

MENTAL HEALTH SERVICES IN NORTH AMERICA

We are attempting, particularly in psychiatry, to deal with child, adolescent, and adult problems in a doctor-patient relationship when the social infrastructure requisite for normal physical, emotional, and psychological development of all children is not yet being met for a large percentage of the population. McDermott [43] has suggested that there are five stages in the growth of medical care in underdeveloped countries ranging from primitive to modern. The first stage in change away from the most primitive society is the introduction of the measures that are not customarily regarded as being related to disease at all but consist of such things as eating off the table instead of eating off the floor. Second come the more complex aspects of development: the roads, dams, bridges, communications, the provision of safe water supply, the draining of swamps, and the use of insecticides for malaria. The third stage includes intermittent professional care (for example, immunization every two or three years). The fourth stage is the introduction of the classic patient-physician relationship. The fifth stage is that of modern metropolitan medicine.

The mental health analogy to eating off the table instead of the floor may perhaps be regarded as having been achieved with the introduction of child labor and child protection acts. I am not convinced that even the analogous second and subsequent stages in the paradigm have been met, however. A large proportion of the population lacks adequate housing, transportation, facilities for recreation and education, adequate nutrition and antenatal care during pregnancy, and adequate cognitive and language stimulation, as well as affectional care, during the first two years of life. The physical, social, academic, and emotional deficits caused by social disadvantage have been clearly identified by the cohort studies such as the one carried out by the National Children's Bureau in the United Kingdom [18]. Studies by White and Watts [71] emphasize even further that by the age of school entry, the child's potential learning capacity has already been promoted or retarded by the preschool environment.

In 1967, Cowan and Zax developed a "bill of particulars" that comprised a list of unmet needs in psychiatry:

- 1 The need for mental health helping services far outstrips available resources.
- 2 Past practice has resulted in little progress in the treatment of entire classes of disorder — noticeably personality disorders.
- 3 It appears that both the effectiveness and impact of one of the backbone techniques in our helping armamentarium — psychotherapy — is being seriously overestimated.
- 4 Delivery of mental health helping services has been characterized by profound iniquities with a particular reference to race, social class, education, and geography.
- 5 Modes for delivery of mental health services are in the main out of tune with reality and life styles of vast number of potential recipients [17:5].

Even where the service is provided, it is beginning to be evident that the system of delivery is so fragmented that it may do more to promote than relieve family disintegration, conflict, or personal anxiety. In our haste to treat the index patient and return him as expeditiously and inexpensively as possible to the community, we forget that the psychotic patient is providing primary affectional care, cognitive stimulation, and social modeling experiences for his developing children, and we are only just becoming aware of the adverse effects of such a situation.

PSYCHIATRY AND SYSTEMS

We have a system problem. As Ackoff [1] has recently pointed out, there is no term for a system of problems; he therefore obligingly coined one; he calls it a "mess" "a system of external conditions that produces a dissatisfaction." There are certain things that should be recognized about this mess.

It is not deliberate on anybody's part; no one department of government and no one agency or discipline has set about to make life more difficult for the others. However, the implication that any change in one service system is going to affect other systems or services should now be obvious. For example, a reduction of educational spending led to more referrals of children for psychological and psychiatric assessment to psychiatric centers; a reduction in the budget of child welfare departments or children's aid societies resulted in increased reluctance by those agencies to take children into care and, in particular, to place disturbed children in expensive but well-run children's homes and institutions where less expensive, poorly staffed, inexperienced group homes were available; a work layoff at a factory — affecting first the most recently hired male immigrants — necessitated their wives going out to work and becoming the family breadwinners. This, in turn, resulted in an increased number of

admissions to the local psychiatric hospital: the loss of self-esteem in males from a patriarchal society having produced reactive depressive symptomatology.

The most highly expert and intensive services should not be used to try to patch up gaps in the social infrastructure.

There is an evident need for an improved classification system that would explicate the multicausal nature of many problems and that would reflect the multifaceted, complex character of many chronic conditions and thereby facilitate multidisciplinary case management planning.

Service planning as well as service delivery will require many competencies in many disciplines. A physician who informs parents that nothing can be done when he means nothing can be done medically for a child, is guilty of neglect for the deaf child, the retarded child, and the autistic child, where, to be effective, it is essential to institute educational techniques as early as possible in the child's life.

Planning styles affect reactions to increased demands. Ackoff [1] has recently elucidated four basic attitudes toward planning that have considerable relevance for the mental health field.

Inactivists are satisfied and believe that any interventions are likely to worsen the situation. They consistently refuse to believe that things are as bad as they are reported to be. Inactivist governments, if forced to do anything, produce committees, set up commissions, or develop white papers. If really pushed, they underfund projects, dooming them to failure.

Reactivists prefer the good old days and consistently feel that things are going from bad to worse. These are preeminently psychiatrists who feel we should return to the routine activities we are trained to do and not overstep our bounds and be concerned with problems of living.

Preactivists are not willing to settle for things as they were or are as they believe that the future will be better. Preactivists attempt to predict and prepare, and make forecasts as projections and plan for the future using modern science and experimentation. The preactivist psychiatrist, however, is concerned only with making a better mental health service.

Interactivists recognize that it is no good to plan anything in isolation; all human services must be planned conjointly (child mental health, education, social and correctional services, as well as vocational training programs and housing). Interactivism has four principles or planning factors — participative, coordinated, integrated, and continuing — and five planning phases — ends, means, resources, organization, and implementation. Obviously attempts to plan in a multifaceted or

multisystem fashion are compounded by the presence of a large percentage of inactivists or reactivists in positions of authority.

The planning problem is also compounded by the lack of a data base from which to develop needs assessments; a political framework that tends to be reactive rather than preactive or interactive; long-term planning that does not have immediate payoffs; a societal attitudinal set that still regards mental handicaps as something to be ashamed of and that stigmatizes some people; and a lack of a national attempt to husband human resources or conserve and develop human potential to the full. This last point explains why the recommendations of a long series of commission surveys, cohort studies, and reports, dating from the first White House conference through to the more recent report of the Joint Commission on the Mental Health of Children in 1970 [33] and the Celdic Report in Canada, also in 1970 [16], which have called for a concerted effort to improve the environment for children in order to facilitate optimal socioemotional and cognitive development in early childhood, have so far remained, for the most part, unimplemented.

THE PUBLIC HEALTH ASPECTS OF MENTAL HEALTH

"A task of mental health is to identify the new problems of individuals in a changing social scene, and to explore new ways to help people in their coping efforts" [15:11]. Jules E. Colman [15] and Goldston [27] have pointed out that primary prevention is probably the least understood and most neglected of all public health concepts adopted by the mental health field. From a public health viewpoint, preoccupation with illness to the total exclusion of health is irrelevant. Primary prevention, after all, has two distinct aspects: specific protection and health promotion. The former refers to activities both proved and presumed that aim to avoid the onset of mental illness. Examples would be the prevention of sequelae of rubella by vaccination of women prior to pregnancy, the prevention of some birth defects by adequate timely prenatal care, and the prevention of some premature and small-for-dates births by adequate nutrition in pregnancy. To provide adequate nutrition and antenatal care and to ensure that vaccination has been carried out prior to pregnancy raises an ethical question as to how far interference with individual liberty of the mother or potential mother is justified in order to respect the right of a child to be born healthy.

Bloom [5] has identified three different types of primary prevention programs. In community-wide programs, the target group includes everyone residing in a specific area; mental health education efforts by the mass media illustrate this approach. Second are milestone programs in which

residents of a particular community are screened at a specified time (for example, a prekindergarten screening program). Third are high-risk group programs, wherein groups especially vulnerable to specific stresses are identified, and programs are designed to decrease or prevent the occurrence of that condition. One group, for example, would include children who might be termed socially disadvantaged (with more than four children in the family or with a single parent, living in poverty, and living in poor housing). Children of schizophrenic or alcoholic parents, and the isolated elderly are usually considered to be at higher risk than average for the development of certain emotional conditions. Too little emphasized in the mental health field is the concept of health promotion. The key concerns are social competence, coping skills, and ego-strengthening measures rather than psychiatric symptomatology. Marmor [45] has issued a challenge and a goal for psychiatrists to function as public health officials, calling attention to the health hazards of our society — for example, the disastrous consequences of emptying out psychiatric hospitals without the alternate resources prepared in the community to receive patients who remain in need of shelter and stimulation. Another champion of the shift to a public health role is Hobbs [30], who emphasizes that what is needed is a mental health specialist who will encourage community organization and who is adept at the ordering of individual and community resources and of social invention.

A SUMMARY OF UNMET NEEDS

At the Case Level

For those patients who do get treated, there is often a lack of family orientation. The effect of a still dysfunctional but recovered schizophrenic parent on his developing children, the acting out of a person in psychotherapy on his spouse and children, and the emotional damage done to children by alcoholic parents are still not adequately considered by psychiatrists in hospitals, and clinics, community mental health centers, and private practice today. The reduction of patient population in psychiatric hospitals is certainly an achievement, but without carefully planned and sufficient aftercare and follow-up programs, the back wards of the hospital have swiftly shifted their location from the hospital to the community. The problems of quantity and quality of care will not be met with increased personnel alone, even if a massive increase in funds for training of all mental health professionals and paraprofessionals were to be made available. Even in areas where services are adequately funded and more readily available, as they are in Ontario, the mosaic of social, health, mental

health, correctional, and educational programs is so complicated that to match up individuals, families, needs, and services and to provide any sort of consistency and continuity of readily accessible and available care is virtually impossible.

At the Interface with Medicine

The development of liaison psychiatry programs in many hospitals has underscored the importance of the psychological aspects of medical and nursing care. That such aspects are frequently not even considered is evident in studies of hospital care — for example, that by Duff and Hollingshead 1968 [20]. The psychological effects of loss of a body part, of the receipt of a donated organ, of the knowledge of having a life-threatening illness are frequently neglected in medical practice. Medicine has become so technical and the number of specialists treating a single patient potentially so many that consideration of the psychological aspects of medical care has become increasingly attenuated. And yet the psychological sequelae of major surgery have inevitable results, not only on the patients' self-concept but also on his marital relationship and his interaction with his children.

The effect on the psychological development of a child of a severe, handicapping, congenital condition, interfering as it does frequently with activities, with achievements, and with interpersonal relationships, is beginning to be clearly apparent in conditions such as cystic fibrosis, which now carries a much better life prognosis than it did a few years ago [37]. Similarly the effect on a family of having a child with leukemia in remission with the ever-present possibility of a sudden relapse provides a severely stressful situation perhaps not always recognized by the family physician. The stress on the family may be even more severe where the condition is one of inevitable fatality, such as Tay Sachs disease [61]. In these situations the psychological effects extend not only to the index patient but to the spouse, grandparents, and siblings [2].

In any condition that provides disfigurement or dysfunction, the patient's and family's coping mechanisms are bound to be severely taxed, and yet routine psychosocial support not only is not always available but sometimes does not even seem to be recognized as an essential part of good patient care. For example, a fifteen-year-old boy who at the age of nine had suffered severe neck and facial burns requiring repeated plastic surgery was frequently in trouble at school, with his peers, and with his family because of his aggressive lashing out at others interspersed with self-mutilating behavior. This boy had never learned to deal with his

anger at being teased about his appearance, nor had he ever been offered any counseling in order to deal with his depreciated body concept.

The potential trauma of hospitalization is by now well recognized, at least for children. However adequate preparation of children for admission is still not routine, and preparation for treatments, for operations, and for exposure to other seriously ill children in the hospital is still not well carried out. All of these instances have implications for psychiatric practice at three different levels: at the case level, to provide consultation in terms of enhancing the understanding and knowledge of the psychology of the illness and to suggest methods of psychological care; at the program level, to be available for consultation in order to humanize the hospital environment and thus minimize the inevitable trauma; and at the system level, in terms of the need for more adequate psychosocial training for future physicians, surgeons, and nurses, so that the psychosocial care of the patient and consideration of the patient's family become an integral part of good patient care rather than a neglected component.

INTERFACE WITH OTHER SERVICES

It is almost impossible to treat a child without considering the ecological system in which he exists. Thus the family, the community, and the school are all integral parts of the child's life, and the child psychiatrist must be concerned with these important others in the immediate environment. It is much easier for the psychiatrist predominantly in adult practice to neglect the other facets of the patient's life, even at times to the exclusion of the spouse. The adult psychiatrist, like the child psychiatrist, has an educational responsibility to impart to others who deal day by day with people and their families, knowledge about basic minimal environmental requirements for normal emotional, cognitive, and social development and how to avoid unnecessary psychological trauma (for example, the unnecessary trauma wrought by prolonged and unprepared-for separation from his parents of the young child who is placed in foster care, or the detrimental effects of sudden, ill-timed moves at sensitive periods in a child's life). An eighteen-month-old who was suddenly removed from the foster home where he had lived since birth experienced a long period of regression and extreme delay in psychological attachment to his adoptive parents.

It is becoming more evident that for many children the death of a parent is a devastating psychological trauma, the sequelae of which vary with the age of the child at the time of the event [9,19]. A kind of psychological first aid could and should be rendered to children suffering such

events. This help could be adequate and sufficient therapy for many children. Other opportunities for prophylactic therapy include support to families at times of stress (for example, the death of a child or the birth of a handicapped child).

The first step in establishing a less traumatizing environment might be the provision of considered and concerned services to people in which the maxim *primum non nocere* would be the first order of business. Every move of a child from his family would be carefully planned, and the interests of the child — not the funding mechanism of the children's agency — should be the first consideration. All too frequently children are matched with services not because the latter meet their needs but because a less appropriate one happens to be available and willing to accept the child or is financially within the budget of the agency concerned.

Potential roles for psychiatry for the next few years include not only those of synthesist or what Levine [40] has called "the leadership of the orchestra" in developing management plans for severely troubled people and their families. Such plans must recognize also the need for a treatment component and the concomitant needs for continued caring and for vocational and educational programs on a long-term planning basis. Other as-yet uncharted territory includes a preventative role in the provision of services to families at risk. The children of psychotic parents [3] are clearly in this category, but rarely is support routinely provided to the family of a psychotic parent admitted to a hospital.

Despite the growth in all of the mental health professions, despite the development of paraprofessionals, and despite the community mental health center movement, services are still overwhelmed, and demands for quality of care as well as improved quantity are heard increasingly at a time when financial constraints are such that a reduction rather than an expansion of services may be the necessary order of the day. Perhaps we have not given nearly enough thought to alternatives to physician-patient, social worker-client relationships. These are expensive and very time-consuming, and, at least in the near future, there probably will never be enough manpower available, particularly for the subspecialties (geriatric psychiatry, child psychiatry, etc.). Even improved psychiatric training of the general physician will not provide enough manpower, as Shepherd [63] has pointed out, to meet the needs of the patient population for concerned psychological care. There are tools available that we should use — perhaps the radio for psychiatry at a distance. The bush radio has provided not only medical care but education for a large number of people in remote isolated areas in Australia; similar techniques could possibly be used for some isolated communities in North America. Another potential task for mental health professionals is the provision of services to target populations rather than individuals — for example, schools in areas that

have an increased incidence of children in the care of child welfare departments, appearances before juvenile court, or referrals by public health nurses.

PLANNING FOR SERVICE DELIVERY

A number of factors mitigate against adequate planning for service delivery. Holder [31] and Szurk and Berlin [68] have suggested the development of a science of mental health administration and training for residents in administrative psychiatry. Holder has pointed out that to maximize feedback capabilities, the mental health system requires a comprehensive system for the acquisition, dissemination, interpretation, and storage of relevant information. Such external factors would include a description of the potential population to be served, profiles of the community and its needs, an inventory of fiscal and social resources, an elaboration of any particular unique mental health problems, and some description of community structure. Rome [59] has suggested the formation of a psi net, a consortium of any number of mental hospitals, mental health clinics, and their related social agencies with a central nucleus to store and retrieve data.

In order to plan services adequately, we need to have much better social indicators of the state of particular sections of the population. Brim [7] suggests that if we are to study large-scale societal influences on children, new talents are required. People from many different disciplines, including the behavioral and social sciences, economics, history, and the law, are needed to pursue inquiries linking macroinstitutions to the lives of children. At present we have little knowledge of the trends in terms of the achievements, the problems, and the state of the physical and psychological well-being of children and other age groups, nor do we have any way of monitoring these changes in such measures over time.

ALTERNATIVE FUTURES OF PSYCHIATRY

Speculating about the future appears to have become an increasingly respectable pastime. Over the past fifteen years a whole new science of futurism has developed in place of what once was the realm only of palmists, soothsayers, and clairvoyants. Futures studies have now been set up at several universities, institutes and commissions have been established and several different predictive methods have been developed that can be used for cross-validating each other. Such predictions are, understandably, largely technological and do not include the possible resultant

psychological reactions (although sociopolitical trends have also come in for their share of prediction).

There are at least two ways of looking at the possible psychiatry of the future: one is to extrapolate from current psychiatric trends and practice; the other is to look at some of the alternate futures predicted and from these attempt to forecast some of the psychological problems that may result from the inherent stresses of such situations.

Recently a number of psychiatrists ruminated about the future of the specialty. Their predictions can be looked at along a time continuum from the immediate to the future of fifty years hence. Odegard [50] would like to believe that future progress will be less in therapeutic methods than in the rational evaluation of the results achieved by a systematic long-term follow-up of the patient's condition along several clinical and social dimensions. He believes that neurotic disorders will continue to occur with their present frequency but that the bulk of psychotherapy will be practiced by psychologists and educators. Eisenberg [23] forecasts more effective drugs for the treatment of psychoses and the development of improved aftercare facilities, such as well-run chronic units, hostels, and halfway houses in the community under the aegis of the psychiatric departments of general hospitals. He believes that the contribution of genetics will be preeminent and that a search for discriminators of potential schizophrenics in late adolescence will be successful, so that by the next century, it will be possible to structure special environments, both behaviorally and biochemically, for children identified by biological indices as being at risk for schizophrenia. Eisenberg also postulates that we will be able to prevent developmental attrition. The precise ways in which the environment influences cognitive and emotional development will be identified by research; as a result, by means of developmental evaluation and carefully planned intervention, the optimum physical growth of all children will be ensured. He postulates too that current psychiatric knowledge will be utilized by the general physician of the future to provide psychosocial as well as medical care, so that psychiatry once again will be able to move back into a secondary and tertiary role at the institutional level.

Schwartz [62] maintains that the psychiatrist needs a broader conceptual framework by which to connect individual institutions and feels that both an immediate and future task of psychiatry is one of developing strategies to use in humanizing the environment. He foresees the psychiatrist in the role of a social systems and family systems activist to foster changes that will bring about humanization. At the same time the psychiatrist should function as the critic of social institutions.

Looking further into the future, Lesse [39] forecasts that the psychosocial stresses of tomorrow will have different sources from those of today.

He suggests that a group ego will supersede the individual ego in importance because of the decrease in available living space caused by population growth. In the not too far distant future, it will be socially and economically unthinkable to continue a treatment as opposed to a prevention stance with respect to psychological disorders. Lesse foresees two general types of trained professionals: medical academicians and medical technical experts. The former would be trained primarily in the comprehension, expansion, and pragmatic application of the interrelationships among physiodynamics, psychodynamics, and sociodynamics. The psychotherapist of the future will be profoundly concerned with the influence of economic and political institutions on the well-being of the individual, and he will seek to have positive supports to the individual's ego structure automatically built into the political system. Methods will be developed to deal with the information explosion, and theories and methodologies will be needed to interrelate knowledge.

Maxmen [49] predicts by the year 2025 the demise not only of the psychiatrist but of the physician. He suggests that computers may not only take a more accurate history but also may be programmed to conduct psychotherapeutic dialogue. The time and duration of the session could fit not only the needs of the patient rather than the schedule of the therapist, but it would also be considerably more economical than conventional psychotherapy. He believes that the psychosocial side of medicine could be taken over and indeed improved upon by a well-trained medic who would be freed from technical activities to focus on providing emotional support; unlike the physician of today, he could be selected primarily on the basis of his personal qualifications. A feasible alternative is that, under a medic-computer model, the doctor's role could change from clinician to researcher. If Maxmen's predictions are correct, the professional identity crisis of today could become the professional panic of tomorrow.

The identity crisis in psychiatry is probably regarded as deleterious to the profession only by the reactivist who has a need for unitary answers, simplicity, and categorization. In fact the multiple demands on psychiatry and the resultant multiplicity of roles which psychiatrists of various interests and theoretical persuasions are called upon to fulfill may be a sign of strength, creativity, and adaptation to change. What at first sight may seem to be almost polar positions appear on closer inspection to have commonalities or merely to be looking at similar problems from different angles or even different levels. For example, the common denominators in all forms of dynamic psychotherapy, despite the apparent disparities between the different psychotherapeutic modes, have recently been elucidated by Marmor [44]. These include a good patient-therapist relationship, release of tension, cognitive learning, operant recondition-

ing, suggestion and persuasion, identification with the therapist, and repeated reality testing or practicing of the new adaptive techniques in the context of emotional support from the therapist.

A philosopher, Maruyama, has suggested that the transition from the industrial to the postindustrial era is not merely a matter of quantitative or qualitative change but a transition from our 2,500-year-old traditional logic to a new type of logic — from standardization, homogeneity, and thinking in categories to destandardization, heterogeneity, symbiosis, interaction, and thinking in social context. The development of synergistic or systems style thinking will no doubt facilitate the recognition that everything is connected. At the case level, we are just beginning to recognize the extent of the complexity of the etiological factors in the production of physical and emotional problems.

It is beginning to be evident that the greater the degree of stress or life change, the greater the probability that any population at risk will experience disease. Holmes and Masuda [32] postulate that the human organism attempts to react to stress by faulty adaptive efforts, which lower bodily resistance and enhance the chance of disease onset. The amount of stress and its time relationship to the onset of illness vary from disorder to disorder [52]. Undoubtedly there are relationships among the constitutional vulnerability of individuals, the amount and type of stress, and the types of disease, whether physical or psychiatric, that result [57]. The patterns remain to be identified more precisely, but the implications are clear that there should be some attempt to reduce the amounts of stress or life change (particularly for vulnerable people) and that people need to be taught to adapt more readily to change and stress. As the parameters of stress, distress, and disease become more clearly defined, it should be possible to begin to promote mental health in the true sense of the term rather than only to prevent or treat mental illness.

The psychiatrist is in a position to bridge the genetic temperamental, physical, intraphysic, interpersonal, and environmental aspects of the functioning of the individual patient and also to function as family systems analyst. At one step further removed from the index patient, the family has to be viewed in relationship to its immediate subculture. Although the psychiatrist may be invited to function as consultant to important others in the environment, there is also a potential and an as-yet seldom requested role as a collaborator in planning to humanize the environment in which people live and grow. In this instance the psychiatrist would be one of a number of professions concerned with the dynamic interplay between individual and environment. For example, mental health considerations should be included in the planning stages of high-rise apartments. Another example would be the alienating environment of the modern

comprehensive high school where educators have given a great deal of thought to the educational and academic needs of adolescents but apparently very little to their social and emotional needs in terms of access to concerned, caring adults and even to the necessity of fostering peer groupings so important to the teenage years.

At the institutional level, the general hospital, the correctional facility, the nursing home, and even the psychiatric hospital need humanizing. The multiplicity of concerns and disciplines that need to be involved in humanizing services have implications not only for improved communication and conjoint planning among disciplines but also for educating professionals during their training period to some extent together so that they are not isolated by their jargon, status, and separate though frequently overlapping functions and ideologies.

Despite the fact that there will be for some continued period of time to come casualties of the system that require psychopharmacologic and psychotherapeutic interventions, it is suggested that health promotion will become politically and professionally acceptable as a pastime (because it is becoming more and more obvious that the current modes of intervention are ineffective for large proportions of the population). At the individual level, the factors that promote the successful development of coping and adaptational skills, as well as optimal social, emotional, and intellectual growth, require continued research. What factors allow some people to develop despite the most adverse circumstances? This is an exciting area of enquiry, which is only just beginning to engage the attention of researchers. Garnezy [25] has suggested that the "invulnerable" child, the one who succeeds despite adversity and the cumulative stress that crushes most other children in similar circumstances, should be investigated. Klein and Golombek [34] have recently carried out a study of students who succeeded through high school despite adverse circumstances. Rutter et al. [60], in carrying out their epidemiological survey of children in an inner London borough, noted that some schools appeared much better able than others to promote behavioral and educational success in their students, although all the schools were in the same disadvantaged area.

At the community level, methods of providing informal support systems to replace those formerly filled by the extended family, long-lasting peer relationships, and the influence of social institutions such as the church will undoubtedly be areas for further explorations and project demonstrations. Caplan [10] has reviewed some informal systems and mutual help associations that have developed over recent years and that appear to be supportive to their followers where professional intervention has been notably unsuccessful (for example, AA, Synanon, and Recovery Inc.). Facilitation of supportive systems is not new; a small health club was set up in Peckham in London in 1925, and neighborhood families

were encouraged to join with the opportunity of having a periodic free health check-up. Between 1935 and 1939, a recreation club in the same region was established for the two thousand families living in the district. A high percentage of members were found on examination to have at least minor health problems; on reassessment at a later date a much higher percentage of the families who used the club were found to be healthy. The club was also successful in developing a sense of community [24,53].

Undoubtedly a whole range of different ways of fostering informal supports will be developed. Communes, kibbutzim, and multiservice centers geared to health promotion may furnish possibilities. Toffler [69] suggested that whole villages should be set up as "enclaves of the past" where those who could not cope with the rate of social change might live in peace. He also suggested that "enclaves of the future," set up to demonstrate and try out new technologies, might allow people to visit, contemplate, assimilate the experience, and thus promote adaptation to the future.

In assisting individuals, families, and institutions in planning, the psychiatrist of tomorrow is likely to have even more problematic ethical considerations to contend with [58]. The rate of change is not likely to be reduced in the immediate future so that promoting mental health at the same time implies promoting individual "copeability" in Toffler's terms. At least it should be possible to predict, from societal trends, from new technological developments, from newly introduced surgical tours de force, new drugs, and new genetic manipulations some of the inevitable psychological sequelae. Psychological care must become part of holistic medical and surgical care, and although the psychiatrist of the future will not be able to provide such care directly, one might hope that the implications of new trends and new techniques will be part of the psychiatric armamentarium.

In order to prepare for the kind of life that may well exist around the turn of the next century, as Duhl [21] has emphasized, "We would do well to consider what mechanisms, what people and what decisions must be attended to today, in order to shape all the years to come."

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28

Values and Ethics in Medicine

Judith Tormey, Ph.D., and Eugene B. Brody, M.D.

Physicians feel themselves unique in the quality of power inherent in their professional roles. They are, indeed, invested by society with the shaman's historical cloak. Thus they are perceived not only as masters of an esoteric technology — which has high value in a scientific culture — but, albeit at a preconscious level, as possessed of the undefined power that a child attributes to a parent. The physician is in the culturally unique position of being able to transgress taboos that constrain the behavior of others, as well as of allocating life and death and alleviating pain. Small wonder that he, as the shaman, is expected to embody whatever society values as good and moral and, in addition, to confront ethical problems which transcend everyday life.

But are the moral questions faced by physicians and the institution of medicine in fact unique? It is true that medical examples can be provided for the types of problems basic to ethical theory, and it may be argued that the moral questions physicians face are not uniquely generated by their social roles or the institution of medicine. Many dilemmas in medical ethics seem, rather, to illustrate the range of perplexities characterizing the existence of all humans as morally reflective beings. Thus it

is of general moral concern whether lying can be justified, and this problem is reflected in the question whether a physician should, in certain circumstances, lie to a patient. Similarly it is of general concern whether the inhabitants of richly endowed nations should retain their resources for their own use or share them with the less-developed world, whose inhabitants suffer from malnutrition and disease. The moral issues inherent in this concern are reflected in the question as to how to distribute scarce medical resources, such as hemodialysis. The controversies over the justification of euthanasia and abortion in medical practice provide another example. Is killing always wrong, or are there occasions on which it may be a morally justifiable act? Medical investigation offers yet other examples illustrative of basic moral problems. If the scientific acceptability of a research design requires placing some persons at risk of harm without foreseeable benefits to them as individuals, is the design morally justified by its expected benefits to society as a whole? The general problem in social ethics is the justification of the burdens life in a society may impose on an individual for the sake of the public good, and being the subject of a medical experiment is one among many possible examples which require moral reflection.

These questions are related to issues that have been discussed at length by individual physicians and medical policy makers. Is the doctor's primary obligation always to his patient, or does he have a commitment to society (including the patient's family) as well — and one which may sometimes override that to the patient? Are all lives to be considered of equal value, regardless of intactness and self-awareness? What is unique about a human life as compared to other lives, and how is personhood to be defined? Is coercion ever justified in the pursuit of individual or public health? Does everyone have an equal right to medical care or access to extraordinary life-preserving methods? Is there an inviolate right to privacy? These problems can be explored only after examining the common ground shared by ethical issues in medicine with the types of problems generally treated in ethical theory. At the same time we recognize that the mere identification of commonalities does not necessarily imply that existing ethical theory is capable of dealing with all the problems under discussion or that medicine does not generate some unique moral dilemmas.

THE ETHICAL BACKGROUND

The two major competing ethical positions that provide an essential background for medical ethics are Kantian (deontological) theory and utilitarianism.

Kantian Deontology and Medicine

Moral evaluations are usually considered a legitimate (if controversial) part of human existence. Few question the view that it makes sense to characterize a person's actions as right or wrong and, as well, to describe the person in moral terms. Most frequently controversy among the morally concerned arises at another level. Since it is assumed that moral evaluation is legitimate, the disagreement commonly expressed is over which moral stance is correct. Intense concern over moral standards in medicine illustrates this point. Some controversial cases in medical practice, and especially in research, show that moral standards are taken to be as relevant as those of scientific adequacy. When Henry K. Beecher [1] claims that "ethical errors are increasing not only in numbers but in variety" in medical experimentation, he assumes that moral evaluation of medical practice is possible.

Kant [9] does not accept at face value the assumption that morality is possible but raises the question, "How is it possible?" To cast this in terms of medical ethics, we might ask what distinguishes an ethical error in medicine from errors in judgment, such as an incorrect diagnosis? Or, perhaps, what is the difference between a decision made on clinical or scientific grounds and one made on moral grounds? How is the moral evaluation of physicians and their actions possible?

Some recent reflections, inspired by psychiatry and psychology, have resulted in the conclusion that morality as many ethical theorists understand it is not in fact possible. It is argued that morality is a philosophical illusion kept alive by a mistaken view of human nature and human existence. The title of a recent well-known work by B. F. Skinner [16] expresses this view bluntly when it indicates that a standpoint is being adopted which places us *Beyond Freedom and Dignity*.

Freedom and dignity are two concepts classically associated in Kantian theory with the possibility of morality. Skinner is concerned especially with experimental evidence suggesting that human behavior can be shaped by conditioning techniques, i.e., reinforcing or aversive rewards and punishments, without reference to what goes on inside the person. Free or autonomous decisions, reflection, or self-examination have no place in this scheme, which is concerned solely with input to and output from the human being regarded as a "black box," the interior of which is of no interest.

A position equally antithetical to the possibility of morality is adopted by James Gilligan in "Beyond Morality: Psychoanalytic Reflections on Shame, Guilt, and Love":

It was with the psychoanalytic investigation of neurosis that the study of morality first passed from philosophic to scientific scrutiny. It became possi-

ble through psychoanalysis to study moral experience (affects, reasoning, and behavior) empirically, as a phenomenon of human psychology: more importantly, the replacement of moralistic value judgments and condemnations with psychological understanding represented the transition to a new and higher stage of human cognitive development in the sphere of what philosophers call practical, as opposed to speculative, reason. [7:144]

Freud, a conventionally rigid moralist of his time, looked to the unconscious for the source of inner standards, transgression of which he regarded as the cause of that unpleasant subjective tension he called guilt. He designated the censoring, standard-bearing unconscious organization or structure the superego. A fundamental quality of this structure was its developmental character beginning with strong, persisting roots in childhood when the threat of punishment or withdrawal of love was held by parents who were giants upon whom survival (ensured by "good" behavior) depended. The possibility that such a structure might be distorted or conflictful is clear and is postulated as a significant source of psychological difficulty.

To the extent that the above positions are generated by what their authors take to be a scientific outlook, they are not in disagreement with Kant. Morality for Kant requires capacities that are not treated by a scientific account, capacities responsible for autonomy. A well-established tradition in ethical theory links morality with rationality. Most objects, animate as well as inanimate, are not held morally responsible for what they do, and the characteristic that distinguishes individuals held morally responsible from the vast collection of nonmoral beings is the capacity for reasoned reflection and rational decisions. Morality requires a dimension to the existence of human beings (as rational beings) essentially different from that aspect of their existence captured in scientific determinism — including that reflected in the concept of superego. For Kant rationality represents a capacity that makes morality possible by providing the foundation for autonomous self-determination or self-legislation. Kant observed that "Everything in nature works according to laws. Only a rational being has the capacity of acting according to the conception of laws, i.e. according to principles" [9:29].

The exercise of this capacity for self-determination is regarded by many as an essential human function. It is basic to such clinical and legal concepts as criminal or testamentary responsibility. It is embodied in these cases in such tests of responsibility as the ability to appreciate the difference between right and wrong and to act upon what is right. In admitting the relevance of this argument, psychiatrists seem to be affirming a view similar to Kant's in which rationality and responsibility are intrinsically linked. This position is a difficult one, however, for as Seymour Halleck notes; "any definitive statement which the psychiatrist offers as to

the responsibility of the offender must have a certain inconsistency. If he argues that a man is responsible for his behavior, he begins to compromise certain tenets of scientific determinism. If he argues that a man is not responsible, he speaks against ethical codes and traditions which seem to have always been necessary to preserve a smoothly functioning society" [8:209].

The possibility of morality and its connection with rationality is closely linked in Kant's system to another basic question, "Is there anything which is unqualifiedly good?" Even if our objective physical behavior could be considered morally right or good, it could not be unqualifiedly good since it includes some nonmoral contingencies in the natural world. Any sphere over which the individual cannot exercise complete control contains elements that qualify goodness. In addition, according to Kant (and some contemporary scientists as well), attributes often considered good, such as intelligence, can be put to immoral use by someone with an evil will. In that case they would not serve as examples of unqualified goodness. The will itself, however, may have the potential for unqualified goodness when it is formed in the right way. Where we do not have complete control over carrying out our intentions, we may nevertheless be capable of self-determination in the formation of the intentions themselves.

The possibility of individual autonomy, requiring the exercise of will, offers a link between moral responsibility and unqualified moral value. These latter are bound together by the proper use of reason. The capacity to act because the content of a law has been understood is unique to creatures with the capacity for rational thought. In contrast obedience to natural laws does not require a grasp of their content and is an example of neither moral nor autonomous behavior.

The concept of law implies universality, Kant argues. Thus for a rational being to be the source of his own laws, it is necessary to respect the element of universality in the concept of law. Kant claims:

The moral worth of an action does not lie in the effect which is expected from it or in any principle of action which has to borrow its motive from this expected effect. For all these effects (agreeableness of my own condition, indeed even the promotion of the happiness of others) could be brought about through other causes and would not require the will of a rational being, while the highest and unconditional good can be found only in such a will. Therefore, the preeminent good can consist only in the conception of the law in itself (which can be present only in a rational being) so far as this conception and not the hoped-for effect is the determining ground of the will. [9:17]

To be self-legislating in the Kantian sense is to form and obey one's own commands or imperatives. Kant provides a way to test whether a self-

command is consistent with the element of universality contained in the concept of law: "Act only according to that maxim by which you can at the same time will that it should become a universal law" [9:39]. This is one formulation of the cornerstone of Kant's system, the categorical imperative.

The capacity for self-legislation through the exercise of reason gives a rational being a particular kind of dignity which requires respect. Using or exploiting a person, no matter how socially or personally beneficial the consequences, is incompatible with such respect. The arguments for informed patient consent reflect the Kantian tradition in modern medicine. Any treatment that proceeds without such consent can be viewed as using the person as a means, which is incompatible with the respect owed anyone who has the capacity for autonomous action. Physicians often argue, however, that at times they must withhold information from a patient or assume responsibility for making a crucial decision, for example, about a risky diagnostic procedure or treatment. They justify their decision as necessary to the patient's well-being; the anxiety generated by the information, or the tension attendant to requiring him to be responsible for the decision, would be injurious to his health. In fact many, if not most, patients request the physician to assume this decision-making responsibility. It is widely considered part of the doctor's role, and there is much evidence that disease processes are diminished and pain alleviated to the degree that the patient has faith in his physician. This may also be tied to the societal role of patient. A person so designated is temporarily freed of certain responsibilities. At the same time, however, he is expected to cooperate with his physician in the effort to regain his health (and reassume his social responsibilities), and this usually entails his acceptance of medical advice. It might be argued by a Kantian, nonetheless, that the patient is being used (paradoxically perhaps) only as a means to his own health, which would be incompatible with respect for the patient's dignity and autonomy. A moral dilemma emerges here in the conflict between the obligation to inform and to encourage autonomy generated by respect for the patient and the promotion of health, which is part of the physician's role. In this respect psychoanalysis and psychoanalytically oriented psychotherapy differ significantly from most forms of medical treatment. Unlike the latter, which is administered or applied to patients, the former involves patients on collaborative basis. The patient himself is engaged in the treatment. His capacity to reflect is utilized in the therapeutic process, which has, among other aims, the repair of his capacity for autonomous action. Whether this goal of psychoanalytic practice is compatible with its theoretical commitment to scientific determination has been debated in recent literature [10].

Utilitarianism and Medicine

For a utilitarian, an action's moral worth is directly dependent on whether it has consequences which contribute to the realization of the summum bonum (supreme good or ultimate end). Utilitarianism is essentially different from Kantian deontology. Considerable disagreement, however, can be found among utilitarian theorists concerning the answer to the question, What is the summum bonum? While most agree that happiness is the ultimate end, for the sake of which everything else is used as a means, there is no general agreement about what constitutes happiness. John Stuart Mill, whose *Utilitarianism* [12] is the most widely read treatise on the subject, claimed that happiness consists in pleasure and the absence of pain. (He subsequently distinguished between physical and mental pleasures, however, and accorded the higher worth to the latter.) Mill states; "Pleasure and freedom from pain are the only things desirable as ends; and . . . all desirable things (which are as numerous in the utilitarian as in any other scheme) are desirable either for pleasure inherent in themselves or as means to the promotion of pleasure and the prevention of pain" [12:10-11].

A physician following the utilitarian standard in deciding how to treat a patient would try to determine which course of action would be likely to maximize the sum of happiness for all: in Mill's scheme, to maximize pleasure and minimize pain. Since in the utilitarian system each individual counts as only one unit, the happiness of everyone likely to be affected must be worked into the calculation. Those involved in addition to the patient might include his family, some unrelated members of society and the medical community, even future generations. In this view, then, the physician's primary obligation is not to the person who seeks help but to society.

The significance of the utilitarian approach may be illustrated by decisions concerning the allocation of a scarce medical resource such as hemodialysis. A nonutilitarian might distribute the resource in a manner reflecting the basic right of each patient to treatment [3]. A utilitarian, however, would consider not only the patient's right to treatment but the consequences of providing treatment for patient A rather than patient B; for example, he may consider the future beneficial (or nonbeneficial) contributions each is likely to make to society. Here, of course, the basis of such predictions, including the definition of what is, indeed, beneficial to society is a moral issue.

The controversy over medical experimentation is a source of examples illustrating the difference between utilitarian and nonutilitarian morality. A utilitarian might more readily accept an experimental design

placing some at-risk persons in an experiment not expected to benefit them. The crucial point would be the possible consequences of benefit to others. In this sense, the basic utilitarian commitment to maximize happiness for the majority may offer a moral justification for social injustice to a minority. This aspect of utilitarian theory thus seems to sanction a disregard for the fundamental value and right to respect of each person. A frequent illustration of this problem is the proposal to frame and punish an innocent person in order to prevent a riot or deter crime. Suppose that the beneficial consequences to a large segment of society in this instance would dramatically outweigh the suffering inflicted on some people. Would that, in fact, justify using them for that purpose without their consent? The issue may be complicated by asking how gaining a short-term benefit to society in this way might influence that society's long-term character.

A useful device for questioning an ethical theory in this manner can be developed. Consider the following matrix in which the vertical columns represent three values: just, nonjust, and unjust. The horizontal rows have the values moral (morally right), nonmoral, and immoral. This system takes into account the possibility that some acts are neutral (neither just nor unjust, moral nor immoral).

	Just	Non-Just	Unjust
Moral			
Non-moral			
Immoral			

It is easy to think of an example for the first intersection (moral and just): paying back a debt under appropriate circumstances. It is also easy to think of actions that are immoral and unjust: discrimination in wages for irrelevant reasons. The reader may consider some of the other categories and find examples to fill in the boxes in the matrix. Critics claim that the fundamental moral principle of utilitarianism can be invoked to generate examples with an X in the upper right-hand box of the matrix: an action

measured against the utilitarian standard would be morally right but obviously unjust. If utilitarianism cannot be shown to be free from this defect, it is argued, then it cannot be accepted as the ultimate source of moral guidelines.

Here is another reason why informed consent has become a central issue in medical ethics. A person's voluntary and informed contribution to potential future happiness for others, even at some personal risk and with no immediate prospect of personal gain, is compatible with standards of social justice. In contrast the sacrifice of the nonconsenting individual represents a form of social exploitation. It is difficult to see, however, how utilitarian theory can account for the relevance of informed consent as it is difficult for it to account for the relevance of innocence where the justification of punishment is at issue.

Sometimes informed consent seems to conflict with scientific standards of acceptable research, and if it is built into the research design may decrease or even negate its scientific effectiveness [6]. Where a research design requires deception for its scientific acceptability but informed consent is required for its moral acceptability, we are faced with a not easily resolved dilemma. In some forms of field research — of an ethnographic nature, for example — deception is not required, but the interaction necessary to obtain truly informed consent may change the outlook and behavior of the population to be studied. This last is an issue even without informed consent since the participation of the sociologist or anthropologist in the socioculture under study will inevitably change it to some degree and quite possibly in directions incompatible with the well-being of many of its members.

The two traditions, Kantian and utilitarian, frequently seem to be sources of conflicting and possibly unreconcilable obligations. The maximization of benefits such as health (surely a central part of the pursuit of happiness) might require that the patient be treated in a manner incompatible with the obligation to respect his right to self-determination. Utilitarian thinking is often found as the moral basis for medical decisions justified on clinical grounds, perhaps because it is more compatible with scientific determinism. However, an awareness of its potential abuse in rationalizing societal injustice makes it impossible to resolve the tension generated by the conflict in traditions by accepting it in an unrefined form.

Double Effect

An influential view used in part to avoid the difficulties associated with utilitarianism is the doctrine of double effect (twofold effect). This has

become a major focus of discussion in the debate over the ethics of abortion [6]. Part of its appeal lies in the fact that it incorporates deontological elements while at the same time acknowledging the relevance of the consequences of actions.

Double effect is a causistic principle often traced to the work of the Catholic philosopher-theologian Saint Thomas Aquinas. A. V. Campbell states it succinctly:

The formula is expressed in the following conditions which must be fulfilled in order for an action, which has both good and bad effects, to be regarded as morally good: (1) the action itself must not be intrinsically bad; (2) the good effect must not be a direct consequence of the bad effect; (3) the good effect must be "directly intended": the bad effect only "indirectly intended," or "tolerated": (4) The good effect must be equal to or greater than the bad effect. The operation of these conditions can be demonstrated by applying them to two hypothetical cases:

Physician A prescribes a pain-killing drug for a dying patient, which causes some shortening of his life expectancy.

Physician B prescribes a lethal dose for a dying patient in order to put him out of pain.

The principle of two-fold effect condemns B's action but allows A's on the grounds that B's prescription caused the patient's death which then relieved the pain (condition 2 violated), whilst A's prescription *intended* the good effect of alleviating pain and merely *tolerated* the bad effect of shortening life. [2:100-101]

This principle would not allow the unjust punishment of the innocent person even if the beneficial consequences for others were substantial. The punishment could surely be construed as a direct violation of condition 1 since intentionally punishing an innocent person is intrinsically bad. And it would disallow many forms of medical experimentation, no matter what long-term gains in scientific knowledge or societal well-being might be anticipated. The principle would rule out any action as a means, no matter how valuable its consequences, if that action were intrinsically wrong.

Without the background of a set of theological or moral criteria, however, which establish which actions are intrinsically wrong, the doctrine is difficult to apply with the consistency required by moral practice. In addition its application in abortion cases results in a decision not to intervene if one of the lives (either that of mother or fetus) can be saved only at the expense of the other since its major proponents claim that the fetus has a right to life equal to or greater than that of the pregnant woman. The consequence, then, requires the physician to let both die. Double effect need not have that outcome, though, for those who do not view abortion as intrinsically wrong, this reveals the crucial difficulty with the doctrine.

While its application assumes a resolution of significant moral disputes, such as the status of the fetus, it does not provide the resolution. Because of the difficulty in applying it uniformly, many critics of this principle argue that it has deficiencies as unacceptable as those of the unrefined utilitarian theory.

Act and Rule Utilitarianism in Medicine

Another way to remedy the defects of utilitarianism relies on the distinction between individual actions and types of actions — for example, that between a particular lie and lying in general. The question has been raised whether the ultimate utilitarian principle was meant to be applied to each individual case (a procedure of enormous difficulty) or whether its function should be to settle questions about morally justifiable types of action. J. O. Urmson [19] argues that Mill meant the ultimate utilitarian principle to be used to evaluate rules (principles specifying that some types of actions — e.g., lying and killing — are wrong and other types — e.g., keeping promises — are right). The focus of ethical theory is shifted from individual actions to practices and institutions, from individual medical decisions to the place of medicine in a just society. A central question is whether the emphasis on rules overcomes the standard objections to the theory and captures the relevance of informed consent to medical practice and innocence to the institution of punishment.

John Rawls explicitly expresses his desire to remedy the defects in utilitarian theory by a shift to the perspective of rules: "I hope to show that if one uses the distinction in question then one can state utilitarianism in a way which makes it a much better explication of our considered moral judgments than traditional objections would seem to admit" [13:3]. Rawls' arguments are intricate and complicated. Basic to his insight, however, is the idea that an institution of punishment that did not match punishment to guilt would not satisfy the basic utilitarian requirements. Such an institution would be less useful to a society than one in which innocence functioned as an overriding reason for withholding punishment. Thus where an individual unjust act might appear right on utilitarian grounds, it could not be justified when the focus is shifted to types of actions and their place in a just society.

One difficulty associated with utilitarian justifications of medical experimentation is their apparent failure to reflect the relevance of obtaining informed consent. This could be done, its proponents might argue, by rule utilitarianism. The distrust generated by a medical institution (it might use patients for experimental purposes without their consent)

weakens the institution in a way that reduces its usefulness as a source of societal benefits.

A rule utilitarian might also provide support for the physician's refusal to engage in active euthanasia even in the particular case where the outcome appears clearly beneficial to everyone (although the benefit to the patient might be debated). It could be argued that a physician can legitimately refuse to practice active euthanasia because the practice of killing as part of the institution of medicine would diminish its capacity to contribute to a major goal, the promotion of life and health. Analogously a social scientist might argue that adding the privilege to kill to those already possessed by the physician is incompatible with his primary social role: preserving life. It would furthermore grant him the power of making decisions that cannot be based on clinical or scientific grounds and require the kind of moral discrimination usually reserved for other members of society or for the physician outside his healer's role.

To develop these insights it would be necessary to subject the entire institution of medicine to the same critical moral scrutiny to which legal institutions have been subjected for centuries. (It may be remembered that unrefined utilitarian theory was considered justification for "punishing" an innocent person. The rule utilitarian, in contrast, claims that for the institution of punishment to work effectively, it must be applied only to those who deserve to be punished.) Thus, the rule utilitarian argues, the utilitarian standard properly applied (to social practices) does not legitimate lying promises (or expedient promise breaking), punishing the innocent, or disregarding the rights of some people for the sake of maximizing benefits for others.

An additional refinement Rawls introduced in his later work, *A Theory of Justice* [14], requires the designers of a social institution ideally to be unaware of its impact on their own lives as members of the society they are constructing. They should not know whether the institution will affect them at all or in what way it might be woven into their individual lives. This would preclude the design of discriminatory institutions.

Applying Rawls' concept to the institution of medicine, we can see that ideal designers would build safeguards against certain forms of experimentation into the institution since they would not know when they might be in the position of an experimental subject. A plan would be developed for the practice of medicine acceptable to the physician if he were a patient with no special status.

Social Ethics and Medicine

A basic axiom of social ethics is that societal limitations on individual liberty must be justified. This reflects the view that liberty is intrinsically

valuable. The background for this view is often provided by some form of social contract theory in which the benefits of life in a society organized by a system of laws are taken to legitimate the burdens imposed by that society, particularly those associated with limitations on liberty. While these last are considered necessary for social harmony, they must always be justified.

The prevention of harm to others has stood as a paradigm of a relevant reason for societal restrictions on individual liberty. This principle was enunciated by John Stuart Mill in his classic work, *On Liberty*:

The only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so, because it will make him happier, because, in the opinions of others, to do so would be wise or even right. These are good reasons for remonstrating with him, or reasoning with him, or persuading him, or entreating him, but not for compelling him or visiting him with any evil in case he do otherwise. [11:13]

Reflections of the social contract view can be seen in Mill's position since a frequently cited benefit of life in society is protection from harm. Anyone who accepts this benefit vis-à-vis others may expect in consequence of commitment to principles of fairness to have his own liberty restricted when its free exercise would threaten the safety of other members of the society.

A central question regarding the place of medicine in a just society involves the justification of constraints on individual freedom on the basis of medical diagnoses. Some medical diagnoses do not describe a condition likely to result in obvious harm to persons other than the patient. The diagnosis of a communicable disease, on the other hand, is often taken as a clear justification of limitations on liberty since it contains the threat of harm to others. The prevention of the spread of genetic disease through vertical transmission from parent to offspring creates some special problems, and these may, in fact, be examples of some moral problems unique to medicine. Preventing the transmission of genetic disease appears to require either terminating the existence of the potential victim through abortion or preventing the potential victim's conception. Thus these cases are dramatically disanalogous to cases in which existing persons are saved from contracting communicable diseases through limitations on liberty (quarantine, for example) which control the horizontal spread of the disease [18].

It has frequently been argued that Mill's views in *On Liberty* are not strictly compatible with the utilitarian principle. They have, however, been very influential. Mill's paradigm is basic to a question frequently

faced by the psychiatrist: are the characteristics taken to be symptomatic of mental illness, in fact, significantly related to the likelihood that the person so described will harm others? Or are the types of behavior considered symptomatic benign with respect to their potential for harm and more closely analogous to forms of behavior considered merely distasteful or deviant, as not in conformity with widely accepted standards of behavior? If this is the case, why are only some forms of deviance grounds for social restraint? We can see in this question the reflection of another significant principle in social ethics: consistency of social practice. This principle requires that differences in treatment be justified by relevant moral differences between cases. If two members of society both engage in behavior that departs from widely held social norms at a given time, but one exhibits symptoms of mental illness and the other is merely (willful) nonconformity, is that difference enough to justify a difference in treatment? The consistency-of-practice principle is fundamental if we want to see that limitations on liberty may be justified in some cases and not in others.

Paternalism in Medicine

Limiting the liberty of individuals in order to prevent them from harming themselves is called paternalism. It is clear that Mill was violently opposed to paternalistic interventions by a government in a civilized society. This relationship between the society and the individual is based on the model of the parent-child relationship — unlike the prevention of harm to others, which can be linked to social contract theory. In a contractual relationship we have two presumed equals, each of whom may agree to be bound in certain ways (to accept limitations on freedom of action) for the sake of future benefits and will see built into those limitations certain forms of enforced compliance or sanctions against violating the contract. The model for the social contract is two self-interested, consenting adults rather than a parent and child. Szasz [17] has relied on these elements in the contract theory to develop his view of the ethics of psychoanalysis. In contrast to the contract model, the parent-child relationship has basic inequalities built into it, which are more than mere inequalities of power. The parent feels justified in imposing limitations on the child's freedom of choice because the child is considered incapable of making the correct judgment or deferring immediate gratification for the sake of long-range benefits, such as health and growth. The capacity for reasoned judgment is taken to be lacking in the child but present in the parent.

When we are reminded that paternalism implies unequal status, we can see why many social theorists such as Mill have regarded its extension

beyond the parent-child relationship as incompatible with respect for the autonomy and right to self-determination of adults. Inequality in status can be justified only by the unequal development of knowledge and moral insight. That some parents are in fact no better in these respects than their children is beside the point philosophically. When their conduct toward their offspring is justified, superior insight must be present. Parental limitation on the freedom of offspring is not legitimated by unequal power but presumed inequality of rational insight, both factual and moral. This differentiates the paternalistic justification for limitations on the liberty of adults to prevent self-harm from limitations to prevent harm to others. This is why a theorist such as Mill could accept one type of restriction on the liberty of adult members of a society and reject the other. He does not argue against the parental restrictions of children but against paternalism as a model for the treatment of individual adults in a just society.

We can see, then, that paternalism as a model for limitations on liberty requires that an inequality of status be established with respect to the capacity for reasoned judgment. The desire merely to harm oneself cannot be taken as sufficient evidence for the absence of this capacity; that would be begging the question. (It would make, in effect, the desire to harm oneself the major reason for limitations on liberty designed to prevent self-harm.) Nor can the absence of information be the basis in cases where the individual, merely out of ignorance, is pursuing a course of action injurious to self. The better course is not to restrain or coerce but to inform.

For these reasons the widespread paternalistic practices by physicians have been viewed by ethical theorists as illegitimate exercises of power generated by a reparable inequality, the inequality of information (for example, in cases where the patient is not told that a diagnostic procedure contains certain risks for fear he will not consent to it). The diagnosis or suspected occurrence of a physical impairment does not contain within it the evidence of lack of capacity for reasoned judgment, which is one of the keys to the justification of the parental limitations on the liberty of the child. The acceptability of certain risks is not a strictly scientific question. Thus the physician's superior knowledge would not place him in a better position to determine whether the risks are acceptable.

Nevertheless an argument can be made for the position that a psychiatric diagnosis implies a diminished capacity for reasoned judgment, and this would in fact set psychiatry apart from other branches of medicine with respect to the paternalistic model. Many philosophical interpretations of the psychiatrist's role imply that key elements in the diagnosis of insanity would provide a case for viewing the insane person as relevantly like a child in diminished capacity for reasoned judgment. Fingarette claims that "it is [the] failure to grasp essential relevance that is what we see as irrationality in contexts related to insanity" [5:18]. This capacity to

exercise reason is expressed in a variety of clinical expressions: reality contact or its lack, autism (a tendency to respond to inner rather than outer stimuli), or adaptive failure (an inability to establish and maintain a stable, reciprocal relationship with others). Each expression implies that the patient's way of thinking, feeling, and acting deviates so significantly from the norm as to interfere with his social (and often physical) survival and, furthermore, fits a recognizable syndrome with etiological and prognostic connotations. It may, for example, be congruent with the generally recognized pattern accompanying cerebral atrophy (such as Pick's disease or one of the presenile dementias) with an inevitably deteriorating course. Or it may fit the recognized pattern of unipolar depressive disease associated with a probable family history of affective disturbance and a probable prediction of remissions and recurrences, which can be influenced by appropriate medication. In every instance the person's capacity for reasoned judgment is so impaired that he is unable to care, unaided, for himself. The justification of paternalism requires this likeness to the child with respect to inequality of capacity for reasoned judgment.

If the use of psychiatry to establish diminished responsibility is legitimate and if the philosophical interpretations of insanity offered by philosophers such as Fingarette are correct, then we have ingredients for an analogy between the doctor-patient and the parent-child relationship. However the question arises. If some insane persons are like children in lacking the capacity for reasoned judgment, are they like normal or retarded children? The answer is crucial because the parent-child relationship includes the responsibility and obligation to do more than merely limit the liberty to prevent harm to self. There is an obligation to promote the rational and moral development of the child. The paternalistic model, therefore, would not justify mere custodial care unless there are good reasons to think that it also implies that the analog to the patient is a child incapable of developing rational capacities. This, then, reinforces commitment to a goal many see as essential in psychiatric practice: a contribution to the capacity for self-determination of the patient. It is also consistent with a responsibility often overlooked in the practice of medicine as a whole: the responsibility to educate. A recent manual designed to facilitate the satisfaction of this obligation [4] quotes William Osler: "'Tis no idle challenge which we physicians throw out to the world when we claim that our mission is of the highest and of the noblest kind, not alone in curing disease but in educating the people in the laws of health."

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29

Professional Accountability and Peer Review

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WHY ACCOUNTABILITY?

Quality versus Cost

In responding to the demands for accountability peer review is expected to deal not only with the quality of care but with issues of cost as well. This new expectation, cost containment, developed because the effort to improve the nation's health has been crippled by the escalating cost of health care. To slow the inflationary process, third-party payers, such as the federal government and insurance companies, have either imposed arbitrary limits on expenditures or have challenged the necessity and, more recently, the quality of care being financed.

To demonstrate that their services are effective, efficient, and meet standards of quality, providers of health services have moved to develop quality assurance programs. Even though such programs focus on quality, they must be responsive to the alarming increase in health care costs since the enactment of Medicare and Medicaid. Annual expenditures for health services in 1965 were about \$40 billion, claiming 5.9 percent of the gross

national product; by 1977, expenditures quadrupled to over \$160 billion, claiming 8.7 percent of the GNP. The Department of Health, Education and Welfare (HEW) projects that by 1990, 10 to 12 percent of the GNP could be spent for health care. Because the amount spent on health multiplies disproportionately to other expenditures, consuming an ever-higher percentage of the GNP, the public wants to know if the money is being spent in a cost-effective manner.

As the cost of health care has become a political issue, legislators are hedging on the original declaration that health care is a right. For example, the statement of purpose of the Health Planning Act (PL 93-641) stipulates: "The achievement of equal access to health care at a reasonable cost is the priority of the federal government." [1]. Equal access is a priority and no longer a right; and even that is qualified by what can be done at "reasonable cost." Even though the determination of what is a reasonable cost will have profound influence on quality, it will be a political, not a medical, decision.

The government has moved on several fronts to control the delivery of health care. For example, appropriations to assist health maintenance organizations have been made to promote organized systems of health care. Legislation authorizing professional standards review organizations (PSROs) was passed to curb expenditures and to increase participation by physicians in utilization review activities. The Health Planning Act establishes a network of local, state, and national citizen groups to plan, coordinate, and control health care resources. The Health Professions Educational Assistance Act of 1976 controls expenditures for that most important of all health resources — trained personnel.

The ultimate aim of legislative controls on the quality of health care is greater economy through increased efficiency and effectiveness and elimination of unnecessary services, as well as a more equitable use of funds. In such manner, governmental leaders can maintain the politically acceptable stance that the money will be provided if the providers of service will only use it efficiently. The burden of responsibility is thus placed on the medical profession to hold its members accountable for their practice.

Quality assurance is described in the government's *Forward Plan for Health FY 1977-81* as "the shared responsibility of health professionals and government to provide a reasonable basis for confidence that action will be taken, both to assess whether services meet professionally recognized standards and to correct any deficiencies that may be found" [10:143]. Many doctors resent this sharing of responsibility as an infringement on professional autonomy.

While legislation has offered an opportunity through an elaborate system of PSROs for care to be reviewed by medical peers, it explicitly states that if physicians choose not to review, the government will assume

the job. Faced with such a prospect, the medical profession, rather haltingly at first, has started to adapt peer review mechanisms to satisfy mandated methods of quality review.

In an effort to be more explicit, the *Forward Plan* defines quality care as offering patients "the greatest achievable health benefit, with minimal unnecessary risk and use of resources, in a manner satisfactory to the patient" [10:142]. The four essential factors involved are effectiveness, safety, cost, and patient satisfaction. Bringing in the cost aspect bridges the gap between aspects of efficiency and quality of care.

If the quality of health care is looked at on an individual case basis, the issue of efficiency is not of major significance as long as the patient has the resources to get treatment. On the other hand, in judging the quality of our national health care system, it is clear that at the present time and probably for many years to come, available resources will not be adequate to meet all the needs. Thus a substantial portion of the population will inevitably be denied quality health care unless resources are used more efficiently. Improved efficiency could mean that many more people could receive health care, and in the aggregate there would be an improvement in the quality of services.

This same line of reasoning can be applied to a health care facility or even a specific program. Because there is always a finite limit to the resources available, the capability of providing all of the potentially desirable services is limited by cost. As a consequence, any improvements in efficiency (as long as expenditures are not cut) make it possible to do more for patients and presumably improve the quality of their treatment.

Balancing cost containment against maintaining and improving the quality of care is a new experience for most health professionals. At best they are likely to consider the concerns about cost and quality unrelated and at worst antithetical. Some doubt that a single peer review process can deal simultaneously with both issues. Nevertheless Medicare utilization review requirements, PSRO regulations, and demands of third-party payers include both expectations. Unless providers can convince payers that peer review can improve quality while at the same time eliminating expenditures for unnecessary or ineffective services, controls will be taken over by government. The physician's desire for quality must be reconciled with the public's demand for economy.

Origins of Quality Assurance

Although the escalating expenditures for health care are the present stimulus for quality assurance activities through peer review, early efforts to

provide quality controls arose quite apart from cost concerns. The first attempts to upgrade patient care were directed toward the quality and quantity of resources, especially manpower and facilities, available to provide treatment services. The Illinois Board of Health in 1877 established the first registry of medical practitioners and also maintained a registry of medical schools rated according to the quality of their curricula, thus introducing the concept that a physician's competence is related to his education.

In 1902, the American Medical Association (AMA) established a Council on Education, which later joined forces with the Carnegie Foundation to upgrade medical education. After surveying medical schools, Abraham Flexner in his 1910 report recommended the reorganization of American medical education by standardizing curricula and employing full-time faculties.

E. A. Codman proposed in 1914 that applicants to the American College of Surgeons be screened according to a type of outcome audit that assessed the result of individual practice. Such assessment included the study of hospital conditions, which Flexner had already reported as "woefully substandard." The possibility of standardizing hospitals was explored through a preliminary survey by the college, but their findings "were so shocking that the . . . survey committee ordered the individual survey reports [to be] destroyed forthwith" [12:6]. The American College of Surgeons did, however, establish in 1918 a hospital standardization program, which set standards for hospital administration, staff, facilities, and equipment, as well as encouraging hospitals to document patient care more accurately by using a uniform medical record format.

Thus a three-pronged approach to improve the quality of health care was in place: education standards for physicians, procedures for determining the outcome of practice, and standards for measuring a hospital environment. From 1928 to 1932, the Committee on Costs of Medical Care analyzed the findings of twenty-six studies dealing with the provision, organization, and financing of scientific medicine, thereby laying the analytical basis for future research into the process of care. One of the studies by Lee and Jones originated the concept of specific criteria for measuring quality care based on the premise that good care could be identified, described, and measured [26].

The dramatic expansion of health care facilities and the initiation of health care insurance after World War II increased the need to investigate and determine what constitutes necessary and appropriate care. As the hospital standardization program expanded over the years, it became a financial burden to the American College of Surgeons. The program was taken over by a combined effort of major medical and hospital associations in North America, which in 1951 formed the Joint Commission on Accreditation of Hospitals (JCAH) for the sole purpose of encouraging vol-

untary achievement of high quality standards of institutional medical care recognized by a national group. The federal government's endorsement of this accreditation activity is exemplified by the stipulation that hospitals with JCAH accreditation were automatically eligible for participation in Medicare.

The 1965 Medicare legislation mandated utilization review (UR) activities for determining the appropriateness and medical necessity of care. Although the UR procedures under Medicare and Medicaid were not new, the American Psychiatric Association recognized that mental health facilities needed assistance in developing specific administrative steps and mechanisms for documentation. To meet this need, the APA in November 1967 held a conference on the principles, objectives, and models of psychiatric inpatient UR. The report of this conference [3] dealt with special considerations for psychiatric UR, such as organization of services, psychiatric diagnoses, treatment goals, staffing, and psychiatric records. It presented four models of UR actually in use.

Following enactment of the Social Security amendments of 1972, the PSRO legislation, HEW commissioned the American Medical Association to coordinate a collaborative effort by thirty national specialty societies to generate criteria sets (guidelines) that could be used by PSROs. The criteria sets covered diagnostic categories that comprised 75 percent of hospital admissions. A common format was used by all participating specialties, including diagnosis, indications for admission, evaluative procedures, treatment modalities, and periods for review. Under the direction of the AMA's Task Force on Guidelines of Care, the project culminated in the publication of the *AMA Model Criteria Sets* in 1975. A year later, a revised edition, *Sample Criteria for Short Stay Hospital Review* [5], contained contributions from thirty-eight national specialty societies.

Recognizing the critical importance of involving the psychiatric profession in peer review through its district branches, in the early 1970s APA task forces prepared a position statement offering operational guidelines for establishing peer review mechanisms on the local level, assessed current professional and public demands for medical review, and recommended an expanded peer review program for psychiatry with a staff office within the APA. This was followed by the development and publication of the *Manual of Psychiatric Peer Review* [4] to assist in the establishment and operation of peer review committees. The manual contains suggested models for peer review, as well as a chapter on child psychiatry and peer review, prepared by the American Academy of Child Psychiatry, and a peer review manual for psychoanalysis, prepared by the American Psychoanalytic Association.

In March 1977, the National Conference on Peer Review [1] brought together third-party payer representatives, consumers, technical experts, and psychiatric leaders to refine further and develop the APA peer review

system. The theme of the 1977 APA annual meeting was "Professional Responsibility and the Public Trust," highlighting the vast array of peer review activities that have been implemented nationwide.

ACCOUNTABILITY TO WHOM?

Voluntary Accrediting Bodies

The APA in 1948 developed standards and established the Central Inspection Board to inspect hospitals [2], but as time passed, these activities overlapped Joint Commission on Accreditation of Hospitals efforts. Until the early 1970s, however, the JCAH utilized a single set of standards to survey both general and psychiatric hospitals. As a consequence, the APA, along with several other organizations dedicated to improving the quality of patient care, joined with the JCAH in a collaborative effort to address the specific needs of psychiatric facilities.

In 1970, the Accreditation Council for Psychiatric Facilities (AC/PF) was formed as a categorical council of the JCAH to promote and identify quality programs and services in psychiatric facilities. Their voluntary program of accreditation is described in the AC/PF accreditation manual of 1972. Although the choice to seek JCAH accreditation is a voluntary decision made by the psychiatric facility, the failure to obtain it not only reflects on the prestige of the facility but may mean a substantial loss of funds from governmental and private sources and may jeopardize other certifications, licensure, and the ability to obtain insurance. Thus psychiatric facilities are in fact accountable to the JCAH in accordance with the standards of the AC/PF voluntary accreditation program.

Quality assurance is addressed throughout the 1976 *Accreditation Manual for Hospitals*. The first standard deals with quality of professional services. It stipulates: "The hospital shall demonstrate that the quality of care provided to all patients is consistently optimal by continuously evaluating it through reliable and valid measures. Where the quality of patient care is shown to be less than optimal, improvement in quality shall be demonstrated. [21:27]. The written interpretation in the manual makes it clear that this standard is to be met by a peer review process:

The quality of patient care shall be evaluated by members of the medical and other professional staffs directly responsible for patient care. Evidence of the quality of patient care provided in the hospital shall be demonstrated by measurement of actual care against specific criteria. These criteria must be established or adapted by the medical staff for evaluation of all physician-directed care, and by nonphysician health care professionals for evaluation of those aspects of patient care that they provide. Criteria must be explicit

and measurable, and must reflect the optimal level of care that can be achieved through current medical and related health-science knowledge [21:27].

These requirements are amplified in standard III of the section on medical staff: "The medical staff organization shall strive to create and maintain an optimal level of professional performance of its members through the appointment procedure, the delineation of medical staff privileges, and the continual review and evaluation of each member's clinical activities" [21:108]. In meeting this standard the medical staff is expected to rely on medical care evaluation (peer review) "to ensure clinical practice of the highest quality." Through peer review the staff must assure that every staff member

Provide his patients with the best possible quality of care; conduct his professional activities according to the bylaws, rules and regulations of the medical staff and of the facility; and assist in the promotion and maintenance of high quality care, through the analysis, review and evaluation of the clinical practice that exists within the facility. [21:109-110].

The 1972 AC/PF accreditation manual without directly addressing the cost of care does so implicitly in the requirement for patient care evaluation and utilization review at least monthly for the staff to "evaluate the appropriateness of admissions to the facility, lengths of stay, discharge practices, use of medical and facility services and all factors that may contribute to the effective utilization of facility and physician services" [19:37]. The impact of underutilization and overutilization of services on the quality of patient care is studied by concentrating on patterns of care using criteria relating to average or normal lengths of stay by specific disease categories.

To assist psychiatric facilities, the Joint Commission's Quality Review Center has developed a primer describing the applications to psychiatric care of their performance evaluation procedure (PEP) for auditing and improving patient care through medical care evaluation (MCE) studies. This builds on a multitude of previous efforts: *Trustee-Administrator — Physician Institute (TAP) Manual* (1972), *Quality Assurance Program Manual for Hospitals* (AHA, 1973), and *Nursing Adaptations of the Audit Procedure* (1973 and 1974).

Currently psychiatric facilities are not required to complete the same number of MCE studies per year as general hospitals. As of July 1977, however, all were required to have at least two MCEs ongoing at the time of survey.

Although the PEP is designed to improve patient care through continued professional self-evaluation and self-development, John D. Porterfield, director of JCAH, acknowledges the dual concern of cost and quality:

“For an accumulation of reasons, the recipient of health services has almost an exaggerated interest in the quality of those services. If someone else is paying the bill for him — most prominently today the government — the interest is even keener” [20:1].

Government Regulation

When governmental financing through Medicare and Medicaid enabled millions to receive needed health care, it brought about drastic changes in the medical system. Seeing the consequences of unpredicted rises in health costs, the federal government opted to control the medical system through the monitoring of many aspects of the health care system formerly considered the physicians' prerogative.

The Medicare legislation, according to William McKillop, “began the process of politicization as far as health care of the American public was concerned” by “the vesting of crucial policy making decisions in hands other than those of the health professionals.” McKillop observes, “There is no more effective way to politicize a human activity than to finance it with government money [28:21].

The initial Medicare legislation of 1965 sought to control the use of services by mandating a utilization review plan through which hospitals would eliminate unnecessary care. Regulations required hospitals to review a sample of Medicare admissions and continued stays to determine the medical necessity of the services and to promote the most efficient use of resources.

Dissatisfied by the degree to which utilization review requirements limited federal spending, Congress in 1972 amended the Social Security Act (PL 92-603) to establish PSROs designed as “a major new experiment to establish an operational quality assurance system nationwide [10:146]. This PSRO legislation is based on the premise that physicians are the appropriate parties to evaluate the quality of medical care and that review on the local level is the most accurate way to assess appropriate use of health resources.

Physician organizations or groups are not required to assume the responsibility for organizing PSROs, but if they decline, the secretary of HEW may approve review by any medical organization, state or local health department, or medical school. If none of these groups seeks responsibility, nonphysician intermediaries or other health insurers can be designated to do review. Control over medical matters would then pass from physicians to HEW.

The deadline for establishing PSROs throughout the country was extended from January 1976 to January 1978. As of January 1978, out of some

200 designated PSRO areas, 120 PSROs have been conditionally approved, 62 are in the planning stage, and 13 areas having no PSRO will have some other medical group or organization appointed by HEW. Reviews have begun in short-stay general hospitals and will expand into long-term care facilities, specialty facilities such as psychiatric hospitals, and ambulatory care.

A report by the Office of Planning Evaluation and Legislation indicated in October 1977 that of the conditionally approved PSROs, 87 percent of the hospitals were under review, 30 percent of the discharged federally funded patients were reviewed, and 56 percent of locally practicing physicians were members of the PSRO. It is estimated that by the end of 1978, 240,000 physicians will be members of PSROs, 6,000 hospitals will be covered, and 8.6 million discharged cases will be reviewed [13].

The motivation for physician participation in PSROs have been twofold: the desire as a professional to serve mankind better and self-interest. The Central Maryland PSRO stressed service to mankind in seeking a tax-exempt status under section 1.501(c) (3) of the Income Tax Regulations, but the IRS held:

By cooperating to achieve the purposes of the statute and taking self-regulation upon themselves, the doctors who make up your organization are preventing regulation from the outside. Although your activities may be of significant benefit to the public, it is apparent that you have a purpose of protecting members of the medical profession. Thus, one substantial purpose of your organization is to serve the common business interest of the members of the medical profession.

We, therefore, conclude that you are not organized and operated exclusively for charitable purposes as required by section 501(c) (3) of the Code.

Accordingly, it is held that you are not entitled to recognition of exemption from federal income tax under section 501(c) (3) of the Code.

Even while PSRO legislation was being implemented, HEW in November 1974 issued new utilization review requirements practically identical to the PSRO mandate. The regulations required that all admissions be reviewed within one working day following admission, (this section was deleted in September 1975 as a result of AMA lawsuits) and that extended stay reviews and medical care evaluation studies be conducted. Some saw this as fulfilling the prediction that PSROs would never come into existence and that another review system under government control was necessary. HEW explained that utilization review regulations would be superseded by PSRO activity on a hospital-by-hospital basis as PSROs began review activities.

Another significant legislative attempt to fix accountability is the National Health Planning and Resources Development Act of 1974 (PL 93-641) establishing organizational entities at local, state, and national levels

to govern the planning, development, and allocation of all health resources. The act is intended to achieve a more rational system with more effective, efficient, and equitable utilization of scarce health resources, thereby improving the quality of care. Emphasis on the decision-making process is shifted from the federal to the state level, while control over priorities, objectives, and standard setting is maintained by the federal government. Approximately two hundred local health systems agencies (HSAs) are the basic building blocks of the planning system.

Although PSROs and HSAs have well-defined and distinct functions, certain linkages are necessary to ensure coordination of their activities when common issues are addressed. To this end, a joint policy statement on PSRO/HSA relationships was issued in December 1977 by the heads of the Health Standards and Quality Bureau and the Bureau of Health Planning and Resources Development [17].

Federal legislative initiatives are usually aimed at organizational and policy issues, but state laws often become specific about patient care issues. For example, Maryland in 1975 issued regulations specifying minimal standards for care of the mentally ill. The individualized treatment plan requirement was introduced out of a concern that physicians were not adequately assessing and planning for the care of patients in state hospitals. It requires the treatment team to identify patients' needs and plan how they can be met as effectively as possible.

Politicization of health care is now a fact of life. Just how far this process will go depends somewhat on the willingness of physicians to become involved at various levels of decision making and participate in organizational systems that can preserve their autonomy. While legislation allows physician implementation of quality assurance systems, bureaucrats are waiting in the wings for doctors to pass up this and any other opportunity to control health care. The urgency for physician cooperation in such activities was stated unequivocally at the annual meeting of the American Psychiatric Association 1976 by Stephen Kurzman, HEW's secretary for legislation. He pointed out that the goal of ensuring quality patient care was delegated to physicians because of "the awareness that peer review as carried out in the nation's hospitals is potentially one of the most constructive, beneficial and necessary elements of the health system." Kurzman warned, however, "Put your own house in order or we have no other choice than to do it for you" [23:6].

Influence of Insurance

Accelerating costs have led private insurers to institute measures such as limitation of benefits by diagnosis and intensive review of individual

claims. Such measures have far-reaching implications for the entire health care system and can affect the quality and types of treatment offered. For example, if certain services or facilities are not reimbursed by insurance companies, they may be forced out of operation for financial reasons. Major insurers, now covering 26.5 percent of the costs of personal health care [9:14], may have still greater impact if their techniques are used in a national health insurance program. Thus the quality of all health care could eventually be controlled by today's decisions of the insurance industry.

An excellent illustration of the impact of decisions by insurers occurred in the Federal Employees Program (FEP) Blue Cross plan, which had long been heralded as a model of equal coverage for physical and mental illness (inpatient psychiatric hospitalization when medically necessary was covered 365 days a year, and there was a corresponding liberal outpatient benefit). Coinciding with the prediction in 1972 that the FEP Blue Cross plan could in a single year lose some \$60 million, retroactive denials for psychiatric care occurred at an alarming rate.

Throughout the country various providers attempted to negotiate but had little success because they had limited knowledge of the guidelines being used to determine what services would be denied.

Regarding psychiatric services, eventually it was learned that Blue Cross reviewers were using guidelines prepared by a psychiatric consultant to the FEP in northern California, which displayed a grossly archaic concept of treatment [24]. For example, the consultant advised that major modalities favored for reimbursement should be psychosurgery, insulin therapy, convulsive therapy, and major drug therapy. Approaches other than these somatic treatments were classified as adjunctive, including individual psychotherapy, group therapy, and minor drug therapy. The use of these guidelines by claims reviewers meant that current modes of treatment acceptable to the psychiatric profession were excluded as not meeting standards for quality and medical necessity.

Eventually Blue Cross officials were receptive to overtures by the American Psychiatric Association to establish liaison and agreed to a joint effort to revise the claims review guidelines. A joint task force of Blue Cross and the APA prepared new guidelines for claims review consistent with current psychiatric treatment, and a procedure modeled after the recommendations of the *APA Manual of Psychiatric Peer Review* [4] utilizing peer review committees of experienced psychiatrists.

The federal employees Aetna plan, under financial stress in 1974, limited outpatient psychiatric visits to twenty if delivered by a private practitioner and forty if provided by an organized health care facility. Again in 1978 dollar limits were imposed on the psychiatric benefit: \$20,000 annually for inpatient and \$1,000 for outpatient claims. In addition

to the financial limitations, the Aetna Company also implemented a claims review system.

The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), although part of the Department of Defense, has much the same influence as a private insurance carrier. In 1974, when congressional investigations revealed not only cost overruns, but widespread abuses in CHAMPUS-supported care in residential treatment programs for children, the initial response was to cut the previously open-minded mental health benefit to 120 inpatient days and 40 outpatient visits annually.

An intensive effort by the APA and other organizations effected a reversal of the decision by the CHAMPUS program to impose arbitrary limits for inpatient and outpatient care, in favor of a review process. Under contract with National Institute of Mental Health (NIMH), the Select Committee on Psychiatric Care and Evaluation (SCOPCE) developed a model pilot program of peer review to assure that appropriate care was being provided for children and adolescents in residential treatment centers. A cost analysis found that \$5 million was saved by the SCOPCE review system, at a cost of only \$100,000 [33:62]. A large portion of this resulted from the elimination of payments to substandard facilities.

The SCOPCE success led CHAMPUS to contract with the APA to design and implement an extensive peer review system to determine appropriateness of inpatient and outpatient psychiatric treatment. The system calls for three levels of review: clerical identification of eligibility; a second-level screening by nonphysician reviewers using professionally developed criteria; and finally a three-member team of psychiatrists to judge cases varying from the established guidelines.

A national advisory panel of psychiatrists will act as advisers to CHAMPUS to oversee implementation of the reviewer system and maintain up-to-date guidelines. The APA has identified psychiatrists across the country to serve as third-level peer reviewers and has oriented them to the process. The APA will coordinate the contract, setting up relationships between CHAMPUS claims processors and peer review committees and will also train second-level reviewers.

This contract represents a policy decision by CHAMPUS that involving the profession in the review of psychiatric claims is desirable. It offers an opportunity to test and refine a methodology for peer review based on field experience. It is a challenge to meet the public expectations for accountability by a peer review system with professionally determined standards for care that are used to control costs with minimal sacrifice of quality.

Insurers are accountable for the premiums of subscribers in the case of private insurance, tax dollars in the case of government programs, and fringe benefits in the case of an employer or a union. As a consequence they are obligated to monitor medical care and have final responsibility for

making determinations about payment. Nevertheless decisions about medical care should be based on standards and criteria reflecting the opinion of the medical profession rather than an arbitrary limit set for fiscal control.

Consumer Protection

The public is now turning to the courts for answers to many questions about psychiatric care, such as voluntary and involuntary admissions, civil rights, restraints, shock therapy, the right to treatment, the right to refuse treatment, periodic review of confinement, confidentiality, sterilization, payment for work, psychosurgery, and legal competence. Psychiatrists and other providers are suspected of acting out of self-interest with little regard for the patient. For example, the American Civil Liberties Union, in a handbook by Bruce Ennis and Loren Siegel on the rights of patients, opens the discussion of the legal rights of those hospitalized for mental illnesses in this way: "Warning. There is an enormous difference between the rights mental patients have in theory and the rights they have in practice. Doctors, hospital officials, and even judges frequently pay no attention to patients' 'rights,' preferring, instead, to do what they believe to be in the patients' 'best interest' " [15:11].

Recent legal decisions, legislative actions, and social political review have had an increasing influence — sometimes good, sometimes bad — on the practice of psychiatry and the provision of mental health care in this country. In *Wyatt v. Stickney* the court set forth the concept that civilly committed patients have a constitutionally guaranteed right to treatment and that states cannot use the concept of states' rights to deprive these patients of the right to treatment. The decision ratified the rights of courts to establish minimal standards of care, which were elaborated in great detail by the judge. In *O'Connor v. Donaldson*, the Supreme Court decided that "mental illness" alone cannot justify custodial confinement of a nondangerous person who is capable of surviving safely in freedom by himself or with the help of willing and responsible family members or friends.

Both decisions were the result of well-intentioned efforts to protect the rights of patients and, particularly in *Wyatt*, to improve the quality of care. Judges and lawyers, however, do not have the training and clinical experience to set standards and criteria for psychiatric treatment. They often fail to recognize that procedures designed to provide due process may act as a deterrent to prompt therapeutic intervention and that inflexible judicial decisions can prevent the individualized approach needed in psychiatric treatment.

Other organizations and groups representing consumers have become increasingly strident in their demands for accountability. The *Madness Establishment*, Ralph Nader's Study Group report on the National Institute of Mental Health, written by Franklin D. Chu and Sharland Trotter, criticized the NIMH. They charged that the community mental health centers program was vastly oversold and "as they are currently structured will never supplant state hospitals, much less cater to the mental health needs of all citizens" [8:204].

Highly critical of the role of psychiatry in labeling problems of living "mental illness," Chu and Trotter recommend placing "the great majority of so-called mental health problems outside the realm of medical responsibility." They want to phase out rigid professional categories, substituting "generalists and technicians who can collaborate in providing humane care to the people who most need it." Focusing on the need for psychiatrists to treat the population most in need, they charge that "although psychiatry has always been confronted with the problems of chronic illness, it (along with most of the rest of American medicine) has persisted in thinking primarily in terms of 'cure.' And those who psychiatry has been unable to cure, it has preferred to ignore. The quixotic pursuit of ever more esoteric treatments and potential cures has completely overshadowed the development of skills to aid people with chronic disorders or diseases" [8:207].

The Mental Health Association (MHA) (formerly the National Association for Mental Health) has been a strong advocate of better care for the mentally ill. While supportive of quality assurance through peer review, the MHA asserts that there should be greater consumer participation. In a position statement on national health insurance, they recommend the establishment of: independent mental health utilization review panels (IMHURP) of not fewer than seven persons to serve specific geographic areas, comprised of at least three disciplines of the mental health profession, and also including paraprofessionals and informed laypersons. They want all services to be subject to the IMHURP's utilization review process:

- A To determine the nature, necessity and frequency of continued treatment.
- B To safeguard the rights of clients receiving treatment, including the rights of confidentiality.
- C To assure quality care of the most effective and appropriate kind.
- D To assure adherence to Individual Patient Service Plans [31:6-7].

At the APA Conference on Peer Review in March 1977 [1], consumer representatives expressed concern that quality and cost are inevitably in conflict, making it difficult for a peer review committee to judge such divergent perspectives. While acknowledging the importance of professional judgments, they still urged consumer representation at all levels of

peer review. They would like to be involved so they can use the findings of peer review in their efforts to promote better health benefits for the mentally ill.

Still a further indication of the move toward greater consumer involvement is reflected by the appointment of a strong majority of consumers to the President's Commission on Mental Health. Task panels appointed by the commission to advise on quality issues — including assessment of community mental health centers, as well as planning and review mechanisms — also have strong representation by consumers. Undoubtedly the commission's final report submitted to the president will be strongly influenced by the views of consumers.

Many professionals feel threatened and alarmed by the increased influence of consumer representatives. Nevertheless there is a strong move in this direction in virtually all activities affecting our society, and rightly so, because the ultimate accountability in a democracy is to the people.

QUALITY ASSURANCE AND PEER REVIEW

State of the Art

Quality assurance is a process whereby the quality of patient care is assessed and action is taken to improve the standard of performance in order to ensure the highest standards of health care delivery. Quality review is the study and elaboration of the structure, process, and outcome of psychiatric treatment using agreed upon criteria. It relies on peer review, which is a broad term signifying the review by physicians of medical care, medical education, and medical investigation. In the present narrower context, peer review includes "utilization review, quality review, continuing education, advocacy for improved care with intermediaries, and cost control" [4:4].

Quality assessment and peer review can be viewed from many perspectives, including (1) structure, process, and outcome of care; (2) availability, acceptability, comprehensiveness, and continuity of care; (3) consistently optimal quality; (4) essential elements of care; (5) physicians' utilization of information in the treatment of their patients; (6) discovery of and remedial action for problems in medical care services; (7) concentration upon problem areas of inefficient or ineffective use of resources and improper intervention; and (8) defining patient care in operational terms and assessing the relationship between word and deed [36:2]. According to Richman, "Quality review is seen as a fulcrum for improving clinical care [through] correcting, minimizing or preventing dysfunction in patient management" [36:3]. There will never be one answer to what constitutes quality care or even to assessing it, but the consistent theme in all

these concepts is that there is a standard of quality that should be specified and pursued.

Measuring the quality of care is most often accomplished along three axes: structure, process, and outcome.

- 1 The structural approach studies the quality and quantity of resources — facilities, manpower, and organization — that are available to provide medical care. Such structural attributes of medical care systems have an impact on the process and/or the outcome of medical care. Systems that emphasize improvement of structure have usually dealt with such issues as licensing and accreditation but failed to provide ongoing measurement and upgrading of performance. The JCAH Accreditation Program Standards and Conditions of Participation for the Medicare program are structurally oriented.
- 2 The process approach compares the type of service provided for a particular type of patient to criteria for acceptable treatment. It relies on scientific evidence and/or expert opinion suggesting that certain procedures in medical care practice lead to desirable outcomes. Traditional process standards are sometimes explicit, such as medical staff rules, departmental protocols, and nursing procedures for assuring conformance to stated requirements for good care. Often the standards are implicit, as in many one-to-one chart review activities. The empiric evidence that correlates specific processes with desirable outcomes is seldom present, however.
- 3 The outcome approach assesses the appropriateness of health care based on the condition of the patient at the conclusion of an episode of care. Measurable intermediate outcomes during hospitalization include a) whether the patient's health status at discharge was within the range of acceptable results that were predicted; b) whether avoidable complications arose and, if so, whether these were caused by failure to take known prophylactic measures; c) whether unavoidable complications were recognized and appropriately managed; and d) whether the length of hospital stay, need for hospitalization, and level of care were required. The economic benefits resulting from health care can be considered an aspect of outcome. Outcome alone is not a valid indicator of quality care, however, since a good outcome can occur even when the process has been far from adequate.

Quality review is often misconstrued as the goal of a quality assurance system. The true purpose of quality assurance is improvement in the

quality of care: quality review is the means to that end. A quality assurance system is not merely the comparison of what exists to what should exist, but rather a continuing search for opportunities to improve care through a constantly expanding evaluation process. Many evaluation projects in the past were promoted on the assumption that corrective action would follow when, in fact, this was seldom the case. Current quality assurance activities required by the government stipulate that action must be taken to correct problems that are uncovered.

For a system to function there must be criteria against which actual care and data describing patient care can be compared. The criteria delineating standards of care may be implicit or explicit. Implicit criteria are used when clinicians or committees review documentation and come to a judgment about patient care based on clinical experiences; explicit criteria are predetermined elements against which aspects of the quality of a medical service may be compared. Explicit criteria are essential to current quality review systems, not as the focus of a final judgment in relation to patient care, but rather as a screening mechanism to be used by nonphysician personnel. Criteria specify indications for admissions, the appropriate nature of preadmission workup, the types of services that should be provided, indications for discharge, and critical indicated and contraindicated diagnostic and therapeutic services. When a case does not pass the screening mechanism, it proceeds to peer review.

The three major components of the PSRO quality assurance system are utilization review (concurrent admission certification and continued stay review), medical care evaluation studies, and analysis of hospital, practitioner, and patient profiles. A review of short-stay hospital care illustrates these components.

The first element, utilization review (UR), is a process for ensuring that care provided is medically necessary, delivered economically, and in conformity with standards of high quality care. UR is a concurrent review which determines the necessity of hospital admissions, the appropriateness of hospital stays, and the effectiveness of discharge planning. Admission certification, performed shortly after a patient is admitted, assesses the medical necessity for admission. When the admission is found medically necessary, an initial certified period is assigned according to length of stay norms (statistically determined as the usual hospital stay in that region). Continued stay review assesses the medical necessity for continued inpatient care and may include a detailed assessment of the quality of care provided. When continued stay is justified, another length of stay is assigned, and review must occur before this date.

The first stage of review is a chart review performed concurrently by a review coordinator. The review coordinator, often a nurse, may only make determinations to continue hospitalization. When admission or

continued stay is questioned, the case goes to the next level of review by physicians. If after consultation with the attending physician, hospitalization is still not found medically necessary, the attending physician may appeal for review by another physician. If this second physician finds the care unnecessary, federal financing will no longer be available for that particular patient. This is not to say that the patient cannot remain hospitalized, however.

Medical care evaluation studies (called *medical audits*), the second elements, are a retrospective in depth assessment of the quality of care or the utilization of services. These studies do not focus on individual patients or practitioners but look at them as part of a sample to assess patterns of care. Medical audits may focus on problem areas perceived by the hospital. The pattern of care received by patients is compared against standards established by a hospital staff.

Medical audit usually consists of a series of studies of specific aspects of medical care, often the care of patients with a selected diagnosis. Steps include (1) selection of an important topic for study; (2) establishment of criteria; (3) case selection and description of actual practice; (4) evaluation of the practice level in the institution; (5) corrective action, if necessary; (6) reassessment; and (7) documentation and reporting of the results of the audit.

Audits emphasize the outcome of care to determine why the appropriate results of intervention were not achieved. When a particular ward or group of doctors is shown to be operating outside of the usual practice, an effort is made to determine the reasons for their activity. If findings indicate a lack of proper facilities, manpower, or knowledge of the problems being studied, administrative changes or continuing education are to be carried out, and the problem reaudited.

The third element, profile analysis, is the analysis of aggregate patient care data for patterns of care and lengths of stay. It is another retrospective look at patient care to identify problems, to compare facilities and practitioners, and to provide information on the effectiveness of PSRO review.

The term *quality assurance* has been used in a manner that encompasses myriad review activities. There are significant differences, however, among peer review, PSRO, and claims review. While the PSRO approach is often called a peer review process, it is not a traditional physician review of medical care. The PSRO system utilizes review by peers but is subject to the constraints of methodologies imposed by the federal government and the use of explicit criteria as a first screening by nonphysicians. Peer review, on the other hand, while not regulated by the government, has similarly expanded to include many utilization review and quality review activities that involve more than purely medical issues. Dr.

Allan Levy, speaking about this expanded role, expressed that "one of the concerns about peer review, especially if it is focused on fiscal control, is that it will become merely a hatchet device for the bureaucracy" [27:236].

Claims review is utilized to determine eligibility for payment of an insurance claim. It includes a first-level clerical review to determine basic questions of eligibility. A second-level review accomplished by nonphysician reviewers often deals with quality issues such as whether the treatment is active or custodial, whether improvement is likely, and whether the treatment being given is appropriate. The third level, review by physicians, may be the locus of final decisions about denials, but often such decisions are made at the second level. The standards and criteria used for claims review are developed by the insurers, and while they may be generated by psychiatric consultants, they do not necessarily represent the opinion of professional leaders in the field. If PSROs prove they can control federal spending, insurance companies may employ them to do claims review. Such a system of review by peers would be more acceptable to the providers of care.

Effectiveness of Quality Assurance Programs

Judging the effectiveness of quality assurance programs is extremely difficult. Consensus of what constitutes quality psychiatric treatment is lacking. Considerations of quality and cost are inextricably related. Delivery systems and patterns of psychiatric care are changing significantly. Multiple forces, both external (government regulation, reimbursement, changing standards) and internal (changing technology, hospital occupancy rates, new professional and paraprofessional providers), impact simultaneously with quality assurance efforts. Furthermore systematic application of quality assurance is relatively new.

Studies to date have yielded conflicting findings. An evaluation of the pre-discharge utilization review program sponsored by Blue Cross of Western Pennsylvania found no differences in average length of stay of Medicaid patients that could be attributed to the review program, with the exception of maternity cases [32:73]. Bonner's evaluation of the Utah professional review organization concurrent review program found no statistically significant evidence of positive impact from concurrent review in terms of reduced average length of stay, admission rates, or days of care per eligible [32:72]. Many believe that utilization review is the least effective of cost containment mechanisms but others disagree. Aggregate data from several programs, including the Experimental Medical Care Review Organization, the New Jersey Approval by Diagnosis Program, the Certified Hospital Admission Program, and others, indicated a reduction in

length of stay ranging from 6.4 percent to 22 percent [6:58]. Such figures should be viewed as indicators of direction rather than an accurate measure of impact.

The Sacramento certified hospital admission program between 1970 and 1973 decreased hospital days of its Medicare patients compared to patients in neighboring areas. The Colorado Foundation for Medical Care Program saved the state \$7.5 million in Medicare and Medicaid dollars during 1974. New Mexico's Experimental Review Program saved \$6.7 million between 1971 and 1973, but 87 percent of this was due to improved accounting practices, not physician review activities. Such studies reveal cost savings, but the question of why the review programs worked is a crucial issue needing clarification [22:8].

HEW recently studied eighteen of the most active PSROs and concluded that the organizations are not functioning as effective cost containment mechanisms, even though in a few cases the PSROs are helpful in cutting admissions and lengths of stay. The cost of PSRO review has been about \$15 per patient per year, however, and when hospitals review themselves, the costs are even higher, \$18. It is possible that PSROs are upgrading quality but not curbing expenses. While no final conclusions are possible, the impression gleaned from this thirteen-volume study from the Office of Planning and Evaluation is that continued operation of PSROs alone will neither cause significant changes in hospital utilization rates by federally funded patients nor associated government expenditures [30:15,16].

Skepticism was also expressed in an October 1976 report commissioned by the Department of Health, Education and Welfare, which estimated utilization controls would reduce the cost of additional services under the American Medical Association's national health insurance proposal by only \$.3 billion (less than 0.2 percent) and under the Health Security Bill by only \$1.4 billion (only 0.7 percent) [11]. Since regulations requiring review add indirectly to the cost of care through special reports, legal services, requirements for documentation, and the like, these activities might possibly add as much as 5 percent to the overall health care budget. It may have been data such as these that led the Office of Management and Budget to conclude in December 1977 that PSROs were not effective and to recommend funding be discontinued. The secretary of HEW appealed this finding and funding was restored, but the possibility remains that the program will be dissolved if it fails to reduce costs.

The Institute of Medicine made a preliminary assessment of current quality assurance programs in 1976. Although improvements in quality have been recorded, the institute is uncertain how the improvements were related to overall quality assurance activities and whether the expenditure of resources was justified. The study arrived at three main conclusions: (1) it is impossible to conclude that MCEs produce the benefits

acclaimed for such a methodology, since there is a lack of reliable data on the numbers, topics, and associated costs of currently performed MCEs, the identified deficiencies in patient care, the remedial action taken, and the extent and duration of improvement in patient care; (2) from available information there is no convincing demonstration of the cost-effectiveness of the hospital concurrent review program; (3) ambulatory claims review programs brought dollar reductions in claims which considerably exceeded the cost of review, and some improvements in quality have been noted [32:5].

Most of the studies cited have dealt primarily with cost, which turns out to be more difficult to measure than previously thought. A single system designed to cut costs, defend professional prerogatives, protect the consumer, and improve the quality of care may have an impossible task. It is hard to disagree with McNerney's assertion that "quality assurance suffers from conflicting and overlapping interests of government, providers, professionals, carriers, accreditation agencies, and consumers" [29:1508].

FUTURE DIRECTIONS

Reacting to governmental requirements for review of medical care, physicians' comments have ranged from diatribes to energetic support. All proposals for national health insurance, even that sponsored by the AMA, mandate quality review. Like it or not, physicians will be required to submit their practice to external scrutiny or limit their treatment to patients without third-party financial assistance. Calling for the cooperation of his colleagues in psychiatry, Dr. Frank Sullivan warns, "The time has arrived when we must share with a colleague what we are doing behind the closed door of psychotherapy. If we refuse to heed society's call, medical decisions will continue to drift into the hands of the government" [37:1357].

While emotional reactions to the notion of quality review vary, actual measurement of staff attitudes at the Rockland County Community Mental Health Center revealed that the perceived need for review varied inversely with the years of experience. Sixty-five percent of the respondents with less than one year of experience saw a need for review compared with 42 percent who had two or three years of experience. While 85 percent of the mental health workers found review helpful, only 37 percent of the psychologists and psychiatrists concurred [7]. This suggests that the more experienced professionals see themselves as more competent with less need for review of their services. Those who are less experienced may, in fact, benefit from review as a learning process.

Physicians are legitimately concerned that the federal government's emphasis on service efficiency and effectiveness will generate changes in traditional modes of treatment. Noting the lack of data on the effectiveness

of psychiatric treatments, Dr. Scott Nelson, formerly of the Alcohol, Drug Abuse and Mental Health Administration, points out that longer-term treatment will be more difficult to justify than shorter treatment that produces quicker results. He emphasized that outcome studies and controlled clinical trials are needed to justify longer, more comprehensive treatment but concludes, "Some change in the nature of psychiatric practice seems to me to be most likely" [38:68].

Short of direct influence on practice, the government already uses sanctions to influence the delivery of health services. To promote licensure of professionals, it limits payments to health professionals who are either licensed by state boards or certified by professional organizations. Many states already require continued standards of competency for health professionals, and more will follow. In 1973, the American Board of Medical Specialties advocated voluntary periodic certification of medical specialists. All twenty-two of the specialty boards, including the American Board of Psychiatry and Neurology, have supported that policy and are currently in various stages of implementing it. Findings from peer review and PSRO review systems may be used to measure continued competence.

Some physicians remain unconvinced that cost control is compatible with quality improvement. They believe that there is an inherent opposition in the dual function of PSRO activities controlling costs and improving the quality of care. The conflict between cost and quality is especially apparent when the UR process leads to a patient's discharge from the hospital. Outpatient coverage, particularly for psychiatric problems, is often inadequate, but in the PSRO system, there is minimal consideration of the availability or accessibility of alternative treatment needed by a patient who is denied hospital coverage. UR must be sufficiently comprehensive to consider the total care needs of the individual patient.

An argument has been made that PSROs will reduce the quality of care if criteria are used to standardize procedures and ultimately inhibit flexibility and progress. Should health professionals see criteria as the only acceptable standard for care, with deviance from these criteria possibly eliciting punitive action, clinicians could conceivably begin to present their cases to peer review and document their care in a defensive and even distorted manner to comply with the system.

Steps must be taken to ensure that standards are not misinterpreted to be regulations requiring compliance. Actually explicit criteria, agreed upon as the usual practice for treating a particular illness, are used only as a screening device to identify cases for peer review that deviate from the usual practice. Clinicians need only explain an unusual course of treatment to peers. Medical practice will surely suffer if psychiatrists conduct the treatment of every patient within statistically determined norms.

Rigid standards imposed by private insurers without benefit of peer review already influence providers of service. The use of standards for

claims review has resulted in the denial of payment for hundreds or even thousands of cases of psychiatric treatment. If this continued, it could have a disastrous effect on the future of psychiatry. The use of such criteria in a system involving national health insurance has been called "a monstrous application of the behavior modification technique [which] does not use tokens to influence behavior — it uses dollars that influence people's lives" [16:7].

Dr. Richard Dorsey, the APA's peer review consultant, takes the more positive view that utilization review methods hold potential for increasing the precision of standards for diagnosis and treatment in psychiatry. Noting the difference between "clinical" and "statistical" approaches to decision making, he illustrates how individual clinical judgments employ memory, personal experience, and a subjective weighing of evidence in an unreliable manner, relatively unrelated to available information. He is confident that a statistical method employing analysis of many cases and application in a consistent manner promises improved clinical practice in psychiatry [14:74].

One of the most important functions of the PSRO system, according to HEW, is to discover problems and to stimulate the development of corrective programs. "The PSRO will serve as a catalyst for producing change in the delivery of health services" [18:668]. PRSO-generated information can be used effectively in a variety of ways. Quality review stressing process and outcome could provide valuable information about the effectiveness of various processes which accomplish the goals of treatment by generating a more objective scrutiny by clinicians. Reasonable goals of treatment need to be identified. Techniques that work should achieve greater emphasis than long-accepted techniques which may not in fact be best for the patient. Ideally review will stimulate increased physician interest in learning new techniques and keeping abreast with current theories and research in the field.

PSRO findings can focus upon the precise point at which the health care system is faulty by identifying underserved areas. Systematic studies which analyze data, provide for corrective actions, and follow up on results can be a major means of improving the quality of patient care. On a broader scale, review findings could furnish information for research and planning efforts. UR could address questions related to accessibility and public accountability. For example, corrective action for inappropriate admissions could lead to an expansion of outpatient services. As it reduces length of stays, a hospital might offer services to a larger number of patients and thereby become more responsive to the community.

Utilization review data on mental health care can be a valuable resource in the battle against discriminatory limitations on mental health coverage by third-party payers. Numerous studies on cost and utilization have been conducted through recent years, most impressively by Dr.

Louis Reed [35], but such data alone are not sufficient to secure the inclusion of mental health benefits. In a 1975 speech, Dr. Robert Laur of the Blue Cross Federal Employees Program stressed the need for "credible, reliable and uniform utilization review processes." Recognizing the lack of such processes, he went on to say, "I believe their absence constitutes the single most important barrier to the extension of mental health coverage by third party payers" [33:59].

Psychiatric practice is going to be reviewed; the only question is, by whom. Using the new demands for accountability, the cost conscious may exercise a decisive influence on the care of the mentally ill. This is a serious threat. The real danger, however, is that the professions may simply resist rather than becoming earnestly involved. Peer review offers the best opportunity for a constructive response to the public's legitimate expectations.

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Emotional Problems of the Physician and Medical Student

Thurman Mott, Jr., M.D.

Physicians suffer from the same anxieties, fears, depression, and life stresses as do their patients. But certain types of problems are reported to be more common in physicians, such as drug addiction, suicide, and marital discord. These may be related to some of the special stresses and common pitfalls peculiar to the practice of medicine. Psychiatric illness in the physician may interfere with his ability to care adequately for his patients. In this situation, his illness becomes not only the concern of him and his immediate family but a problem for the medical profession and its regulatory agencies.

A number of factors tend to delay the institution of treatment for physicians regardless of the nature (psychiatric or nonpsychiatric) of the illness. Physicians are expected by their patients, and often by themselves, never to be sick in any way. If they do become ill, they are expected to be able to diagnose and treat their illness without consultation, or at most a fleeting "corridor consult." They are never to display any need for support or show that they have feelings. This Godlike image fostered by patients to help them be more secure in their dependence on the physician

may also become a significant defense against the physician's feelings of inadequacy and make it difficult for him to accept help. The old adage, "Physician, heal thyself" may be less appropriate than "the physician who treats himself has a fool for a patient."

PREVALENCE AND TYPES OF PROBLEMS

The incidence of psychiatric illness in physicians is unknown but is probably essentially the same as for a comparable nonphysician population. The reported studies vary considerably in their estimates of the prevalence of specific problems such as suicide and marital problems, but all agree that drug addiction is much more common in physicians.

Vaillant, Sobowale, and McArthur [10] studied psychiatric illness in physicians, comparing them to socioeconomically matched controls in occupations other than medicine. They concluded that "physicians, especially those involved in direct patient care, were more likely than controls to have relatively poor marriages, to use drugs and alcohol heavily, and to obtain psychotherapy." The frequency of marital problems in physicians is considered to be very high and is usually attributed to long work hours. However, one large-scale statistical study [6] based on legal actions, including complaints for divorce, separate maintenance, and annulment, reveals that "physicians are considerably less prone to marital failure than men of comparable age in the general population." Women physicians are at least 40 percent more likely to have unstable marriages than men. Black physicians in this study were prone to divorce 70 percent more frequently than white physicians.

By far the greatest risk for physicians is the temptation to misuse drugs. Narcotics addiction among physicians occurs twenty to thirty times as frequently as in the general population. Alcoholism is as least as common as in nonphysicians. The ease of availability of drugs for personal use is an important contributing cause of drug abuse and drug dependence in physicians. Because the physician is constantly prescribing drugs for others and feels competent in his ability to do so, he often believes he can accurately prescribe for himself. However, in treating himself, the physician rarely, if ever, makes an accurate diagnosis, and he does not evaluate the responsiveness to treatment as he would with his patients. As Little [4] says, "No matter how capable a physician is in treating others, he may well be incompetent to treat himself." Physicians frequently feel that they will not become drug abusers and tend to rationalize any drug use as a way to continue to perform their responsibilities to their patients under adverse conditions. Because of the high risk of drug abuse, physicians should never take a mood-altering drug on self-prescription.

Suicide is another major problem for physicians. The number of suicides each year of American physicians is equal to the number of students in the average medical school graduating class. There are more physicians who die by suicide than who die from automobile accidents, plane crashes, and homicide combined. Recently in the United States, suicide accounted for 28 percent of physician deaths under the age of forty compared with 9 percent for similar-age white males. The comparison of death rates from suicide in physicians to the general population yields different results depending on method. Ross [8] states that the suicide rate for physicians is double that for white males, and this ratio is supported by a recent study by Rose and Rosow [7]. When matched segments of the population were compared by Craig and Pitts [2], physicians had a similar suicide rate to the control population. The reports do agree that there is a significantly higher risk in female physicians. Not only do female physicians kill themselves more frequently than male, but the rate of suicide in female physicians is almost four times that of the general female population.

SPECIAL STRESSES OF THE PHYSICIAN

Although much psychiatric illness in physicians is essentially similar to that in nonphysicians in its genetics, precipitating factors, manifestations, and treatment, it is possible to identify some psychologic vulnerabilities specific to the physician and some special stresses in the role of the physician.

Vaillant et al. [10] compared psychiatric illness in physicians to controls and found some similarities in the background and the types of defenses used by psychiatrically ill physicians. Physicians appear to be more vulnerable to emotional problems if they have had an emotionally deprived, unhappy childhood and particularly when they try to compensate for this deprivation by giving their patients what they have never received. They conclude that "the care of other people rather than oneself is a superb form of adaptation — but only if the self is also cared for."

Depression in physicians is frequently related to what has been called role strain [3]. Role strain is present when the expectations are greater than the ability to perform and where there are large gaps between values and norms. Role strain in physicians is aggravated by constantly meeting failure in a situation where one's work is never done. The tendency to depression is also increased by constantly being surrounded by suffering, disease, and death.

Of physicians who develop a psychiatric illness, the most common long-standing unhealthy life attitude is a morbid, self-sacrificing, driven

existence [11]. This pattern may be manifested in a chronically self-destructive, faulty work life. Physicians who display this problem typically work excessively long hours, partly because of poor organizational habits. They take no scheduled breaks or vacations, get no physical exercise, and have no outside interests. This attitude, along with the illusion of being indispensable, effectively results in constructing a life without pleasure.

The most prominent early signs of emotional disturbance in a physician are living a hurried existence, having a chaotic everyday life with irregular eating and sleeping habits, and neglect of family responsibilities. These are followed by beginning doubts about ordinary office procedures and excessive anxiety when he is unable to make an immediate diagnosis or treatment plan. He becomes unstable and frustrated when treatment prospects for an illness appear hopeless. He frequently begins treating his own anxiety and depression with sedatives, alcohol, or even narcotics. Finally he may begin to neglect his practice or become less dependable and competent.

PREVENTION AND TREATMENT

Prevention of psychiatric illness in physicians relies on the same basic principles as prevention of psychiatric illness in other populations, plus some principles specifically applicable to the medical profession. One way suggested by some to prevent psychiatric illness in physicians is to screen out applicants for medical school who might later have emotional problems. This method does appear to be feasible for several reasons. First, no one really knows which applicant is likely to become ill with the stresses of the medical profession. Vaillant has suggested that there are some specific vulnerabilities, but these are not clear enough to eliminate applicants. And even if they were established, there is no simple screening procedure available, and more elaborate procedures would be much too expensive and time-consuming for the already overburdened admission committees. Another important consideration is in the area of individual rights. Would an admission committee be able to eliminate an applicant because he might become emotionally ill if he enters the medical profession?

Menninger [5] discusses a number of mental health principles as they apply to physicians. The physician must constantly reexamine his goals and priorities, especially in relationship to the time and energy spent with his family and his own needs. Vaillant, as most other authors writing about psychiatric illness in physicians, emphasizes this point: "Doctors need permission to cherish themselves and admit that they, too, have needs." Closely related to this is what Menninger calls an excessive sense of responsibility which "keeps us moving like a driven animal." Adequate coping mechanisms for handling stress and anxiety must be found,

and the quality and consistency of personal relationships needs to be examined. Perhaps most important in interpersonal relationships is the willingness to accept support from others: "The plain fact of the matter is that physicians have dependent needs too, all of our efforts to deny, to rationalize, or to minimize notwithstanding."

Early identification and treatment of psychological distress is particularly difficult in physicians because of the usual reluctance to accept psychiatric illness and also physicians' tendency to deny any kind of illness or to feel that they should be able to treat it themselves. Improved undergraduate psychiatric teaching may result in greater acceptance of emotional problems in general. The first indications of an emotional disorder may occur when the physician is still in medical school. For this reason, it is essential to have an efficient student health service to offer adequate treatment for students with psychiatric problems. More emphasis on providing facilities for treatment of medical students could significantly lower the incidence of emotional distress in physicians.

Even when the physician seeks psychiatric help, there are special problems involved in providing this. Just as there are problems associated with *being* a special patient, there are problems connected with *having* a special patient. Because the patient is a physician, the treating doctor may assume that his patient understands much about himself. When the treating physician is giving medication to another doctor, the treating physician may omit his usual directions and discussion of side-effects. He not uncommonly ends up providing less than optimal care for his physician patient.

EMOTIONAL PROBLEMS OF THE MEDICAL STUDENT

In a recent graduating class of 137 medical students, 32 or almost one-fourth of the class had been seen in consultation by the psychiatrist in the student health service. This figure does not include those who went directly to private psychiatrists or who were seen in didactic psychotherapy. Probably close to a third of medical students will seek psychiatric help at some time during their four years of medical school.

As with physicians seeking psychiatric treatment, most of the students (almost 60 percent) have nonschool related problems, and about 40 percent have a past history of significant emotional problems. Of students with school-related problems, the precipitating stress was frequently of the type common to the year of school during which the student sought psychiatric consultation [1].

During the first year of medical school, the student is confronted with a large mass of material with little possibility of mastering it perfectly. For the student who has been using compulsive mastery as a major

defense and whose self-esteem rests almost exclusively on his academic performance, failure, or even near failure, on one of the early exams sets off a chain of reactions. First, the student's anxiety level increases, and he experiences a feeling of lowered self-esteem. This may be followed by insomnia and difficulty in concentrating as the depression increases. Because he is able to study less effectively, his grades drop even more, aggravating his loss of self-esteem and depression. Another common problem during the first year of medical school is a decrease in motivation to become a physician. Often a student makes the decision to enter the premedical course in college without a thorough evaluation of his motivations to become a physician. During the college years, he is constantly preoccupied with keeping his grades up so that he can get into medical school, and he does not give much consideration to his basic motivation. Once he actually starts medical school, he may reconsider his decision and either take a leave of absence or leave school permanently. Occasionally his doubts about his motivation are related to fears of being incompetent and harming someone because he is unable to learn everything he feels he should during the first semester of school.

During the second year of medical school, the student has his first encounter with death and disease, both physical and mental. Most students will display the usual medical student syndrome of believing they have one or more of the diseases they are currently studying. An occasional student will become extremely preoccupied with his conviction that he has a serious illness and develop severe and incapacitating anxiety related to this preoccupation.

Beginning in the third year of school, the student will have to work closely with supervisors and develop professional relationships with patients. For the student who has been isolated and has had difficulty in establishing satisfactory relationships, this may be a stressful time. As the student becomes more anxious about his inability to establish adequate relationships, his usual defense of withdrawal may become exaggerated, and the difficulty is increased. Often the increased withdrawal is noted by the faculty, and when this conduct interferes significantly with patient care, the student may be referred for evaluation.

Near the end of the third year and the beginning of the fourth year, students are expected to take increased responsibility for patient care. With this heavy responsibility, the student may become acutely aware of the impossibility of being completely certain about diagnosis and treatment in many illnesses. This uncertainty may precipitate doubts about clinical competence and fears of harming a patient. To compensate for his uncertainty, the student may try to be more thorough in his workups, see his patients more frequently, and in general work harder to try to do things perfectly. As his anxiety mounts, he begins to be less efficient and worries more before finally seeking help.

Near the end of the fourth year, some students paradoxically become depressed. This usually is related to fears of being on one's own and not having anyone to depend upon. By the time he is ready to finish medical school, the student has been in a dependent situation for a long time. For a few students, leaving this secure environment is threatening and may reactivate fears of lack of competence.

In addition to the usual stresses of medical school, female students may have role identity problems, and married students may have problems with financial dependency, delaying children, loneliness of the spouse, and role conflict. As Snow [9] comments, "Although a medical education is certainly not a concentration camp, the very nature of medical school presents the student with a severe prolonged stress most often of a nature never before encountered and it is surprising indeed that as we observe medical students we witness as little psychiatric aberration as we do."

Psychiatric illness in physicians and medical students is at least as common as in the general population, but there are specific stresses related to the medical profession and to medical school that may act as precipitating factors in emotional illness. Of particular significance are the high risk of narcotic addiction in physician and the high risk of suicide in female physicians. Treatment presents special problems, especially because most physicians are resistant to seeking psychiatric treatment. Perhaps the most effective way of preventing psychiatric illness in physicians is to provide adequate psychiatric treatment services for the medical student.

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The Psychology of Women

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Since the mid-1960s, there has been an exponential increase in the amount of research in the area now identified as women's studies. This field cuts across the social sciences, the humanities, and the biomedical sciences and has characteristics of both an academic discipline and a social movement. This chapter will survey research within the fields of psychology and psychiatry and, to a certain extent, sociology and physiology. It will emphasize research findings that are important to the nonpsychiatric physician who wishes to treat women patients more effectively. Much of the current research is being stimulated, conducted, funded, evaluated, and disseminated within the context of the interdisciplinary field of women's studies. The social and political, as well as the scientific, context of this field is important in understanding the research as well as in conducting it.

Biomedical and social science research on women is both very old and strikingly new. Individual women and men have always tried to understand themselves and each other, and the very earliest medical writers made observations about women. Yet as recently as 1933, Sigmund Freud, in concluding his lecture on femininity, made this statement:

This is all I had to say to you about femininity. It is certainly incomplete and fragmentary and does not always sound friendly. But do not forget that I have only been describing women in so far as their nature is determined by

their sexual function. It is true that influence extends very far; but we do not overlook the fact that an individual woman may be a human being in other respects as well. If you want to know more about femininity, enquire from your own experiences of life, or turn to the poets, or wait until science can give you deeper and more coherent information. [82:135]

Science is now providing some of that "deeper and more coherent information"; the phenomenal growth of women's studies as a field is the clearest evidence. Although courses in this area began only around 1969 [115], by 1974, 900 institutions were offering 4,658 courses, with formal programs or academic major in 112 institutions [32]. The Feminist Press maintains a clearinghouse on women's studies and publishes both a women's studies newsletter and a guide to course, programs, and teachers [32]. The National Women's Studies Association was founded in 1977. Representative scholarly journals in this field include *Feminist Studies*, *Women's Studies*, *Sex Roles*, *Journal of the Psychology of Women*, *Journal of Women and Health*, and *Signs: Journal of Women in Culture and Society*. A number of other professional journals have included special issues or special sections on women's issues within their disciplines [24,25, 108,116,213,260].

There has been sufficient publication in this area to justify the existence of two separate bibliographical periodicals available in North America: *Women's Studies Abstracts* and the *Canadian Newsletter of Research on Women*. There are a number of annotated bibliographies: two from the National Institute of Mental Health [51,14], one from the American Psychological Association [17], and a general one by Davis [60]. Hochschild [106] reviewed the literature on sex roles and Long-Laws [150] the marital therapy literature from a feminist perspective. In 1974, Eichler [71] published an annotated bibliography of bibliographies on women, and Astin and associates published [13] one on education and career issues. Daniels [59], commissioned by the Association of American Colleges' Project on the Status and Education of Women, surveyed existing research findings, persistent research questions, and sources for keeping up with this expanded body of research.

In 1975, the *Annual Review of Psychology* for the first time included a chapter on the psychology of women [163]. By contrast Tennov noted that [241] of thirty-five introductory texts in social psychology published between 1940 and 1970, only one had a chapter on women. In psychiatry and obstetrics, the two medical specialties dealing most obviously with the psychology of women, there has been relatively little incorporation of this body of research until quite recently. Thus two major textbooks of psychiatry [121,223] include chapters on women in their recent editions for the first time. A recent survey of gynecology textbooks showed that those that

included a chapter on the psychology of women or related topics had not incorporated contemporary research on women's sexuality [217].

Several major texts on the psychology of women have recently been published [21,225], as well as several collections of readings suitable for textbook use. Miller's *Toward a New Psychology of Women* [166] is a particularly good choice for those wanting a short and relatively comprehensive introduction. Earlier books that are still classics are Morgan's collection [171], which contains a number of important scientific as well as general articles, and Cade's collection of papers on black women [46]. There are several good histories of the current women's movement [108], of male and female sex roles [78,120,261], and three archival collections of important historical documents [147,206,240], one of which [147] is on black women. Two histories of childhood [9,63] and one collection of archival sources in childhood [40] also contain historical research pertinent to women. A forthcoming series of books, "Women in Context" [256], will provide papers on women as medical and psychiatric patients, as well as from a developmental perspective.

Conceptually parallel to the growth of women's studies is the more recently developing field of men's studies, properly the subject of a chapter in itself. As with women's studies, it is both an academic research field and a social movement. As the latter, it seeks to counteract aspects of male gender roles that seem to be associated with considerable, even lethal, consequences for the individual or society. As a research field, it has many of the goals of women's studies: to correct prior research biases by treating male human behavior as a subject of inquiry in its own right, separate from the assumption that male behavior is more representative or normative for humans than is female behavior.

Currently there are far fewer courses and publications in this area, but the number appears to be growing. Representative books include Filene [78] from a historical perspective, Pleck and Sawyer [195] and Steinman and Fox [235] from a social science background, and Farrel [75], Fa-steau [76], and Korda [139] for general readers. A *Men's Awareness Network Newsletter* is published by the Knoxville, Tennessee, Men's Resource Center and cites scholarly and social resources. In 1975, it listed five college courses on men or male roles, one men's studies program in a "free college," and one major bibliographical collection (the Men's Studies Collection in the Charles Hayden Library of the Massachusetts Institute of Technology).

It is clear that the very newness of much of the work on women accounts for its present relative absence from medical school and psychiatric curricula. Time is required for the new research to be read, replicated, critically reviewed, and assimilated. In addition when the area in question is one that is as personally and professionally controversial as is this one,

there may be some sources of caution or resistance that further delay the process of incorporating studies on women in educational institutions. A physician's views of what women are or ought to be are likely to have a more profound effect on his personal life and world-view than, for example, a double-blind study comparing the effects of two different drugs. We bring our hopes and fears in this area to our design and evaluation of research results as surely as we do to our clinical work. Roeske's review of women in psychiatry [203] emphasized how often the psychiatric implications of gender issues have been handled by denial in clinical and training situations. That same denial may bias research by affecting the choice of research topics or subjects, the ways in which questions are asked, and the ways in which data are interpreted. Some physicians teaching in this area have reported anxiety on the part of colleagues and students. The anxiety may be generated from personal sources but may be expressed as questions about whether work on the psychology of women is properly part of the subject matter of psychiatry or medicine.

"Psychology of women" is itself a complex concept. As Parlee noted in a sophisticated review of issues and research in this area [190], the term *psychology of women* implies that psychology needs a special set of laws and theories to account for the behavior of females: "The bland assumption that males are more representative of the human race than females may have created an unknown number of pseudo-problems for psychologists." This includes both failure to detect important and interesting sex differences when they do exist and failure to refute assumptions about sex differences when they do not exist.

Women are less often subjects in psychological research than are men [18,48,55,99,110,159,198,213-216]. Indeed, one investigator found, in a content review of psychological journals, that female authors are more likely than male authors to have analyzed their data for the presence or absence of sex differences [246]. Whether women or men serve as subjects in an experiment tends to depend to some extent on the problem being studied; for example, studies of aggression are more likely to be conducted on males alone, and studies of interpersonal attraction contain a higher proportion of female subjects than aggression studies do. Studies are frequently reported and summarized in such a way that those conducted on males are generalized to everyone, while results from females are generalized only to females.

Generally held assumptions about sex roles or sex differences are often introduced into what purports to be scientific work without the perceived need for supporting evidence. For example, a book reporting clinical research on environmental effects on behavior disorder lists failure to cook her husband's breakfast as evidence of pathology in a woman patient [246].

Research findings are likely to be reported or abstracted in biased ways. Male-normative linguistic habits are common and revealing; for example, *superior* is used to describe higher scores by males, and *scored higher* is used for higher scores by females [190]. It is conventional in research, as well as in clinical settings, to use generic male terms to refer to persons of both sexes or to positions that could be filled by either sex (*nature of man; chairman* rather than *chair, attending man* for *attending physician*). The research data indicate that these are not merely neutral linguistic conventions but have the expected effect of inducing the reader to expect the positions to be filled by a male or the situation to be viewed from a male perspective [141,214].

Beyond the use of language is the problem of inaccurate and/or misleading references to primary data, (including the investigator's own data). For example, Asch [11], in discussing mental and emotional problems of pregnancy stated that "problems about eating are deeply rooted in the psychology of the pregnant woman" while citing data that seem to support the opposite conclusion (an extreme emphasis by clinic staff on avoiding weight gain had been transmitted to patients, which is now known to be obstetrically contraindicated) [11]. Many authors have cited Spitz [233] and Bowlby's [37] work as shedding light on maternal deprivation alone, the original reports, however, suggest that sensory and social deprivation were the major issues.

Indeed findings are likely to be explained in stereotyped ways even when support is available for alternative explanations. For example, one study ascribed female toddlers' staying closer to their mothers than male toddlers did to "timidity" just one page after noting that mothers had reinforced proximity seeking in girls while more frequently ignoring it in boys [129].

Clearly major biases such as these in the conduct and interpretation of research do not arise by unmotivated accident. An objective and value free science is a goal rather than something to be consistently expected in real life. Current thinking in the philosophy of science [140], the sociology of knowledge [234], and the psychology of expectancy effects [204] reconfirms our recognition that almost all knowledge has its political and wish-fulfilling contexts; the same point has been made with respect to clinical practice [26,27]. Psychological data about women can be gathered or used in quite different ways, depending on what one wishes to show. Henley makes a distinction between "psychology of women," "psychology against women," and "psychology for women" [102], pointing to the ways in which data about women can be gathered and used to stereotype women, to "put women in their place," or to be helpful to women.

The psychology of oppression literature [68,79] arises from noting the similarity between stereotypic views of women and stereotypic views

of other disadvantaged (but sometimes ambivalently envied) groups. Thus women, like blacks, have been described as "inconsistent, emotionally unstable, lacking in a strong superego, weaker or less often healthy, artistic rather than conceptual, nurturant rather than productive, intuitive rather than intelligent . . . if she knows her place she is really a quite lovable and loving creature, happy and childlike" [250:81]. Similarly women are said to be more manipulative, devious, inscrutable, and erratic; it has been accurately pointed out that these are characteristics to be expected from any group that has access to power and economic support only by pleasing another dominant group. An accurate analysis of such stereotyping requires a recognition of both true differences (reflecting differing coping mechanisms) and perceived but untrue differences (arising from observer bias, lack of knowledge, and/or projective mechanisms).

By contrast the psychology of gender roles arises from noting that there is a division of labor present in most human societies, which rests in part on reproductive biology and in part on a cultural elaboration of the consequences of biological differences. Women are expected to give birth, rear children, feed people, and perform other tasks which a society views as consistent with these responsibilities (whether the individual woman has children or not). Men are expected to perform the residual tasks. Female gender role behavior may then be seen as more firmly grounded in biology [181], with more clarity and inevitability attached to it. Male gender role behavior correspondingly is seen as less certain and clear, less biosocially predictable, more subject to change according to social circumstances, more a product of culture, more an achieved than an ascribed status, and perhaps thus for the individual male, more of a source of uncertainty, anxiety, and confusion [86,183].

The role differences between the sexes are often sharply contrasted, often at the price of over simplification, in the hope of making life simpler or more comprehensible. Clearly defined status and gender roles are said to be one of the advantages of stratified societies, even at the cost of inequity or loss of individuality. On the other hand, fear or envy of prerogatives of the opposite sex, or aggressive or defensive behavior against the opposite sex, is so common as to have received a special term: the battle of the sexes. There is in fact a long and remarkable tradition of misogynous writings, both scientific and literary, reflecting fear of women's sexuality, historically documented by Hays [100], Lederer [145], Rheingold [201], Sherfey [224], Bachofen [15], and others. An attempt to reverse these biases and traditions would constitute a genuine and important scientific revolution.

Scientific revolutions at the beginning are often more conceptual than empirical: a new point of view often reorganizes old data before it stimulates the search for new data. The new point of view surfaces in a

particular context of scientific and political crisis [140] (it is rarely as new as it later appears) [73]; it may stimulate anxiety, opposition, and blind discipleship quite as much as it does objective search for facts.

Thus it has been observed that there were particular resistances to assimilating the work of Copernicus, Darwin, and Freud. The heliocentric model removes our earth from the center of the universe. Evolution makes "man" no longer the species uniquely created to govern this earth. The dynamic unconscious makes "man's" conscious motivation no longer master in "his" own soul.

In this sense the feminist perspective appears also to imply a genuine revolution in social psychology. Man — the male half of the species — is no longer to be viewed as its prototypic member, with female psychology the psychology of the "other," the exception, the supporting cast. The implications of this different perspective will ultimately go far beyond the simple accumulation and assimilation of new data about women.

The field of psychology of women, within psychology as a whole, has been comprehensively reviewed by Denmark [64]. She considers this field to be the study of behavior (including male sex-role behavior) mediated by the variable "female sex." Thus the psychology of women includes all psychological issues pertaining to women and their experiences.

GENDER DIFFERENCES IN BEHAVIOR

A great deal of research has been documented in an attempt to determine the nature and extent of sex differences, much of it carefully reviewed in a major book by Maccoby and Jacklin [152]. Their annotated bibliography cites approximately fifteen hundred studies appearing between 1966 and 1973 alone. Earlier studies in this area were reviewed by Maccoby [151], Sherman [225], Bardwick [22], and Garai and Scheinfeld [88]. Clearly the question of just how different women and men are is one that has occupied considerable attention.

Sex differences could in theory arise from at least five different sources:

- 1 Intrinsic biological differences that are present at birth or from a relatively early age.
- 2 Intrinsic biological differences that emerge later (at puberty, middle age, or later years).
- 3 Purely cultural differences in social roles assigned to the sexes, which are learned as part of the socialization process.
- 4 Anticipatory socialization, which is cultural at the time it is taught to the child but is preparatory for biological or cultural

role differences that will not become apparent until a later age (e.g., childhood socialization for, or against, the adult experiences of childbirth, child care, or making a living in a competitive labor market).

- 5 Further cultural elaboration of behaviors that predictably emerge as part of reactions to the more basic sources listed above. For example, if women are differentially socialized against direct expression of sexuality or aggression, an elaborate secondary repertoire of indirect expression, sometimes called manipulation, is required.

Despite the theoretical importance of intrinsic biological differences between the sexes, and the considerable belief in them on a folk-wisdom basis, it is easier to demonstrate belief in these differences than the differences themselves. For example, one study [208] found that fathers described their newborn daughters as "delicate" and their newborn sons as "strong" before they had even seen the children. Another study reported that mothers of young children played differently with, and attributed different traits to, another mother's child, depending on whether the child had been introduced as "Beth" or "Adam" [254]. While such beliefs can clearly become self-fulfilling prophecies, to what extent do they also rest on innate biological differences?

The difficulty is partly methodological — one cannot experimentally raise an otherwise normal human in a culture-free environment — but it is also substantive — the plasticity of human behavior is such that many biological differences can be overcome by learning. And the variability of human behavior is such that there is considerable overlap between the sexes on almost any variable chosen for comparison, with considerably more variation within than between the sexes.

In their massive review of the sex-difference literature, Maccoby and Jacklin found only three sex differences that were well supported by the existing data:

- 1 Males are more "aggressive," with sex differences appearing as early as social play does (ages two to two and a half) and appearing in both physical and verbal, direct and attenuated forms of aggression. (The meaning of *aggression* is complex and will be discussed below.)
- 2 Girls have, on the average, greater verbal ability than boys after about age eleven, as measured by tasks involving both receptive and productive language. This was as true for "high-level" verbal tasks such as analogies, comprehension of difficult written material, and creative writing as for "lower-level" ones such as fluency.

- 3 Boys have, on the average, greater visual-spatial and mathematical ability, beginning at about ages twelve to thirteen. (There is some evidence to suggest that a recessive sex-linked gene contributes to greater than average spatial ability in approximately 50 percent of all men and 25 percent of all women. This would make the average score higher for males but would not mean that individual women who had this gene were less spatially able than individual men who had it).

Both of these last two sex differences begin to emerge around the time of pubertal changes, but the evidence that biological factors are contributory is stronger for visual-spatial than for verbal abilities. Sex differences in mathematical abilities vary greatly among populations, probably depending somewhat on the measures that are used (with mathematical problems involving spatial concepts giving an advantage to the greater number of boys having high visual-spatial abilities).

Certain other common beliefs about sex differences were refuted by the data Maccoby and Jacklin reviewed — for example, that girls are more socially oriented than boys, more suggestible, more auditory, less visual, less analytic but at rote learning, and lower in self-esteem and achievement motivation. They found other sex differences to be neither supported nor refuted by the data because of insufficient or ambiguous evidence: sex differences in tactile sensitivity, fear, timidity, anxiety, activity level, competitiveness, dominance, compliance, nurturance, and “maternal” (or parenting) behavior.

The activity-passivity dimension does not differentiate the sexes unless one confuses activity with aggression or regards activity as masculine and passivity as feminine by definition, in which case the reasoning is circular. The confusion of activity with aggression arises in part because many measures of activity occur in play situations that are also likely to arouse aggression.

If aggression is defined as “the intent of one individual to hurt another, either as such or as part of an attempt to control another for other ends (by use of fear),” it does persistently appear more commonly in males. This shows up across cultures and in different age ranges, although most of the studies Maccoby and Jacklin reviewed were laboratory studies done with young children. It was also noted that mothers use more physical punishment (itself an aggressive act by this definition) with boys than with girls, possibly setting up a circular process whereby aggression reinforces aggression. Where this process begins is uncertain, although Maccoby and Jacklin lean toward a biological explanation.

Whatever the source, the sex differences in aggression appear to be considerable, and there are important social implications. Evidence from

other sources [3,167] indicates that some of the differences may be decreasing, with apparent increases in women of some forms of aggression, such as crimes of violence. It is possible that this kind of change, however much viewed with alarm, may have positive aspects. The history of occupational sociology tells us that when formerly male occupations became increasingly occupied by women (e.g., schoolteachers, bank tellers), the jobs increasingly lost their attractiveness for men. It is possible that criminal violence might in part decrease its attractiveness as an arena for proof of masculinity as larger numbers of adolescent and young adult women engage in crime.

In the rearing of children, animal and cross-cultural research suggested to Maccoby and Jacklin that there might be some danger to children from untamed male aggression, but that "boys who have been involved in caring for younger siblings were less aggressive with age mates as well — i.e. the process of caring for children at least on a part time basis can moderate aggressive tendencies" [152:372]. These authors observed that effectiveness as a husband and father can be diminished by a machismo role, while "training a girl to be feminine" in the traditional nonassertive helpless and self-deprecatory sense may actually make her a worse mother. They conclude by observing that even if there are real biological differences in aggressiveness between the sexes, a society might have options about whether to socialize for exaggerating or moderating these differences; it might "devote its energies more toward moderating male aggression, or toward encouraging rather than discouraging male nurturance activities" [152:374], a conclusion also voiced by Eisenberg in a paper directed at pediatricians [72].

With regard to vocational choices, Maccoby and Jacklin found no evidence for widespread beliefs that women are better at repetitious, mechanical tasks; rather they felt that "women, being slower to anger, are less likely to protest onerous assignments . . . to put the matter bluntly, they are easier to exploit."

A rapidly expanding research literature explores the role of sex differences in the vicissitudes of achievement motivation, beginning with the work of Horner [113,114]. She did indeed find sex differences in late adolescents and adults, contrary to the findings for younger subjects summarized by Maccoby and Jacklin. High achievement in occupations traditionally considered masculine was viewed for males as unambivalently desirable, while subjects of both sexes projected that similar high vocational achievement by females would be accompanied by deprivation or disaster in personal life. This belief was held more strongly by college women than by college men. It appears likely that reinforcement conditions of adolescent or adult life may account for many of the sex differences that apparently emerge after childhood.

The generalizability of the work reviewed by Maccoby and Jacklin is significantly limited by the ages of the populations studied and the nature of behaviors observed. Guided by developmental theory, psychoanalytic or otherwise, the vast majority of the studies were done on children, often very young children; only a handful were done on adults. Yet the review shows that the majority of the most stable sex differences appear after puberty. In a review of recent work in child development, Baer and Wright [16] discussed the implications of reinforcement models (or social learning theory) as opposed to classical developmental models. The former imply relatively greater plasticity of behavior if the reinforcement conditions change; the latter imply something close to the concept of critical periods for acquiring behaviors that constitute sex differences.

GENDER IDENTITY AND GENDER ROLE

A now considerable body of clinical research on patients suffering from gender dysphorias, gender misdiagnoses, or gender changes appears to require both developmental and reinforcement models. For example, the work of Money and Ehrhardt [171] and Stoller [236] suggests that there may be something like a critical period for the development of core gender identity (i.e., one's sense of femaleness or maleness). Even when based on an anatomical misdiagnosis that could be corrected, gender identity is now found to be virtually irreversible after early childhood.

Two key concepts here are easily confused. *Gender identity* is the sense of "I am a girl" or "I am a boy." It is ordinarily solidly fixed by an early age and is progressively less changeable after eighteen months [236], shortly after speech begins. *Gender role* is the collection of behaviors perceived as appropriate to the gender one has and to the opposite gender. Gender roles are quite complex and tend to differ at various times in the life cycle, under different cultural and situational circumstances, and in response to different relationships. Both sexes learn the elements of both gender roles, though they may perform mostly the behaviors of their own. Thus a girl might have a solid sense that she is a girl (female gender identity) while actively pursuing tree climbing and other activities defined by her culture as masculine (masculine gender role) or tomboyish (an alternative feminine gender role). At adolescence she might make a sudden shift to a major preoccupation with clothes, cosmetics, and dating (stereotypic feminine gender role behavior). She might ignore school and vocational achievement, marry early and have children, then suddenly find herself by divorce, bereavement, or enhanced economic aspirations needing to work. She might then function quite competently at tasks that she had previously regarded as part of masculine gender role, eventually coming

to regard them as compatible with both her female gender identity and gender role.

Three points deserve emphasis. First, core gender identity, being formed at an early age, is identity as a girl or a boy rather than as a woman or a man. Identity as an adult member of the same gender remains both more flexible and more uncertain. Young children ordinarily learn that there is some similarity between girls and women, or boys and men, but the implications are by no means clear. More learning is required to flesh out the roles. Second, gender identity is relatively independent of sexual object choice and of stylistic features of gender role. That is, a lesbian woman has female object choices but does not ordinarily have any more doubt about the fact that she is female than does a heterosexual. Her gender role behaviors (with the exception of object choice) may be typically, even stereotypically feminine; her dress, mannerisms, choice of vocation, and so forth may be those generally regarded as typical of women in general and in some cases may be even exaggeratedly so. She may have children or adopt them and may be a devoted and capable mother. Alternatively, or in addition, her social behavior may include many behaviors stereotypically considered masculine.

The third and most remarkable point is that gender identity is relatively independent of anatomical sex. If baby's sex is misdiagnosed at birth, surgical and hormonal correction must be done early in order to avoid a problematic dissonance between the new anatomy and the old identity. Money and Ehrhardt report that such changes can be made between twelve and eighteen months but become progressively more difficult with every month of age thereafter.

Female gender identity is occasionally produced in biologically normal males (transsexuals) and vice versa; in cases Stoller studied [236], it was vividly present by age one or two. This syndrome is characterized in adult life by a strong sense of having been placed by accident in a body of the wrong gender. Surgical and hormonal correction is sought, and selected cases appear to do better psychiatrically after the operation than they did before.

REPRODUCTIVE LIFE

The Menstrual Cycle

Menarche is a more clear-cut landmark in pubertal development than any single event in the adolescence of boys. Indeed puberty rituals for boys in some cultures might be viewed as an attempt to provide culturally for boys

an experience like that which nature provides biologically for girls, clearly setting off childhood from adulthood. Bettelheim [34] has interpreted some male puberty customs such as subincision (cutting the underside of the penis until it bleeds), as an almost literal imitation of menstruation.

The overwhelming majority of women of all ages can remember with precision the age and circumstances under which the first menstrual bleeding occurred. There is enormous variation, of course, in the amount of intellectual understanding, anticipation, surprise, pain, affective change, and indeed the amount and regularity of bleeding that occurs with first periods. We are just beginning to get prospective data on samples of normal young women. One study [252] reported that some women have a sobering or even depressive response to first periods and begin to experience their lives as more "serious" or more restrictive, even in the absence of outward life change. Earlier studies [30,36,222] were based on retrospective data from adults but appear to provide general agreement.

Although menarche is a life event that could be examined within the framework of crisis theory and is marked by elaborate rituals in some primitive societies, our society pays relatively little public attention to it, either ceremonially or in the scientific and general literature. Hygiene books for grade-school children often omit references to menstruation. Special booklets and films provided by manufacturers of sanitary products are a major source used in schools for education about menstruation, with some serious biases and omissions noted by Whisnant and associates [253]. Thus the need for maintaining "daintiness" and secrecy about the process is stressed (the advertised sanitary products will help with this) while the possibility of pain or affective fluctuation — and certainly libidinal fluctuation — are ordinarily played down. Detailed drawings of some aspects of female reproductive anatomy are provided (ovary, uterus, endometrium), but the parts of her anatomy that the girl can see and feel herself (labia, clitoris) are only vaguely sketched in or even omitted altogether. The localization within the body as a whole may be hazy. Changes in cervical mucus, which are palpable to women who have been instructed in observing them (and which have been used clinically as a fairly reliable guide to identifying fertile periods) [135] are ordinarily not described. Useful information such as the fact that masturbation to orgasm (or intercourse) can provide relief of menstrual cramps for many women is not provided for reasons of prevalent taboos. Rather menstruation is presented as an occasion for new cleanliness and toileting practices with typically vague allusions to the happy knowledge that all of this relates to the possibility of becoming pregnant at some time assumed to be in the rather distant future. Thus little help is offered in integrating sexual anatomy and menstrual cycle physiology into a coherent, meaningful, sexual self-image.

In this way the biological meaning of menarche as a passage into adulthood is obscured and perhaps deliberately countered. In our culture it does not mark such a transition for most women, for several reasons. First, pregnancy in adolescence is generally regarded as a social catastrophe, and marriage is being deferred into later years as formal education is lengthened. Second, the age of menarche has been dropping steadily in Europe and America over at least the past two centuries, just as the years of formal education generally required to achieve normal adult status have lengthened. The average age of menarche dropped from over seventeen in 1833 to thirteen and a half in Norway, and to less than thirteen in the United States in 1960 [239]. Menarche now occurs many years before adult social status is achieved. This earlier age of onset is generally believed to be a result of nutritional changes since the timing of the pubertal growth spurt correlates with body weight [85]. This in turn may be related to the amount of refined sugar in the diet. Obese girls tend to have earlier puberty than the nonobese, and Canadian Eskimos changing rather suddenly from a high protein diet to a high sugar one typical of North American experienced a very sudden drop in the age of menarche [212].

EFFECTS OF THE MENSTRUAL CYCLE

Somewhat more data are available on the biopsychological and behavioral effects of the cycle itself [55-56,138,157,164,185,188-189,232,249,251]. However, work in this area must be appraised with caution. The actual biological events are covered with considerable psychological and interpersonal overlay, and there are very real consequences in individuals' lives from the hasty acceptance of overgeneralized impressions or data. The fact that some women have severe premenstrual or menstrual incapacity and others do not has been used paradoxically both to dismiss the seriousness and validity of the complaints of those who do have the syndrome and to assume erroneously that if some have it, all do. One politically prominent physician was willing to state his belief that menstrual and menopausal symptoms made women as a group unfit for political office [161]. By contrast women who do experience severe symptoms may have difficulty obtaining indicated medical treatment for this "psychogenic" malady [146].

With these caveats in mind, what data are currently available about the effects of the menstrual cycle? A number of studies [55-56,164,189,247] appear to show increases in certain affects (libido, irritability, anger, anxiety, and/or depression) in some women during the premenstrual and menstrual phases of the cycle and corresponding decreases in the same affects at other phases. This has been manifested in such diverse measures as self-reported affects, dream content, waking fantasies, and overt behaviors, including increased rates of accidents and committing violent crimes and more frequently bringing one's children to emergency rooms for

minor illnesses. Some studies show increased and some decreased libido [55–56].

The proportion of women reporting any of these effects varies among studies but averages about 50 percent (this average is undoubtedly somewhat inflated by the fact that studies showing negative effects are less likely to be published). In one series of prospective studies [157,251], women who on entering college reported severe menstrual distress turned out to have lower grade-point averages and a greater probability of diagnosis of affective disorder, suggesting the possibility that bipolar affective disorder in women may initially present as menstrual distress. However, in a nonclinical population, Sommer [234] failed to find any evidence of intellectual or performance changes with the cycle. Changes in perceptual sensitivity (particularly olfactory) and responses to alcohol have also been observed [125–126].

Methodological problems in this area are many. It is obvious that a woman's own expectations about menstruation (and possibly those of her family, friends, or sexual partners) could override purely hormonal factors. Indeed Paige [185] found that reported menstrual distress varied with both the subject's religion and the actual amount of bleeding (itself dependent on hormonal manipulation). Koeske [138] showed that vignettes describing angry behavior by women were attributed by college students to environmental events, unless the vignette included the information that the subject was in a premenstrual or menstrual phase, in which case the same behavior was attributed to hormonal causes. Ruble [209] showed that women who were led to believe that they were in a "premenstrual phase" described themselves as having more physical symptoms (water retention, pain, and changes in eating habits) than did women who were led to believe they were in an "intermenstrual" phase, or than women who were given no information. Parlee [188] has reexamined Dalton's data [56] showing poorer examination performance by menstruating students. The same data also provided evidence for delayed menstruation in a portion of the sample. Cycle variability is considerable, and stress can delay or accelerate ovulation and menstruation. Therefore it is possible that prolonged stressful situations, culminating in attempted suicide, violent crimes, or poor examination performance, followed by a period, could sometimes represent "tension-delayed menstruation" rather than "premenstrual" tension [188].

Surprisingly, after all these centuries of human menstruation, we still do not have definitive data on the subject. It is intriguing, however, as Parlee [189] noted, that most researchers have tended to attribute behavioral or affective changes associated with the menstrual cycle to hormonal factors but are more likely to attribute emotional changes during pregnancy to the woman's life situation or intrapsychic conflicts about mother-

hood, despite the fact that there are considerably greater hormonal changes associated with pregnancy.

More research in this area is clearly needed. At present, reviews by Parlee [189], Melges and Hamburg [164] and Dalton [55] and Weidiger's [247] and Delaney et al.'s [62] books for general readers provide the best coverage of the topic. A forthcoming research symposium volume [58] will provide new research and overviews of many aspects of this important field.

EFFECTS OF OTHER TYPES OF CYCLICITY

While the greater visibility of cyclical changes in menstruating women has attracted more study, researchers are beginning to study the effects of cyclicity in hysterectomized women who retain their ovaries and in men [67-68]. Testosterone levels in men do vary with time, with access to sexual opportunities, and apparently on occasion, with the menstrual cycle of the usual sexual partner. In rhesus monkeys, testosterone levels can be experimentally manipulated by artificially changing the male's access to estrous females or his dominance position vis-à-vis other males [205]. Other studies of women have shown greater affective and behavioral fluctuation with the weekly cycle (work week versus weekends) than the menstrual cycle [207]; diurnal cycles produce hormonal and affective changes in men and women. The topic will be more comprehensively dealt with when it can be brought together with the growing literature on circadian and ultradian rhythms in general.

Menopause

Menopause is a distinctly human characteristic. In most other mammals, the sexes do not differ greatly in their capacity for maintaining fertility up to advanced old age. The biological adaptive value of menopause appears to be related to other distinctive human characteristics, such as the prolonged period of childhood dependency, with complex care-taking behaviors that in the human are not fixed action patterns but must be learned. Menopause ensures that the average healthy woman will have many years of health and vigor following the birth of her youngest child. This freedom from new pregnancies permits more extended child rearing as well as participation in a number of teaching, care taking, and leadership functions. Selective pressures appear to have favored those of our ancestors whose females had menopause over those who did not. Thus it is particularly ironic that the medical and psychiatric literature on menopause, as reviewed by Osofsky and Seidenberg [184], tends to view it as "a time of mortification, with service to the species over" [184:611].

SYMPTOMS ASSOCIATED WITH MENOPAUSE

Symptoms attributed to the menopausal phase itself include vasomotor instability (hot flashes, night sweats) and emotional difficulties (irritability, anxiety, depression, insomnia). Symptoms associated with the postmenopausal phase have included estrogen deficiency syndromes (such as vaginal mucosal thinning) and emotional difficulties, predominantly depression, with impaired self-esteem. We do not have generalizable data on the prevalence of these symptoms in the population at risk. One review suggested [127] that the vasomotor symptoms are more frequent in women of menopausal age than other ages, but emotional symptoms are not; just as in the case of menstruation, emotional changes are likely to be attributed to menopause if both coincide.

As with menstrual symptoms, there has been a paradoxical tendency to assume both that if some women have severe or troublesome symptoms, all must, and conversely, either to provide inadequate treatment for the presumed "psychogenic" symptoms of those who suffer or overprescribe unnecessary (and carcinogenic) [262] estrogen replacement even when symptoms are mild or unrelated to estrogen deficiency.

Thus far there appears to have been a relative neglect of the effects of the menopause (and its anticipation) in much of the recent work on psychology of women. A number of relatively comprehensive books on women [225] and sex differences [84,152,171,244] do not deal with it at all, despite the fact that the relatively early end of female versus male fertility is one of the more striking sex differences in humans.

SOCIAL FACTORS

Standard texts do not appear to include many references to cross-cultural work bearing on the important question of the extent to which menopausal symptoms are prominent in cultures in which women's social power and influence rise rather than decline with age. In any society menopausal phenomena are inevitably intertwined with other aspects of beginning middle age. Women are more likely to be widowed than are men, and if this occurs, they have less chance of remarriage, a salient difference in a social structure primarily organized around the heterosexual pair bond. At about the same time as the menopausal years, many women are dealing simultaneously with the departure of children from the home, the entry of the husband (who is likely to be at least several years older) into the years of preretirement, and the risk of his midlife depression or even early death. These factors merit study in relation to the emotional difficulties reported by some women at these ages. Social factors seem to be at least as important as biological ones at this point. For example, the factors predictive of an active sexual life in older age groups have emerged as general good health, prior active sex life, and the availability of an interested and interesting partner [193].

Disease of the Reproductive Organs

An aspect of body image with an important effect on the psychology of both sexes is the potential for life-threatening or life-disrupting diseases of the reproductive organs, particularly when those diseases are mysterious or related to sexual activity or both. Thus syphilophobia was apparently a far more common clinical entity when the natural history of syphilis was less well understood and its treatment less effective than they are today.

The internal position of most of the genital organs in women is generally believed to contribute to women's sexuality being perceived as more mysterious by both women and men; but for women this poses a body image problem as well. If the organs cannot be seen, their very existence and certainly their healthy functioning cannot be verified except by inference. Barnett [23] found evidence of a body-image scotoma in girls, including the vagina itself and the organs within. Lerner [14] has amplified this by noting the frequency and significance of the absence of vocabulary for a differentiated perception of even the external genitalia in girls (thus every boy learns the word *penis* or an equivalent; few girls learn *clitoris*, *vulva*, *vagina*, or equivalents until much later, if ever; the usual terms are *down there* or *my bottom*).

Nevertheless women who have received reasonably adequate health education (and women's magazines contain a great deal more of this than men's do) have been told of the risks of having cervical or uterine cancer and asymptomatic general infections. These risky conditions are usually detected by having someone else examine the women's body and do appropriate tests. While the woman is told that she should examine her own breasts for lumps, she is reminded that only a physician can tell if they are benign. Thus her appropriate health education, if carried out well, must inform her that these parts of her body can turn against her in a malignant way. Whereas in past years a woman's potential fear that her own body might kill her may have been more closely associated with a fear of obstetrical catastrophes, in contemporary life the risk of death from breast or genital cancer is relatively much greater.

Like so much about women's biology, these risks are currently both overreacted to and underreacted to. That they nevertheless play an important role in women's psychology seems likely. It is quite possible that a vaguely defined fear of death or disease from genital organs has contributed to women's willingness to undergo hysterectomies far more often than is generally believed necessary. Indeed the word itself may favor such treatment: excessive concern with ill-defined body complaints is more likely to be called *hysteria* in women (referring to the uterus), whereas comparable symptoms in men are more likely to be called *hypo-*

chondriasis (referring literally to chest pain). On the other hand, the average adult patient visiting any physician's office with almost any complaint is likely to have the heart and lungs examined (thus detecting evidence of the prime killers of middle-aged men), while the average woman, unless coming with specific complaints related to these systems, is much less likely to receive thorough breast and pelvic examinations (which might detect major killers of middle-aged women).

There do not seem to have been any studies of the actual prevalence of fears of one's own body among nonclinical populations of women and men. Such studies would be difficult, if one postulates that displacement of such fears onto symptoms such as backache occurs to an unknown degree. However, there have been a moderate number of studies in recent years on the psychological effects of breast and genital surgery on women [148]. Most of them have dealt with the effects of surgery for malignancies and thus do not add to our knowledge of the effects of loss of specifically female body parts per se, apart from the frequently associated fear of death from malignancy.

Childbirth

Childbirth among humans appears more variable, more subject to learning, and less instinctive than in other animals. Even something as basic as labor pain is enormously variable in amount and characteristics, subject not only to strictly physical variables such as size and position of the infant but also to prior learning, personal and cultural expectations, obstetric procedures, and other variables not yet clearly delineated. Until modern times, most obstetric catastrophes were relatively untreatable, and fear of birth was held to be a realistic part of human experience. Thus the parents and social milieu of many of today's mothers may have transmitted a psychology of fear, pain, fatalism, and the like. General taboos on sex education have extended to childbirth, so that young women are likely to form attitudes about birth many years before accurate information about it is available to them.

Unquestionably modern medicine and obstetrics have made major and life saving advances. Maternal and neonatal mortality rates have decreased considerably. This is widely attributed to the medicalization of childbirth and the use of hospitals for deliveries, although American statistics continue to be less favorable than those of other countries such as Holland, which use hospital obstetrics only for high-risk births [197]. In this country, the hospital birth is relatively new. A majority of births occurred at home as recently as 1938, thus less than two generations ago [97].

At present a high proportion of American maternal deaths and infant complications result from anesthesia [6]. The need for pain relief during normal delivery is so intimately bound up with the mother's expectations and training, and the effects of maternal and infant sedation so closely related to formation of the mother-child bond, that management of obstetrical pain must be considered a pediatric and psychiatric research area, as well as an obstetric one. Recently observers within obstetrics, pediatrics and some consumer groups, have scrutinized the psychosocial aspects of current obstetrical practice [10,194], and national and internal societies for psychosomatic obstetrics and gynecology have been formed.

Research has demonstrated adverse effects of medication on length of labor and on infants' arousal level and sucking behavior, sometimes persisting as long as four to seven days and therefore potentially contributing to lactation failure [10]. Aspects of hospital milieu and practice such as unfamiliar environment, presence of strangers, and being moved from one room to another late in labor have been shown to affect labor adversely in human and infrahuman species [39]. The common practice of separating the mother and infant immediately after birth and maintaining a separation of several days punctuated by brief feeding periods appears to affect adversely the formation of a mother-child bond [177]. It is possible that the total exclusion of husband and siblings from contact with the child during the days immediately after birth, coupled with separation from the mother, may adversely affect these other family bonds as well.

The issues here are rather like those involved in the classic studies of hospitalism in infants and children. Procedures undertaken for sound medical rationale — such as provision of treatment and prevention of spread of infection — were shown to be sufficiently disruptive to normal psychological processes that their overall advisability had to be questioned. The point here is not that these procedures (or some of them) are not often important for the treatment of complications but that until fairly recently, there has been a surprising neglect of the possible profound psychological implications of these procedures and the implication that they are always necessary rather than a standardization of what is sometimes necessary. Indeed a majority of psychiatric studies of adverse psychological responses to the childbirth situation have concentrated on preexisting pathology in the mother (which may, of course, exist) to the exclusion of effects of the birth situation or the anticipated childrearing situation [189]. I have been unable to locate any outcome study examining effects of preexisting maternal psychopathology in interaction with adverse effects of the birth situation, although it seems highly likely that a woman who was psychologically healthy and anticipating a wanted child might be better able to tolerate the customary degrees of psychological interference during the birth process than a less favorably situated woman.

Social and consumer movements developing around childbirth and lactation, such as Lamaze and La Leche groups [136], have attempted to counter some of these trends but at times have had their own tendencies to compromise further the mother's sense of mastery [143]. For example, contemporary attempts to save both what is best in modern obstetric practice and in more natural methods have predominantly addressed themselves to the married couple [38]. Yet one-third of American first-born children are conceived outside of marriage [54]. While about half of these conceptions are "legitimated" by marriage, in a high proportion of cases the marriages are unstable. Thus the current emphasis on husband participation may not offer psychological help to the woman who probably needs it most. It would appear, for example, that an unmarried adolescent mother whose family is ambivalent about or opposed to the birth would have an especially great need for any modification of obstetric procedure that could enhance both her own sense of mastery and adulthood and the mother-child attachment process.

Lactation

Newton and Mead have called lactation a "transitional" period in the mother-child relationship, the time between birth and weaning from the breast [160]. They noted that in primitive cultures, it may last for years but that in modern America it may be nonexistent. Goodall observes that in chimpanzees, it may last four or five years, thus for this species almost until puberty [93]. Prolonged lactation may be seen as incompatible with the demands of industrial society or simply as too sensual for public indulgence, or it may also be seen as a threat to the marital bond or as an obstruction to shared parenting. Usual American practice is to omit it altogether (most common) or attenuate it with early introduction of solid foods and supplementary bottles.

The immediate postpartum physiological advantages of breastfeeding have been described: the mother gains the benefits of nipple stimulation with consequent prolactin release and a more rapid uterine involution, and the infant obtains colostrum, which contains valuable antibodies [93]. The psychological aspect tends to be either romanticized or neglected; it heavily includes fostering a mutual rather than an altruistic beginning of the mother-child relationship. A nursing mother is likely to experience engorgement at about the time the baby cries from hunger; the nursing experience relieves and indulges mother and child. Thus from the beginning, each is providing comfort to the other. Bottle feeding, by contrast, is mostly for the baby's sake and provides much less libidinal satisfaction to the mother. It is clearly possible to raise children this way, particularly when they are very much wanted, but current statistics on child

abuse suggest that in many cases, reliance on altruism for the establishment of the mother-child bond is hazardous [133].

Lactation in the United States had been declining in frequency but is apparently now undergoing a renaissance [122]. This is partly based on new scientific data from both allergy-immunology research and psychological studies. Infants who are breastfed for more than token periods now appear to have distinct advantages in terms of lower rates of milk allergy, other allergies, and serious infectious diseases; these advantages have been observed even in middle-class populations with access to good medical care [104]. Mother-infant attachment appears to be facilitated by breastfeeding, particularly when initiated within the first postpartum hour [52]. The La Leche League, a breastfeeding mothers' mutual assistance organization, in 1976 celebrated its twentieth anniversary and the training of its ten-thousandth group leader [142]. The very existence of such an organization is a commentary on the extent to which breastfeeding had become nonnormative in this culture; traditional cultures in which virtually all women breastfed their infants provide support and instruction in techniques as a part of the general culture. Raphael [199] provides a cross-cultural perspective on the importance of female-female support networks in the establishment and maintenance of lactation. This contrasts somewhat with contemporary American views of parenting, which tend to stress the nuclear family and the importance of husband-wife support [200].

One trend that may have contributed to the decline in lactation and associated modifications of parenting practices has been the recent resurgence in the employment of mothers outside the home. However, these trends are not necessarily incompatible, and a historical overview and practical guide for employed nursing mothers is available [211]. The contemporary tendency to view the female breast in heterosexual more than lactational contexts has undoubtedly contributed to a moderately strong taboo on public nursing, which is not generally found in cultures where breastfeeding is normative. This taboo is a powerful block to successful breastfeeding, since it could isolate the mother-infant pair from ordinary social settings, tending to deprive both of social stimulation, which is normal in other cultures.

SEXUAL BEHAVIOR

Coitus and Noncoital Sex Play

The psychology of coital behavior has recently received more clinical and research attention than many other aspects of female psychology. Much of the current thinking and research in this area appears to be a rediscovery

of knowledge that was temporarily lost. Late Victorian medical and popular writers have been quoted as believing that "normal" women do not enjoy sexual intercourse, but early Victorian and earlier writers did not share this belief [98]. Clitoral anatomy and orgasm were accurately described by early Victorian medical writers [98], who also advocated early marriage, since they believed that women's sexual needs were very strong and if denied might lead to "hysteria" or other consequences. The same writers, however, opposed masturbation and displayed a remarkable scotoma about lesbianism. One, arguing against the institution of all-girl boarding schools, observed that "the girls teach each other to masturbate, and as a result some of them never want to marry" without apparent awareness that "teaching each other to masturbate" referred to lesbian sexual relationships [230].

Late Victorian and even recent medical writers have tended to define healthy female sexuality primarily in terms of its adaptiveness to male sexual needs and preferences [95,98,118]. A fairly recent review of chapters on female personality and sexuality in gynecology textbooks [5:283-288] uncovered such remarkable statements as, "if a woman after a year of marriage is not able to adapt her sexual needs to those of her husband, medical attention is indicated." The controversy over clitoral versus vaginal orgasm appears to be an example of the same viewpoint. Masters and Johnson [155] have described the physiology of female orgasm, as did Kinsey and associates [134] and early Victorian writers [98].

Clitoral, vaginal, or anal stimulation (and occasionally fantasy or breast stimulation) can all evoke orgasm; there are differences in the locus of stimulation but not in the physiology of the orgasm itself. In addition women may subjectively experience clear differences between "little" orgasms (more accurately, relaxation from peak excitement without orgasm proper, which is perhaps analogous to satisfactory intercourse without ejaculation, as is common in older men) and "big" orgasms (or orgasms proper, accompanied by spasm of the pubococcygeal muscles and varying degrees of tonic-clonic contraction of the voluntary musculature). Pubococcygeal spasm is perceived vaginally if it is differentiated from the total experience, regardless of the kind of evoking stimulus [137]. The spasm may be more intense with direct clitoral stimulation [155], but it may be more consciously perceived if vaginal stimulation focuses attention on that area. The psychological difference between clitoral and vaginal stimulation clearly has much to do with the fact that an adequate male partner is more often associated with the latter. Whatever the locus of the tactile stimulation, the interpersonal fantasy aspects of the situation heavily color the woman's subjective experience.

Freud [82] believed that lesser maturity was likely to be associated with a preference for clitoral stimulation (masturbation by the self or the

partner). Indeed he distinguished clitorally induced and vaginally induced orgasms as though these were different kinds of orgasms. This disparagement of the clitorally stimulated orgasm as immature has recently stirred considerable controversy [130], but perhaps the clinical observation is nevertheless sometimes accurate. This could rest on the fact that a woman might need greater maturity and skill to communicate her sexual needs to a male partner than to fill them herself or have them filled by a woman partner who understood from her own experience. Indeed contemporary sex therapy approaches as reviewed, for example, by Kaplan [130] tend to place a heavy emphasis on communication, helping both partners learn to communicate their sensual and sexual feelings, as well as encouraging conditions that are favorable for evoking female orgasm in coitus (such as adequate foreplay, freedom to use the female-on-top position, unhurried atmosphere, deconditioning of premature ejaculation, and nonverbal as well as verbal communication).

Sexual dysfunction is said to be extremely common among American couples; Masters and Johnson [156] estimate that up to half of all couples are sexually dysfunctional to some degree. Remarkably we have no recent and representative large-scale surveys on the prevalence of this kind of problem. Despite the fact that our social structure is organized around the heterosexual pair bond, which is supposed to include both affectional and sexual ties, we have no data on the proportion of such pairs who are satisfied with their sexual relationship, their love relationship, or both or neither. Given the amount of concern generated by rising divorce rates, one might think that gathering such data would be considered a high-priority research need.

Clinically it does appear that sexual difficulties are common and, further, that applicants for psychotherapy do not necessarily voice their sexual complaints unless they are specifically asked about it [256].

There are some interesting differences in the kinds of sex therapy that have been advocated for the two sexes. While most sex therapists today prefer to work conjointly with a couple who are committed to each other, it seemed natural to Masters and Johnson to provide surrogate partners for men who lacked a partner willing to participate in therapy [156]. Medicolegal problems, rather than purely therapeutic ones, forced them to abandon this program, but it has been taken up by others. On the other hand, approaches directed at treating the preorgasmic woman who lacks a partner for the therapy have tended to emphasize a method of teaching her first to masturbate to orgasm rather than use a surrogate partner [20,137]. The method uses deconditioning, "permission giving," sensory awareness, and encouragement by group process with masturbation "homework." The rationale here is to increase the woman's sexual activity and autonomy; she can hardly be expected to communicate her sexual needs and wishes to a partner if she does not know them from her own

experience, and she cannot easily be sexually effective if she believes female sexuality is a passive experience. The fact that most studies have shown that far fewer women than men masturbate spontaneously during adolescence [134] appears consistent with this approach. Women who go on to high intellectual achievement are more likely to have had active masturbatory lives during adolescence [87].

Women's sexual fantasies, masturbatory or otherwise, were little studied until fairly recently. However, a number of recent journalistic studies [83,105] and novels [128] show evidence of increased popular interest. Many women quoted by these authors had previously never discussed their sexual fantasies and assumed that even the fact of fantasizing was abnormal.

Lesbian Relationships and Sexuality

The distinction between close female friendships and lesbian relationships appears to have been confusing for many professional and popular writers. There has been a significant scotoma in both law and social science, which may have worked to the advantage of lesbians: laws against homosexual behavior have almost never been enforced against women with the exception of some recent problems in child custody.

In fact lesbian women make the same distinction between friends and lovers that heterosexuals do, and heterosexual women do not appear to be as confused or anxious about the distinction between close friendship and sexual intimacy as men do. "Homosexual panic" as a clinical entity appears to be far more common among men than women, although Deutsch [66] theorizes that it might be a possible problem for widows.

Until recently there has been a relative paucity of research literature on lesbianism and an even greater neglect of what research is available. Sherman, in a relatively comprehensive and recent text on research on psychology of women, has no section on the topic [225]. The APA bibliography contains just four references on lesbianism, only one of them a research paper [16]. The NIMH bibliography lists only six research papers [14]. These were for the most part directed at comparing symptom prevalence in heterosexual and homosexual male and female samples, generally finding small differences or none (several studies showed a slightly higher frequency of depression, drug use, or suicide attempts in homosexual populations, but the majority functioning as well as controls on the dimensions studied). Literature reviews [187,248] do not include references to studies of lesbian women as mothers, a serious gap in view of the fact that expert testimony is often sought with reference to child custody disputes. Recent research is filling in this gap [94].

Available literature indicates that lesbians as compared with male homosexuals tend to have or seek lasting relationships more frequently [119]. One recent study, comparing unmarried young lesbian women to unmarried young heterosexual women, found both groups to have about the same percentage of transient, deepening, and cohabitating relationships expected to be permanent and about the same percentage of depression and other symptoms. Both groups are under some similar social pressures — e.g., to marry and/or conceal the status of their sexual relationships. The fact that these pressures are generally conceded to be considerably greater for lesbians might have predicted a greater incidence of symptoms, but this was not found [179].

Lesbian relationships in previously heterosexual women are beginning to receive some research attention. In some cases, the women themselves regard their previous heterosexual experience as an attempt to deny a lesbian orientation, which they trace retrospectively to earlier years. However, there is also a distinction between political and personal lesbianism. Some women have felt that participation in the women's movement either ideologically contradicted or personally made difficult relationships with men [61,221]. Confining love relationships as well as friendship relationships to women then becomes a political statement, or a practical necessity, or both.

Much of the discussion in the growing body of literature regarding female-to-female social networks at present and historically is relatively new [221]. Normative social-structural models have been based on the heterosexual pair or the male-male bond [228] as the primary units of the social structure. In these models, female-female bonds are regarded as of secondary importance, supportive to the social structure or a way of filling in time in the absence of the heterosexual or mother-child bonds. Yet there is abundant evidence that women's friendships have always been an important part of the social fabric, relatively neglected only in early twentieth-century social theory [231].

As Smith-Rosenberg [231] observes, extremely close, warm, devoted relationships between women were common in previous years and were expressed openly in affectionate correspondence, which has apparently been an embarrassment to some modern historians. Emotional support in times of crisis or loneliness, and practical help with such events of the female life cycle as birth, gynecologic problems, illness, and care of the sick, were major areas of help that women gave to each other and continue to give. There is a fairly widespread tendency to disparage the "kaffee-klatzsch" conversation of women, but research on widowhood has disclosed a greater number of men who have intimate conversations only with the wife, while women are more likely to have a female confidante as well. The fact that the mental health and happiness of single and widowed

women is generally better than that of single and widowed men has been attributed in part to the supports available from female friendships [35].

The women's movement has been cited by some women as providing them with significant female friendships for the first time; previously they had felt competitive or anxious with other women. A pilot study of friendships among women active in the movement, however, did not confirm this as general; most of these women had had important friendships with women all their lives. What the movement had provided in most cases was a new appreciation of the value of these friendships [221].

Rape

Rape is a distinctively human capacity; most mammals have intercourse only when the female is in estrus and signals her availability. The cues that stimulate male interest in intercourse with a particular female are tied to her readiness, which in turn is tied to her time of fertility. In some animals there is considerable synchrony of the fertile periods of females — that is, a definite and often brief mating season in which most members of the species will be sexually active [74]. In other species, female fertility is highly asynchronous, so that only a few females are receptive at any given time. Under these circumstances, it is possible for a few males to obtain a monopoly over sexual opportunities, either directly or through control over other scarce and valuable resources, such as more desirable food supplies or breeding territories. In these species male sexuality clearly becomes closely related to the dominance hierarchy between males.

Humans appear to show a different pattern. Human females do not have synchronous fertility, but the link between fertility and receptivity has been lost in human evolution with nonhormonal factors far outweighing effects of the menstrual cycle. Fluctuations in libido with the cycle are slight enough that it takes careful research to demonstrate them, and the results of available research are somewhat contradictory. Some studies show peaks of libido around the time of ovulation, some show peaks during the premenstrual period, some show both and some neither. Careful studies with rhesus monkeys, who resemble humans in having a menstrual rather than an estrous cycle, show that indeed different couples if caged together show different patterns of coital frequency throughout the cycle [68]. A predominant pattern is that of increased frequency around the time of ovulation. The peak is broader or sharper depending on which male the female is caged with; with a preferred partner, coitus occurs frequently during a longer period around the peak, while with a less preferred partner, it will occur only at the midcycle peak. If the cage is arranged with an exit the female will "escape" at all other times. The fact

that coitus may occur with some frequency if she cannot escape suggests that this species may provide our only animal model for anything resembling rape. In this species, as in humans, the fact that the female is a voluntary partner at one time says nothing about her willingness to participate at other times if she is not forced to do so.

The recent increase in awareness of the frequency of rape, and the seriousness of the psychological consequence both of rape and of fear of rape, is expressed in a rapidly growing area of research, recently reviewed psychiatrically by Hilberman [103] and historically and journalistically for general readers by Brownmiller [44]. Much of the work is clinical and is directed at recommending or evaluating treatment approaches to rape victims or studying psychological characteristics of convicted rapists of known victims. Research in this area is seriously hampered by the low rates of reporting rape (estimated at about one out of five) and the even lower rates of convictions. Self-report studies suffer from one kind of sampling bias, but emergency room or prison studies represent the perhaps atypical victim who reports the crime and the atypical offender who is convicted. It has therefore been impossible to obtain representative samples of rapists or victims, but a few tentative conclusions can be drawn from available research.

Wartime rape is apparently extremely common, particularly after victory; rapes by pairs or gangs of men are frequently described patterns, as is the raping of a girl or woman before the eyes of her helpless father or husband. There is evidence to suggest frequent complicity or even encouragement of this behavior of their soldiers by the military authorities, as part of either deliberate attempts to demoralize a conquered population or as part of the ancient concept of considering women's bodies part of the material booty of war [44]. Simple frustration of sexual needs on the part of the troops is an inadequate explanation when one considers both the frequent reports of murder and/or mutilation of the victims, as well as the coexistence of rape and prostitution.

Civilian rape is one of the more frequent serious crimes: 51,000 cases of forcible rape and attempted rape were reported by the FBI in 1973 [77]. Using the one-in-five estimate for reporting, this would yield 255,000 cases in that year, as compared with 19,510 murders, 416,270 aggravated assaults, and 382,680 robberies. The arrest rate was 51 percent for rape (versus 79 percent for murder, 63 percent for aggravated assault, and 27 percent for robbery). Thus the arrested offenders are thought to represent about 10 percent of the number of offenses that occur; since some rapists commit many rapes, they represent a higher proportion of the known offenders. According to Gebhard [89], offenders convicted tend to be heterosexually active apart from rape (as opposed to otherwise using other outlets or none); 61 percent are under age twenty-five (with the highest concentration in the eleven to twenty-four age range). Forty-one percent

are black and 51 percent white. Amir [8] found no special psychopathology that distinguished them from other offenders who commit any sort of crime. Abel et al., however, found rapists had penile erections to a video-audio tape description of a rape scene, as much as to a scene of mutually enjoyable intercourse, while nonrapists did not [1]. In the Amir study, which included reported rapes regardless of whether the offender was apprehended, 43 percent operated in pairs or groups. Evidence suggested that 71 percent of the rapes were planned, though the choice of victims might be happenstance. Rape tends to be a big-city crime more than suburban or rural; the southwestern states have the highest rates for rape (as for homicide and assault). The actual site is most frequently the victim's home, usually by forced, illegal entry (34 percent, 52 percent, and 56 percent in various studies), thus clearly refuting the argument that victims usually precipitate rape.

Among arrested rapists in Amir's study, 55 percent raped in gangs and 16 percent in pairs. (The male-bonding relationship between rapists in these situations represents an important aspect of male psychology beyond the scope of this chapter.) The combination of rape and murder is relatively rare but receives disproportionate press coverage; in these situations the murder often occurs first, with the rape performed on the dying victim. These figures omit both statutory rape and rape of a married woman by her husband, which is not defined as a crime in this country even if the pair are separated (thus differing from a number of other countries [149]).

Cross-cultural work suggests that in primitive cultures, rape is used as an expression of manhood, an indication of the property concept of women, and as a means of deliberate punishment of women who have behaved in uncustomary ways [44].

The incidence of statutory rape (sexual relationships with girls too young to be presumed able to give valid consent) is even less well known; many families do not report it for fear of exposing the child to trauma in the form of cross-examination or fear of punishment when the offender is a family member, as is often the case. In Kinsey's 1953 sample, one in four of white and predominantly middle-class women reported an unwanted sex experience of some sort, occurring before adolescence with an adult male [134]. The 1969 study by the American Humane Society found that sexual abuse of children was statistically more prevalent than physical abuse. Ten girls were molested for every boy; 97 percent of the offenders were male; three-fourths of the offenders were known to the child or her family (27 percent living in the same home). Over 40 percent of the events reported were repetitive; 60 percent involved force or the threat of force, and an additional 15 percent involved promise of money or gifts. Two-thirds of the victims were found to have suffered some form of identifiable emotional disturbance. The ages of offenders ranged from seventeen to

sixty-eight, with a median of thirty-one, thus substantially older than rapists of adults. In thirteen percent of cases, the natural father had committed the offense, and in fourteen percent the stepfather or man with whom the mother was living. These data contrast sharply with Freud's belief that the high proportion of such events reported by his patients must have been fantasy. An interesting sidelight is that as far back as the Code of Hammurabi, a man who raped his own daughter was banished, while a man who raped another man's daughter was killed [44].

A perennial issue in discussions of rape is the male fear of false accusation. In 1973 the FBI reported that fifteen percent of all rape accusations had been dismissed by police as unfounded; yet when New York City put policewomen in charge of interviewing the complainants, that figure dropped to 2 percent, the same as the rate of false reports for other violent crimes [44].

The consequences of rape commonly include lasting psychological distress; a rape trauma syndrome has been clinically described [45]. It is difficult to know how much of this is to be attributed not only to the rape but to contributory insensitive behavior of police and hospital personnel to the extent that the woman feels raped a second time. Women have often been further victimized rather than protected by attempts at conviction (such as court proceedings damaging her reputation, while the defendant's is not admissible as evidence). Similarly women are victimized by some attempts at prevention, such as the suggestion of staying in at night, thus limiting social and vocational aspirations. Yet male concern over the possibility of false accusations continues to run high. In one sample [28], psychiatric treatment for victims had been more often provided and more often perceived as helpful if the victim was a child rather than an adult at the time of the attack. This may have been due in part to the fact that attempts at treatment of adult victims have often focused, like so much in psychotherapy, on the hope of finding a remediable way in which the victim contributed to her own victimization — inadvertently adding to her victimization by blaming her.

The possibility of being raped also affects the psychology of women who have not been raped to an as yet unidentifiable extent. Beginning with early childhood, families provide more chaperonage for daughters than for sons [174]. Women are more likely to be fearful of going out at night than men are. Women who wear sexually stylish clothing are accused of provoking their own rape or that of others (though women and men who wear expensive clothing are not usually accused of provoking robbery). There has been some question whether a woman who hitchhikes can press a charge if raped, though other crimes by a driver against a hitchhiker are actionable. The presumed effects of the fear of being raped are to heighten dependency on trusted men as protectors (a strategy that

sometimes boomerangs). Yet the reported effects of an actual rape are both an increased fear of another rape and, frequently, a wish to avoid men altogether. We do not know at present the extent to which long-lasting rape trauma is intrinsic versus iatrogenic (a result of traumatic or inadequate treatment of the victim). There appears to be considerable interest in improving treatment approaches, and a monograph on rape victims and their treatment has recently been published by the American Psychiatric Association [103].

Fertility Control

It is generally believed that safe, reliable, available contraception and abortion are new and are effecting profound changes in the psychology of reproductive life for women. This is both true and not true. Methods of contraception and abortion have been available since antiquity, partially suppressed at times because of religious or moral beliefs, population needs, or concern about safety, efficacy, and pleasure. In the United States abortion on request and dissemination of contraceptive and abortifacient knowledge and devices were legal until 1872, when the Comstock laws were passed. Legislative and judicial repeals of barriers to these services have been recent and remain controversial.

For many women today, the norm of controlling one's own fertility is experienced as relatively new. It follows that there is a cultural lag in assimilating these expectations. Pregnancy is now generally felt to be a matter of choice (whether conscious or unconscious) rather than fate, despite the fact that no temporary method is completely effective. Thus the expectation of conscious control of conception outstrips the reality. The corollary of increased choice appears to be an enhanced sense of responsibility for the outcome of childbearing, with vulnerability to guilt and other feelings that may interfere with optimal parent-child relationships. In addition many of the new contraceptive methods carry medical hazards, enhance susceptibility to venereal disease, and can be seen as diminishing the shared responsibility of men.

Accurate information about the medical hazards of birth control pills has not been generally available to most women, although the fact that there are dangers has been disseminated by the public media and is therefore a source of anxiety for many women. Tietze's data [242] suggest that the risk of death from birth control pills is greater than that from childbirth — or from alternative contraceptive approaches, including abortion — for all portions of a woman's reproductive career, except for women having frequent intercourse during years of peak fertility. After age forty, in adolescence, or for women having infrequent intercourse,

regular use of the pill is not as safe as the alternatives. The safest methods for women — in terms of few side-effects and some degree of protection from venereal disease and possibly cervical cancer — are the diaphragm or condom, with backup abortion, although they have been viewed as psychologically less acceptable to women and/or their partners. The use of condoms, especially if the woman were the one insisting on it, would require a degree of sexual and general assertiveness that has not generally been part of the behavioral repertoire of women — particularly adolescents, for whom this method appears to be particularly indicated because of the probability of relatively infrequent intercourse and relatively frequent changes of partners.

In 1969 Pohlman [196] reviewed research on the psychological aspects of family planning. Like so much of the literature on childbirth and contraception, this work suffers from an emphasis on the married couple; only 5 out of 444 pages of text discuss contraception out of wedlock. With the early adolescent population now the only group in the United States showing an increasing birthrate [227], and with the current increase in both divorce rates and the acceptability of child rearing outside of marriage, there is an urgent need for more research bearing on the psychology of family planning outside of the nuclear family. These facts have been dramatized in a publication of the Guttmacher Institute [5], but the recommendations seem too heavily based on the use of oral contraceptives. While their simplicity may make them a good beginning method, their medical hazards in the adolescent group suggest that wherever possible, the assertiveness training necessary to make use of coital methods a realistic possibility should be provided.

A fairly high proportion of adolescent women use abortion as the initial method of fertility control [81]. This is true even for young women who had previously thought that abortion was not an acceptable option for them until they were faced with an unwanted pregnancy. The data do not indicate that large numbers of young women are using the availability of abortion to supplant other contraceptive approaches; rather a more psychologically complex attitude of denial appears to be operating, along with a continued prevalence of the belief that to be prepared would mark one as expecting to have intercourse and therefore either unspontaneous, unfeminine, or immoral. A great deal of work needs to be done to help young women realistically accept their own sexuality and its possible consequences. In some cases, acceptance of sexuality might mean acting on it less frequently, in that some studies [180,226] show a high proportion of young people not wanting sexual relations or having them more often than they themselves wish, perhaps to please a partner. The freedom to refuse seems harder to achieve than the freedom to submit for many young women. Nevertheless it will be some time before we are able to

provide this degree of realistic acceptance and informed behavior for all young women. In the meantime attempts to limit the availability of abortions appear to provide severe mental health hazards to young women. Any limitation on a woman's right to choose whether to conceive or carry a pregnancy to term probably contributes psychologically to the maintenance of the passive attitude toward fertility that results in lower use of birth control. Attempts to teach birth control broadly while limiting the availability of abortions thus appear to be likely to boomerang; more unwanted pregnancies will continue to be conceived.

The psychological effects of abortion have been examined in a series of studies [2]. The trend appears clear: some women show adverse psychological sequelae, but the incidence is lower than for term births. Psychologically (as well as medically) the data support the somewhat startling conclusion that abortion is safer than normal birth. The higher rate of adverse psychological consequences for term births may be partly due to the responsibility for the child, but in part they may also be due to the fact that both internal and external difficulties in arranging abortions are still sufficiently great to make it more likely that the woman who is ambivalent about a pregnancy will carry it to term.

FAMILY STRUCTURE AND CHILD REARING

All human cultures have some form of family or family-like grouping. Besides "expressive" functions in living and loving, families serve multiple "instrumental" [191] purposes: to pool economic resources, support and stabilize adult personalities, and provide support in illness and disaster, as well as to share the tasks of child rearing and childhood socialization. Family and kinship networks may be built around a matrilineal or matrilocal family, patrilineal or patrilocal family, or other groupings of real or fictive kinship networks.

Recent Western and particularly American, culture is relatively unique in having as the norm a small nuclear family, with few enforceable obligations resting on other kin. This nuclear family is both highly portable (the average duration of a mortgage in the United States is said to be four years) and often unstable in itself (the average duration of a marriage is currently said to be six and a half years). The contemporary isolation of many nuclear families from the tribe or extended family, with disruption of the female-female bonding system characteristic of many primates and traditionally dwelling humans, is a relatively new characteristic of mobile industrial societies [120]. Particularly new is the combination of crowding in isolation (a nuclear family crowded into a few small rooms, coexisting

with relative social isolation of a housebound mother from extended family and other familiar adults). For primary child care, contemporary American society is distinctly unusual in relying far more heavily than most other cultures on mothers alone, with variable but relatively scant participation by older children, husbands, or other kin [170].

The "trapped young mother" syndrome has received extensive interest in public media. Indeed the Michigan Happiness Survey (a national household probability sample) [47] finds a sharp drop in reported satisfaction with life as a whole, between young married women (89 percent satisfied) and married women with young children (65 percent satisfied). Indicators of psychological stress were greatest for both men and women during the early parental life stage.

Apparent effects of some of the above variables on the psychology of women have been to increase the importance of the heterosexual bond without necessarily increasing its stability while decreasing the importance of other social bonds, such as those to kin, friends, and neighbors. One of our great national problems appears to be a maldistribution of child-care experience; some full-time housewives suffer from excess contact with children and a relative deprivation of contact with adults, while the other members of our society may be virtually isolated from any contact with small children. Day care centers that are well run and employ adults who have chosen child care as their work, find that about six hours of direct child care per day is an optimal maximum [116]. Full-time housewives may exceed this by far. By contrast, one study showed that a sample of middle-class husbands spent less than one minute a day in direct contact with their infants [42]. This is a keenly felt deprivation for some men [72]. Similarly children in small families may grow up without any real experience in caring for younger sibs, and women whose children have left the home may mourn the total loss of child contact. Maccoby and Jacklin discussed evidence of the advantages of care of younger children in the socialization of older children [152], and Goodall points out that some sharing of child care is common among chimpanzees [93].

There is a widespread belief that the American nuclear family structure has deteriorated. It has certainly changed. Our divorce rate is the world's highest. Although four-fifths of divorced persons eventually remarry, children may spend prolonged periods of time with an overburdened single parent. In 1970, over one-fourth of our children under eighteen (and over half of our black children) were not living with both original parents [92]. By the time they reach eighteen an estimated 35 to 40 percent of American children will have spent six years or more in a single-parent home [19]. This is a sizable percentage and perhaps reflects the fact that the single or divorced group who in a sense may need the support of a marriage most (parents of young children) may have least opportunity to meet and bond with another spouse.

Previously single-parent homes were referred to as broken homes and occurred mostly when death or divorce broke a preexisting nuclear family. Now, however, there are increases in the intentional formation of such families. Single-parent adoptions, for example, are now accepted even in the midst of a shortage of adoptable infants [219]. The single parents are predominantly heterosexual women, although there are also increases in the number of single-father headed families, and single homosexual custodial parents of both sexes. Between 1940 and 1970, the following increases occurred: 1,057,000 white never-married women family heads aged fifteen to forty-four, 509,000 nonwhite women in the same situation, and 35,000 white and 148,000 nonwhite never-married women heading families. In total, this was 2,519,000 female-headed families in 1970, with an increase of 38 percent to a total of 3,476,000 projected for 1990 [53].

It appears, however, that declining marital stability independent of other factors accounts for only 3 percent of this increase. The largest factor, accounting for 36 percent of the increase, was the increased propensity of women with children to form their own households [53]. As recently as the thirty-year period between 1940 and 1970, it has been not so much the nuclear family as the extended family that has ceased living together. In American culture, independence from the family of origin is ranked far more highly than solidarity with them, at least as far as living together is concerned.

These broader changes in American family structure are striking. In 1890, the average household size was five; in 1974, it was under three, reflecting both fewer children and also fewer other relatives in the home [255]. Historical studies have indicated that the communally dwelling extended family was more characteristic of land-owning farm families [174] than of urban ones, a condition characteristic of a higher proportion of the U.S. population in 1890.

All of these problems are probably considerably greater in industrial society than previously because of the greater number of hazards that require close supervision of children and prevent their sharing in adult work, and the marked increase in the length of the period of childhood dependency. Age fourteen, formerly the average year for entry into the work force, is today considered early adolescence — a period close to childhood, often felt to require close parental supervision. The fact that we have not yet fully integrated the changed conditions over the past one hundred years may represent a culture lag, which is currently being addressed.

What effects do these unusual features of recent American family life and child-rearing conditions have on the mental health of women — and children? Much of the available data lies more in the realm of social commentary than research.

Moynihan — himself a successful product of a home broken by death — attracted considerable attention by attributing black poverty and other social ills to the prevalence of single-parent homes [176]. It is true that child abuse studies [91] and the studies of psychological readiness of six year olds for school [131] indicate the relative vulnerability of a single adult in caring for children, particularly under conditions of poverty. (However, the critical protective factor appears to be the presence of more than one adult, not the question of whether that other adult is a father, a grandmother, or even a mother's female friend.)

Mental health statistics show that married women are more likely than the unmarried to seek psychiatric help [96] or to attempt suicide, or even if nonpatients to report somatic symptoms considered indicative of psychological distress [69]. In apparent contrast, the Michigan Happiness Studies report that women as a group exceed men in reported overall life satisfaction under the following life circumstances: married, ages eighteen to twenty-nine, no children (seventeen percentage points greater satisfaction); never married, over twenty-nine (twelve points); never married, eighteen to twenty-nine (eleven points), widowed (six points); or married with children (three, two, one points, declining as the children are younger). The greater life satisfaction of women than men thus appears to be very small for married women with children, much smaller than in other life circumstances. The possibility that even this small difference is defensive self-reporting is suggested by the higher incidence of suicide attempts and somatic symptoms in the same age range. In summary, women report themselves as happier than comparable men if single or widowed; this difference rises during early marriage if there are no children but declines to nearly zero if there are children.

Thus there is a striking contrast between the traditional belief that women more than men require marriage and children for psychological fulfillment, and the evidence that marriage, and especially the child-raising period, is associated for women with lesser happiness, greater stress, and more overt mental illness.

One possibility that accounts for this contrast is that women have been raised without accurate information about the toll that marriage and child rearing might exert on their lives. Another is that marriage and parenthood, like other desired goals, may be both a genuinely desired challenge and a source of stress and therefore increased risk of impaired physical and mental health. It is not unknown for people to seek other pleasures, such as smoking, skiing, or high-pressure jobs, despite known hazards to health or happiness. The research literature attempting to quantify stress in relationship to illness clearly suggests that positive life events may be as stressful as negative ones [111].

It is highly likely that some of the toll exerted by child rearing and perhaps marriage as well arises from both intrinsic stress and lack of accu-

rate anticipatory information. This suggests that it is important for both clinicians and the population at large to have a realistic appraisal of the occupational hazards of child rearing. We are not in a good position to understand and mitigate these costs if we deny them.

A variety of approaches are currently being used to mitigate the psychological costs of child rearing while preserving the benefits. Women themselves are increasingly seeking extrafamilial employment during the child-rearing years [107] and are planning on having smaller families [92]. The low rates of pay that most employed women receive suggest that the motives for employment are not entirely economic [107].

Suggestions have been advanced for modification of male career patterns [72], provision of professional or neighborhood day care homes [101], employment of foster grandparents, and the like [132]. Even the realistic appraisal of stress and symptoms as a time-limited occupational hazard, rather than necessarily evidence of personal pathology, might be expected to be beneficial. Few of these suggestions have been implemented on any large scale, and fewer still have been carefully evaluated in terms of their impact on the satisfaction and health of women, men, and children. This is an important area for social psychological and clinical research in the future.

PSYCHOLOGY OF WOMEN AT WORK AND IN COMMUNITY AFFAIRS

Some of the material pertinent to this section has already been discussed under child rearing. This is appropriate, since housekeeping and child rearing are work. Additionally the burdens and satisfactions of housework and child care continue to fall more heavily on women than on men, regardless of the women's employment status [245]. Sometimes this is by the women's choice, sometimes a matter of guilt, sometimes an unrealistic commitment to the superwoman role. Childhood socialization may play an important role; women who already have learned how to cook, clean, and manage a household efficiently may despair of teaching those skills at a later age to a husband who has not learned them. Even women who are employed have been observed to teach household skills to and require household duties from daughters more than sons [112], a situation likely to perpetuate the imbalance. Perhaps all of us would enjoy having a personal servant and to, some extent, enjoying this role vicariously by performing it for others may be easier than giving it up. It is also true that in work situations there is still a pronounced trend toward failure to recognize women's real competence [158], and the maintenance of domestic competence greater than her husband's may remain a source of compensatory self-esteem for women employed outside the home as well as in it.

Bardwick summarizes evidence showing that the present cohort of middle-aged women begin to evidence increased dissatisfaction with a housewife-only role after about ten or fifteen years [21]. Whether this length of time will continue to be salient is a matter of speculation, but current data suggest a sharp increase in the number of college women who report plans for little, if any, interruption of their careers [187].

A majority of adult women are employed outside the home, constituting 40 percent of the paid labor force [12:33]. Statistically they work at lower-status, lower-paying jobs than men do, a gap that is widening rather than narrowing [12]. This condition may pose psychological, if not economic, problems for the relatively affluent married woman whose husband provides support and family status. A substantial number of women are the sole or a major support for themselves and their families, if any, and another substantial portion are keenly aware of the need to have their daily activities receive social validation in terms of money and/or respect. Guilt about or pragmatic conflict between the demand of work roles and mother roles poses problems for many women [33]. This arises in part as a function of the woman's income and job status: absenteeism for child-care reasons is higher among women whose pay is at the same level as that of all available surrogates or who lack control over their own working hours [192]. Fathers rearing children alone have many of the same problems; their number is increasing with the acceptance of single-parent adoptions and the decrease in the convention that the mother is automatically to be favored in obtaining custody after divorce.

The increasing number of women who say they are working for fulfillment rather than or in addition to economic necessity deserves serious consideration. Salary may not do much more than cover increased expenses from employment. Some wonder about this trend, noting the apparently mundane character of many jobs that are taken for fulfillment reasons. Ultimately this will require reexamination of our assumption that only well-paid or policy-making jobs provide fulfillment. It is probably a remnant of the American upward mobility-success tradition. The need for companionship in one's daily activities is fairly widespread, as is the need for producing a tangible product, which household maintenance does not provide.

An extensive body of work on motivation now exists for occupational achievement in women. Horner's early studies [113] suggested that some kinds of achievement that were relatively unambivalently valued by male college students were perceived as dangerous or conflictual for college women. She postulated a fear of success among bright women. A number of replications and extensions in this area have begun to tease out some of the relevant variables. For example, success motivation for competitive tasks in men tends to disappear in the absence of an audience,

while the opposite appears to be true for women [65]. These and other studies suggest that achieving women have learned to fear that society might punish them for that achievement, particularly if it is perceived as deviant, while achieving men have learned to expect societal reward to maintain their behavior.

A large literature on conditions of work for employed women and effects of their employment and employment conditions on children has received four major fairly recent reviews [107,116,117, 178]. The trend appears to indicate that children do best overall when mothers who prefer to be housewives can do so and when mothers who prefer employment can have it. While earlier work had looked for, and found, adverse effects of employment (such as inadequate supervision, especially in poverty groups), more recent work looks for and finds both positive and adverse effects, both of which occur in interaction with other variables. In one study of working-class depressed women compared with normal neighbor controls, the percentage of employment was about the same among the depressed as the controls, but depressed women were more likely to dislike and function poorly at their job and to have impaired relationships with their children — regardless of whether the job was that of a housewife or a paid employee [249]. Employed women recovered more quickly from depression than housewives, even when they were employed by economic necessity [173]. The household milieu may be understimulating for a depressed woman, even if the same woman prefers it when not depressed.

WOMEN AND PSYCHIATRIC ILLNESS

Depression and Schizophrenia

A greater proportion of patients diagnosed as having overt clinical depression are women, with reported proportions varying from 2.1 to 3.1 [4,248]. Genetic research has suggested that endogenous affective disorder may be transmitted as an x-linked dominant gene, thus giving women twice the vulnerability of men [165]. At the same time, ego psychology, sociological, behavioral, and animal models converge on noting the similarity between the learned-helplessness model of vulnerability to depression and stereotypic female sex role expectations [169]. While continued controversy in this area is likely to occur for some time to come, integrative models are appearing, and the attention given to the controversy itself is likely to heighten clinical attention to diagnostic criteria. At the very least, learned helplessness would appear to pose special hazards to persons biologically vulnerable to depression, while exclusive attention to social causes of their

psychodynamic reflections would run the risk of ignoring biologically treatable conditions.

While schizophrenia is a condition more likely to be diagnosed in men than women, the whole subject of the true prevalence of schizophrenia is considerably clouded. It appears likely that in American psychiatry there has been a trend to overdiagnose schizophrenia where bipolar affective disorder would now appear to be the more accurate diagnosis [80] (thus perhaps overrepresenting women among the listed hospital schizophrenic populations) and to overdiagnose schizophrenia in men relative to women in that the marginally functioning but quiet and non-violent schizophrenic, more often female, may never be hospitalized and thus not receive a diagnosis. (In other words, schizophrenia plus male aggressiveness may be perceived as more dangerous and therefore be more likely to result in hospitalization). Thus the true prevalence between the sexes is unclear and likely to remain so for some time to come. In Chesler's intriguing social-psychological model, depression is seen as a disorder consisting of exaggerated female sex role behavior, while schizophrenia in both sexes is seen as a disorder based on radical rejection of assigned sex roles [50]. While the clinical observation appears accurate — schizophrenic patients of both sexes are frequently conflicted about gender-prescribed behaviors and even basic gender identity — (I lean toward regarding this as a secondary symptom rather than a primary one). It seems more likely that the elaboration of sex differences and roles that our society (like others) has expected at adolescence (a time when many schizophrenics begin to experience especially severe difficulties) are sufficiently complex and unrealistic enough to make it harder for a person with a basic schizophrenic thought disorder to navigate the course. If this is true, a relaxation of sex role rigidities would not be expected to reduce the true prevalence of schizophrenia but might have the important effect of decreasing the magnitude of the adaptive task for schizophrenics (and others).

Alcoholism and Drug Dependence

Alcoholism has traditionally been regarded as a predominantly male disorder, although in women it is receiving increasing attention. Probably in the past, large numbers of alcoholic and drug-dependent women escaped public notice, because the woman's problem could be hidden in the housewife role more readily than in public employment. The problems of the woman alcoholic are surfacing today, with increased clinical and research interest both in the woman herself and in medical complications such as the fetal alcohol syndrome [175].

One series of studies suggests that there may be a biological reason for the somewhat lessened participation of women in social drinking [123-126]. Alcohol effects vary with the menstrual cycle, thus leading to somewhat less predictability of effect for women than men.

Treatment programs for abusers of street drugs have been targeted with somewhat more emphasis on the male offender. Undoubtedly this reflects a somewhat pragmatic attitude on the part of a society more keenly interested in self-protection than in the problems of the abuser: male abusers are more likely to support their habits by theft, while female abusers are somewhat more likely to support their habits by prostitution, a victimless crime that is more variably tolerated in different jurisdictions.

Abuse of prescription drugs is a more distinctively female problem and one of relevance to all physicians. Women see physicians more often and are more likely to receive prescriptions or psychoactive drugs than men. One study showed that in Illinois in 1976, over half of all women had taken psychoactive prescription drugs within the past year [154]. Concern is growing that physicians seeing women with psychological or psychosomatic problems related to the stresses of female roles may superficially treat these situations with drugs. Indeed physician-directed advertising encourages them to do so; one notorious advertisement for a widely used minor tranquilizer suggested its use as the proper treatment for a woman with a master's degree currently frustrated by the demands of her housewife-mother role. The practicing physician who is not a psychiatrist may lack time and experience in exploring role conflicts and life stresses of patients, but it is not too much to expect an occasional brief counseling session [49] and a knowledge of community resources for evaluating and treating such concerns. Not every such patient needs or wants a psychiatric referral, but a good community resource is able to make such a referral if it turns out to be indicated.

Women and Psychiatric Treatment

The field of psychotherapy research has developed expansively over the past decade and has received a number of major reviews [182,237,238]. Much of this work is pertinent only to specialists in psychiatry or psychology, but a few points are particularly important to every physician, and perhaps particularly relevant in the context of the treatment of women. Probably the most solid finding in the field is one that is at first glance disturbing: psychotherapy has the potential for doing damage as well as producing beneficial effects [31], under certain conditions that are at least partially known. While this is what would be expected of any powerful therapeutic agent, psychiatry has probably been hampered in applying

appropriate cautions by having only partial knowledge about those specific therapeutic conditions which should be cause for concern. Current feminist criticism has highlighted the following areas: sexual abuse of the therapeutic relationship is more common, and at least sometimes more devastating, than has previously been recognized [241]; problems in this area may be further compounded by the therapists' use of threats of various sorts to prevent disclosure [153,202]; the therapeutic relationship in a dyad may replicate rather than remedy the one-down position in which women frequently find themselves in life and marriage, encouraging the fantasy that an idealized relationship with a more powerful other is a better solution to life problems than taking autonomous action [50]; therapeutic theories have more often led to supporting rather than questioning stereotypic sex assumptions, with different standards of mental health for women and men [43], including the assumption that dependency, masochism, and passivity are normal for women and a tendency to treat assertiveness and aggression differently for women than men; women, especially when treated as collaterals to their children, may be harmed by a blame-the-mother tradition in clinical psychopathology (there is a considerably greater and earlier literature on schizophrenogenic mothers than fathers, despite lack of clear evidence that either is specifically responsible for the more serious disorders of their children); and realistic appraisals of the occupational hazards of the housewife role are lacking.

In addition there has been a considerable body of research on issues related to whether a woman patient should have a woman therapist. This work is reviewed elsewhere [181] for the psychiatric reader; the non-psychiatric physician should merely be aware of the issue. In making a referral, the physician should consider a woman therapist for a woman patient if the patient requests it and ask the patient if therapist gender makes a difference if she does not volunteer such a request. Therapist gender does not always make a difference in outcome but is more likely to be important if the woman patient is relatively young, neither married nor a mother, and is being referred for treatment of depression. The patient should always be advised that the fit between patient and psychotherapist is partly a matter of personal style and that a patient who is uncomfortable with the therapist to whom she is referred should feel free to seek another consultation.

CONCLUSION

A very large body of recent and important research data is now available, which must be evaluated and fed into the development of appropriate

theory about women. The data appear to offer considerable potential for an exciting enrichment of general psychiatric theory, research, and practice. For example, in a recent review of psychiatric research during the decade 1963–1972, Brodie and Sabshin reach the following conclusions:

One of the striking findings of the survey involves the paucity of papers on the social causes of psychiatric illness. Social psychiatric concepts had produced important formulations about etiology during the 1950's [70,109], and by the beginning of the 1960's it appeared that we were on the verge of developing new constructs to account for social factors in psychiatry. Quite clearly, these new constructs have not emerged between 1963 and 1972 and this void may represent a significant commentary on the past decade [41:316].

There are a number of reasons for believing that research in the area reviewed here may contribute in future to the breakthrough that Brodie and Sabshin had anticipated but not found in the 1960s.

The implications of sex-role type-casting for psychopathology or symptom expression are just beginning to be plumbed. As Dorhenwend and Dorhenwend note, in a comprehensive review of social and cultural factors in psychopathology [69], comparisons of the major psychiatric epidemiological studies have been difficult. Major questions of theory, which in some instances could turn on questions of fact, are left unresolved because of methodological problems. These problems include overlooking sex-role differences. For example, women are consistently shown as more likely to be diagnosed as neurotic; men are consistently shown as more likely to be diagnosed as sociopathic. But whether sociopathy is considered mental illness varies so greatly from study to study as to make results noncomparable. Widely used symptom scales (such as the twenty-two item screening instrument from the Midtown Manhattan study) [144] "are more representative of female than male modes of expressing distress." Clearly the kind of careful attention to sex differences that has been characteristic of the current work — both carefully looking for sex differences and attempting to pin down their sources rather than use stereotyped explanations and the careful scrutiny of alleged sex differences to see whether the data really support their existence — will be essential before the complex literature on social causes can be sufficiently clarified to yield grounded theory.

The current research includes much work on the distinctive events of the female life cycle, such as the biopsychological and sociopsychological aspects of menarche, sexual relationships, childbirth, lactation, early mother-infant bonding, and menopause. This is studied in relationship to other events of the female life cycle that are not uniquely female, such as education, employment, child care, adaptation to illness, bereavement,

and aging. Although many of these topics have been studied in previous research, there has been surprisingly little integrative work uniting them. The newer work will be important both in understanding etiology and pathogenesis of psychological distress in women and also in understanding women's participation in social networks that alleviate or exacerbate psychological distress in others.

For the first time, a large number of well-trained investigators are doing research on women; they are women themselves and have experienced a number of the life events under study. The issue is similar to that regarding studies of other minority groups: while no one would be likely to make a convincing argument that all of the research about a particular minority group should be done by members of that group, there are compelling reasons why much of it should be [229]. Researchers from a privileged group outside the subjects of study are at risk of having shallow conceptualizations, lack of empathic understanding of the salient variables, and perhaps a different axe to grind. Further there has been a strong criticism that research done from the outside is not as likely to be conceived or later used in a way that benefits the people inside the group in question. A persistent concern in psychiatric research related to social problems has been the considerable gap between research and application. Sometimes the gap may occur because the investigators are not particularly interested in implementation, sometimes because the research is too poorly conceived to merit application. The infusion of numbers of investigators who belong to the group whose ox is being gored is probably the best remedy to this situation and can be expected to result in better research and quicker dissemination and application.

It is possible that the current increase in the number of women entering medicine and psychiatry, and the rapid expansion of women's studies as a related research field, may yet contribute to the hoped-for transformation of psychiatry into a more research-oriented field [218,259]. This appears to have occurred already within psychology, where the great discrepancies between what women have experienced for themselves and what psychological theories say about women have acted as a powerful stimulus to research curiosity. Women who are learning not to accept an argument from authority when it refers to women, who are learning to demand to see the evidence, and review and gather it for themselves, may continue to carry these healthy attitudes into other areas of psychiatry. The result could only be stimulating and beneficial.

Before 1970, an APA task force on psychiatric aspects of family planning listed no women members [7]; an official APA journal published papers dealing with issues affecting women's lives, such as psychotherapy, family life, abortion, early child care, and the like, but had no women on the editorial board [29]; an NIH-sponsored conference on

menopause and aging published proceedings that listed twenty-five participants, all males [210]; clinicians who treated preponderantly women clientele lacked formal education or background in women's perceptions of treatment issues; research site visit committees and review panels often contained no women members. There has been a kind of (often unconscious) arrogance in the willingness of male professionals to tell women how to define their problems and lead their lives and, in parallel, a curious willingness of women to accept male definitions of women's needs. Today's climate, however, contains some important differences: since 1967, women not only have legal rights of equal access to professional education and advancement but increasingly feel a sense of responsibility for taking part in the groups and deliberations that define women, whether in research or clinical treatment.

Some applications of some of the current work may be made in ways that in retrospect will appear to have been unnecessary or misguided. In particular the current controversies among biological, social, behavioral, and intrapsychic approaches may be expected to yield to some degree to more integrative approaches. Over the next decade we may expect to see a sustained increase in the number of women doing psychiatrically related research, as well as research administration and evaluation — participating more equally in choosing the topics and determining what studies get funded. We should also expect a continued growth in research attention to areas particularly bearing on women's lives. We may hope to see clinical practice related to such areas as women's biopsychology, childbirth, child rearing, vocational issues, and marital relationships to be based increasingly on solid research findings rather than the translation into professional language of what is essentially folklore. Appropriate revision of theory should help increase the sensitivity of our third ears. Better attention to the mental health needs of boys, and the effective management of male—and female—aggression in a civilized society may be an important aspect of meeting the needs of women and society as a whole.

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32

Psychohistory

Gerald N. Izenberg

In a sense, all history is psychohistory. Men, as Marx said, make history, though they do not necessarily do so in circumstances of their own choosing; and insofar as they do make history, their intentions, beliefs, motivations, and emotions are essential to historical explanation. Historians have always relied in significant part on explanatory categories belonging to the realm of psychology. Why, then, has there emerged a special branch of, or approach to, history, labeled *psychohistory*? Traditionally the explanatory armory of historians has been drawn from the ordinary language of everyday life — either that of his own time and place or, in the best historical work, the time and place of his subject. Hunger, security, power, loyalty, idealism, faith, wealth, jealousy, ambition — these have been the usual terms of psychological explanation in history. As the social sciences developed in the context of modernization and secularization in the nineteenth century, new systematic approaches to social behavior furnished the historian with explanatory tools enabling them to probe more deeply. From Marxism came the idea of class interest, from other branches of sociology the notions of status concerns, occupational group needs, anomie, and so on. The advent of a systematic individual psychology that cuts below surface consciousness, revealing new facets of behavior hitherto taken for granted, illuminating previously unintelligible behavior, and explaining contradictions and inconsistencies in act and thought

could not fail to interest historians. Freud's discovery of the unconscious, of the role of repressed early childhood relationships in shaping patterns of adult behavior, of symbolic forms of expression and the logic of irrational functioning, provided historians with new possibilities for analyzing *res gestae*, the doings of men. Psychoanalysis made psychohistory possible.

The union of psychoanalysis and history, however, was slow in coming. Though psychoanalytic studies of historical personalities date back to the early years of Freud's work, in 1957 the president of the American Historical Association still called the integration of psychoanalysis into history "the next assignment" [24], and in 1971, two eminent historians assessing the relationship of history to the social sciences wrote that "psychological and psychoanalytical history is still in its infancy" [23]. The reasons for this apparent retardation are highly significant, for they have greatly influenced the forms that psychohistory has taken. Psychohistory is now a flourishing, if controversial, enterprise, but it does not simply involve the application of concepts taken from clinical psychoanalytic theory to historical explanation. Certainly such applications are one very important dimension of psychohistory. Yet however powerful a tool psychoanalysis has seemed to some historians, they deal with issues for which psychoanalysis was not designed and for which, in its standard clinical forms, it has no ready answers. In developing the use of this tool, psychohistorians have found that they can contribute to psychoanalysis as well as take from it.

A brief review of some of the issues faced by historians working with psychoanalysis can serve as a useful introduction to the different directions that psychohistory has taken. Because of its clinical origins, psychoanalysis was necessarily concerned with individual pathology. This creates two sorts of problems for historians. In the first place, pathology generally means the inhibition or breakdown of the social functioning of the individual. Although this is sometimes an important problem for historical explanation, historians are more often concerned with the explanation of historically efficacious activity — not necessarily creative activity in an honorific sense but activity that, while it may be a response to inner conflict, enables the actor to influence history. Perhaps even more significant, historians are most often concerned with large-scale or collective action and behavior — social change, political movements, wars, revolutions. A theory based on the nuclear family origins of individual behavior offers no clues for dealing with group phenomena or explaining the ability of a leader to acquire a following.

A second major issue for historians was the paradoxically ahistorical nature of psychoanalytic theory. Despite the fact that psychoanalysis is in a sense a historical discipline (it reconstructs a person's past in order to

understand his present behavior), clinical theory assumes the historic fixity of developmental stages within the individual psyche and the family. The deceptive diversity of manifest behavior is a product of the permutations and combinations of a relatively small set of biopsychic constants. Historians, however, are by trained professional instinct attuned to change and difference; they know that the structure of the family and the process of socialization are different over time and across cultures. They have great difficulty with the assumption that everyone traverses the same developmental phases and crises throughout history, and they do not see how, even if this were true, it could explain historical change.

There is a third, methodological problem, or rather set of problems. Classical psychoanalytic theory stressed the significance of the early years of life in the formation of adult character. These are, however, precisely the years for which there is usually little, if any, evidence for the lives of historical characters. Since it is impossible to put historical personages on the couch to elicit the kinds of evidence clinicians rely on, some historians have concluded that if the early years are where the action is, historians are necessarily in the dark. Even those who do not go so far raise the problem of the validation of psychohistorical hypotheses. What sorts of evidence can one use for understanding the psyches of the dead? Or more generally, what is the method of knowing in psychohistory?

Although these difficulties delayed the union of psychology and history, they also provided the spur to the kind of innovative thinking that has led psychohistory to a variety of fascinating developments. Psychohistory is not one thing. Historians and other social scientists interested in such problems as the nature of political leadership, creative activity in the arts and intellectual disciplines, collective phenomena such as witchcraft or movements such as Nazism, generational conflict, family structure, socialization, and historical personality structure have pioneered distinctive variants of a true interdiscipline.

INDIVIDUAL LIFE HISTORY

The first psychohistorical ventures were carried out mainly by psychoanalysts rather than historians. These ventures were, as befitted the clinical origins of psychoanalysis, individual psychobiographies. Their primary purpose was to vindicate psychoanalysis as a general psychology by displaying the role of clinically discovered syndromes — above all, at first, the Oedipus complex — in the lives of nonpatients and of gifted people. Freud pioneered this type of study with his famous analysis of the roots of Leonardo da Vinci's creativity, a dazzling display of psychohistorical reconstruction based on very sketchy, and questionable, historical informa-

tion [10,15,31]. His early followers pursued similar studies with a missionary zeal and narrowness that sometimes dismayed Freud. There were two basic problems with these early studies, apart from the tendency to speculate from too little material: an insufficient appreciation of the historical milieu of their subjects and a covert moral or ideological ambivalence toward them, which led to the kind of psychologizing reductionism long to be the bane of applied psychoanalysis — the treatment of all behavior and ideas as if they were nothing but manifestations of concealed psychopathology. The notorious Freud-Bullitt biography of Woodrow Wilson — which Freud, except for the introduction, did not write but in which his thought is evident — displayed both flaws writ large [15]. Two things were necessary before psychobiography could be something more than a catalog of evidence for pathological fixations. Psychobiographers had to understand the range of shared assumptions and possibilities of a historical period and milieu so that they did not attribute to individual idiosyncratic behavior what was characteristic of an age. They also had to develop, implicitly or explicitly, some working criteria for determining when and why to question the conscious or historically rational reasons that could be given for the behavior of someone who was not a patient and give instead an explanation in terms of unconscious determinants.

The first psychobiography to be accepted widely among historians avoided the pitfalls of the earlier works. *Woodrow Wilson and Colonel House* by Alexander and Juliette George [18] was a natural application of classical psychoanalytic theories, with their emphasis on individual psychopathology. It illustrated the attractions of a theory dealing with issues of authority and intrapsychic relations to authority figures for political scientists and historians interested in the motives and behavior of political personalities. It was thus the forerunner of a whole genre of psychohistorical studies of politics and personality. The Georges drew upon the work of the political scientist Harold D. Lasswell, a pioneer in the application of psychoanalysis to social science, who in the 1930s and 1940s developed a general psychological theory of motivation in politics [9,19,25,26]. From clinical material relating to both patients and nonpatients active in politics, Lasswell concluded that the chief motive of politicians was the quest for power, which derived from a strong and repressed hatred of authority in their personal lives. This hatred was displaced on to a public object and rationalized in terms of the public interest. Lasswell drew heavily on the theories of Alfred Adler, as well as of Freud, for his psychological model. This was an early example of the eclecticism of psychohistory in its search for useful theories. Over the years, much psychohistory has relied on innovations in clinical theory and on shifts in emphasis within psychoanalysis to provide new research frameworks.

Lasswell's hypotheses constituted a questionable general theory. Yet as a heuristic for individual biographic studies, they proved fruitful. The

Georges focused on a pattern in Wilson's behavior that traditional historians had noted and puzzled over but had been unable to explain. In all of his leadership roles — as president of Princeton University, governor of New Jersey, and president of the United States — Wilson eventually engaged into power struggles with powerful opponents in which his demand for their unqualified submission made it impossible for him to compromise, even to save the substance of his goals. The Georges traced this pattern back to Wilson's need to compensate for the self-esteem damaged in childhood by a dominating father who constantly humiliated him. To compromise meant for Wilson to be bested and humiliated once more by the authority to whom as a child he had always submitted and whom he unconsciously resented without being able to express his anger. We need not here evaluate the specifics of this explanation. Two aspects of the George's book, however, are worth noting. The Georges did not impugn the rationality of Wilson's goals; they addressed themselves rather to the exaggerated way in which Wilson idealized them and the contradictions in his behavior which led him nonetheless to repeated self-defeat. At the same time, despite the historical narrative form of the book, Wilson's concrete historical situation and background hardly entered into their interpretation. The issues of the day were seen exclusively as fodder for Wilson's intrapsychic struggles. Only the rationalization of his personal motives was interpreted both as a need to disguise his hostility to his father under a cloak of idealism and as a consequently intensified manifestation of a strict Calvinist upbringing, which forbade the use of power for personal gratification and insisted on its use only for altruistic social objectives and lofty ideals.

The work that perhaps first revealed the real potential of applied psychoanalysis to historians, and in effect launched the enterprise of psychohistory in its contemporary form, was Erik Erikson's *Young Man Luther* [12]. Not all ensuing psychohistory was Eriksonian, but many historians did find creative answers to the problems of psychohistory in his approach. More generally the historical seriousness of his work did much to make psychohistory respectable and inspired historians to venture on their own ways in psychohistory. Erikson was the first to integrate history and psychoanalysis in a meaningful way. As an example of contemporary psychoanalytic ego psychology, his work stressed not simply the unconscious impulses at the heart of inner conflict but the defensive and adaptive functions of the ego in dealing with it. As a result, he was able to examine behavior and ideas as creative and historically innovative solutions to psychological problems instead of merely reducing them to manifestations of id pathology. This stress on ego and superego structures meant that the psychobiographer had to take account of the historical contents of ego ideals, superego prohibitions and individual goals as integral to the way the historical subject experienced conflict and as the matrix within

which he worked out a solution. The psychobiographical subject was rooted firmly in his time and place, and these the psychobiographer had to know thoroughly. Finally Erikson focused on a period of life history — the identity crisis of late adolescence and early adulthood — for which there was generally more documentary material available than for the childhood period.

Young Man Luther was an ambitious and subtle effort to discover the psychological roots of Luther's social new theology. It dealt with the resolution of a conflict between father and son over the issue of the son's vocation and more generally of filial obligation, expressed and worked through in the language and concerns of contemporary theological debate. Luther transformed Catholic theology in order to provide an image of the Father that would enable him to bear the anger and rejection of his early father while accepting the paternal role of God submissively. The Lutheran God was not the mercurial father whose violent swings of mood were incomprehensible to the child; he was an absolute and angry God upon whose grace man was totally dependent but whose very anger was compassion for man's sinfulness.

Along with Erikson's clinical, theoretical, and anthropological work, *Young Man Luther* opened a new phase of psychobiography. Erikson's concept of the eight stages of human development, turning points in human growth at which events or choices can determine later life by the way phase-specific concerns are met [11], proved suggestive to historians, both descriptively and causally. The historian Cushing Strout, for example, employed the notion of the young adult's identity crisis in an illuminating essay on William James, both to explain James' difficulties with his career choice, which he made painfully and relatively late in life against the wishes of his father, and to reveal the psychological context of some of James' central concerns as a philosopher, notably determinism and freedom [33]. Another historian, Robert Williams, struck by the fact that a group of Russian artists he was studying made the key innovations in their work by radical shifts in orientation in their thirties and were all concerned at that point with the theme of immortality through creativity, suggested that the Eriksonian idea of a "crisis of generativity" could help to explain these developments [36]. As elaborated by other psychoanalysts in the concept of a midlife crisis, the notion of generativity conceptualizes a stage-specific concern with the value and permanence of a productive life's work at a point when adults have left youth behind, attained maturity and a settled direction for their lives, and begun to anticipate death.

Since the appearance of *Young Man Luther*, psychobiography has become increasingly sophisticated both in the direction of psychology and history. A number of historians began to inform themselves in great detail about contemporary clinical theory, either through intensive reading or

by undergoing some form of analytic training. They were thus able to extend the classical Freudian framework to include the most recent clinical discoveries and increase the scope and subtlety of their psychological analyses. The work of these historians represented applied psychoanalysis in that it drew its theoretical structure directly from the body of clinical work. But the application was based on careful and detailed use of historical sources and an integration of the historical dimension of socialization, character structure, and cultural ideals. Other historians, instead of drawing directly on existing clinical hypotheses, developed their psychological hypotheses out of the biographical and historical information available to them. In effect diaries, letters, recorded conversation, speeches, and other writings became an independent empirical source for psychological hypotheses.

Two examples will illustrate these different approaches. Exploring the roots of Theodore Herzl's Zionist concepts, Peter Loewenberg [27] discovered in Herzl's diaries and letters a grandiose messianic impulse to save the Jewish people from anti-Semitism singlehandedly. These fantasies antedated the Dreyfus case; they coincided with the failure of Herzl's marriage and in their original form were nonpolitical fantasies of rescue through melodramatic — and completely unrealistic — individual heroics. Basing himself on the obvious narcissism of these concerns and on the patterns discernible before and after the crystallization of Herzl's sense of mission, Loewenberg utilized certain clinically derived generalizations to argue that Herzl's charismatic politics and leadership grew out of a regression to narcissism, brought on by the underlying Oedipal conflicts that made his marriage problematic and the loss of love he suffered when it foundered. This hypothesis in turn cast light upon Herzl's later ideas and conduct as Zionist leader. At the same time, though Loewenberg only touched on the identification with Judaism that caused Herzl to choose this particular path for his injured narcissism, he pointed out how Herzl's social and ethnic position within the Austro-Hungarian empire strongly influenced his picture of what the ideal new Jew of the future would look like: the aristocratic gentleman who was the cultural ideal of the insecure Viennese middle class.

By contrast Rudolph Binion began his psychobiographical study of Lou Andreas-Salomé [3] with a classical psychoanalytic hypothesis about the determinative effect on her life and work of an early childhood wish. In the course of his research, however, he discovered that it was the trauma of her rejection by Nietzsche — a rejection he discovered that revised the previously accepted version of the episode — that underlay all her subsequent fiction, diary falsifications, and relationships with men, where Lou did the rejecting. The concept of the unconscious repetition of an adult trauma for the purposes of expiation, undoing or role reversal

was the key in Binion's highly original research on Adolf Hitler [4]. Reading back from peculiarly concrete but enigmatic utterances and references of Hitler as political leader, Binion concluded that Hitler, at age eighteen, had been present at the death of his mother, who had been under care of a Jewish doctor for cancer, and that this event had formed the nucleus of his deadly hatred for the Jews. Binion's research proved the former to be true and showed also that Hitler's mother, a terminal case, had in fact died of iodoform poisoning as a result of an overdose of the medication administered by her doctor. The trauma, however, was not activated until Hitler himself was poisoned by gas during World War I; then, in a hallucinatory episode, he believed himself charged with the mission of saving Germany from the poisoning Jews.

Binion's researches cast new light not only on the sources of Hitler's anti-Semitism but on the details of Hitler's conception of the Final Solution. At the same time they posed in the sharpest form, and for Binion himself, the question of the limits of psychobiography for the interpretation of history. Revealing the personal sources of Hitler's anti-Semitism and sense of mission did not explain his acceptance by the German people — the phenomenon of Nazism as a mass movement. This kind of question had haunted psychohistory even in Erikson's work. Erikson did not explain the enormous impact on so many others of Luther's innovative theological solution to a personal problem. There was a hint in this direction in Erikson's suggestion that Luther's conflict was conditioned by changing authority relationships within families and between classes created by new economic and social conditions, but Erikson did not follow the theme through. In a later book on Ghandi [13], he suggested that in solving his own crises, the charismatic leader is a representative figure of his time and thus attracts a following, but this was a circular and unhelpful argument. In trying to explain Hitler's success, Binion had to confront the issue of group psychology.

Psychobiographers have made a distinctively historical contribution to psychoanalysis by their awareness of the historical context of psychic conflict. In his biography of the German sociologist Max Weber, Arthur Mitzman [29] showed through a careful textual analysis that nonobjective, personal issues of autonomy vis-à-vis his father were relevant in shaping Weber's scholarly concerns and conclusions, as well as his explicit value commitments. But for Mitzman, an ahistorically conceived Oedipal conflict could explain neither the nature of the ambivalence nor the specific direction that Weber's work took. Rather the father-son conflict had to be understood in the context of German history. The intensified ambivalence that fueled the revolt, as well as the intellectual form it took, were determined by the partial success and partial failure of the father's generation in German politics. Similarly, in his provocative book *Fathers and Children: Andrew Jackson and the Subjugation of the American Indian*, Michael

Paul Rogin [30] explained Jackson's policy of Indian removal, and the standing he achieved from it, by a combination of individual and collective psychobiography. A posthumous son, whose forceful mother died when he was an adolescent, Jackson reacted to his primitive rage against separation anxiety by developing an assertive, explosive self, mistrustful of dependence and suspicious of the world. But in this outlook, Jackson was representative of the post-Revolutionary American, thrust into independence by political revolution and the changing order of economy and society as freewheeling individualism replaced a more traditional, protected patriarchal family structure. The American Indian represented a threat to the imperatives of the American ethnic of individuation, both because of his "non-productive" control over land needed by the whites for achievement and by his status in white imagery as a child of nature, whose ostensibly primitive state was a dangerous temptation to the intensified loneliness, vengeful disappointment, and separation anxiety of the uneasily independent white American. Indian removal thus satisfied economic and psychological needs by enabling whites to project their infantile longings and suppress them by destroying their external, symbolic representation. Much of Rogin's analysis rests on a careful reading of the image of the Indian in white folklore and popular culture; the consistency of the evidence and the clearly projective nature of the image are overwhelmingly persuasive. In his attempt to understand Jackson's motivations and appeal to others, Rogin has found one avenue of access to the group mind.

COLLECTIVE PHENOMENA

The work of Mitzman and Rogin indicates in different ways the need to understand the broader sociohistorical roots of individual conflicts that shaped the particular solutions arrived at by historical figures and conditioned the receptivity of a wide public. Rogin's book was based on the idea that large-scale historical events can arouse unconscious anxieties and repressed wishes in large groups of people similar or analogous to those created in individuals by intrafamilial events. Implicit is the idea that society stands in relationship to groups of individuals parallel to the family's relationship to the single individual. This familiar sociological idea was in fact not new in psychohistory. The first attempts to combine a psychoanalytic and sociohistorical approach date from the 1930s and 1940s. They were inspired by pressing contemporary concerns — the wish to understand the causes of anti-Semitism and Nazism — and they were undertaken by social theoreticians with a Marxist orientation. This marriage of Marx and Freud was believed necessary because although Freud's insights into the unconscious and its mechanisms were a crucial

addition to social theory, his unredeemably individualistic orientation made social analysis impossible.

The best-known works of this type are Erich Fromm's *Escape from Freedom* [17] and the contributions to *The Authoritarian Personality* by Theodore Adorno [1]. Fromm's book, which also owed a theoretical debt to the social psychiatry of Harry Stack Sullivan, put forward a thesis about the existence of human needs for primary group ties, which furnished a sense of basic security and belonging, and for individuation, a drive for freedom that is grounded in the individual's necessary emergence from a state of oneness with the natural world. When historical events created an imbalance between the two, leaving men isolated and unsupported in society, they strove to refashion a matrix of authority for themselves. This had occurred during the transition from feudalism to capitalism, and the resulting anxieties had produced Luther's submissive theology. It had occurred again in twentieth-century Germany, producing the willing self-abnegation before the leader who characterized Nazism. Adorno fused a more orthodox Freudianism with Marx. He theorized that modern anti-Semitism was a scapegoat phenomenon of the lower middle classes whose members were caught between a marginal and threatened status in bourgeois society and severe conflicts with insecure and consequently harsh fathers. Unable to understand the socioeconomic roots of their discontents, they identified with the violent father and projected their anger at him onto an ethnic group already typed by historical experience as not belonging. The Jew was thus an outlet for frustrated rage and the image of everything they feared for and in themselves.

Both books, especially Fromm's, have had wide impact in the social sciences, though both have been sharply criticized by historians and other social scientists. The general criticism has been that the Marxist orientation led to sociological generalizations about capitalism rather than close, accurate historical analysis, with the result that their work contains many historical errors and ungrounded assumptions. For these reasons, it has had little direct influence on historians. But the kinds of issues Fromm and Adorno addressed — mass behavior and collective irrationality — and their awareness that these can be explained only by the effect of large-scale social, economic, and political factors on psychology have been of central importance for psychohistorians.

Psychohistorians faced with the task of explaining collective phenomena in psychological terms have a fundamental problem: there is no well-established group or social psychology parallel to psychoanalytic theory. As a result they have developed a number of different approaches, in part based on theoretical predilections and in part determined by the nature of the specific problem and the historical evidence at hand. Some historians found that individual psychological needs and functions had

social manifestations just because they occurred in a large number of people at the same time. The concept of generational conflict, for example, while a sociological concept, also grew in part out of the realization that a whole cadre of youth faced the problem of liberation from parental authority at the same time. Other historians found that individual psychological needs had social counterparts in the collective or group dimension of character. Just as an individual is faced with the need to define himself in relation to his past and parental objects, so the group can be concerned with the problem of defining a collective identity in terms of its past and entities similar to itself. A third option has already been discussed and exemplified to some extent in Rogin's work: the fusion of some sort of sociological approach — often, though not necessarily, one of a Marxist orientation involving the effect of economic and social class factors — with history and psychology. Common to all of these approaches were two crucial assumptions: there are in human nature, whether in its individual or social manifestation, certain psychological constants, but they take on special historical significance and particular form only under concrete historical conditions and therefore cannot be dealt with in abstract, general terms alone. A fourth approach is even more radical. Some historians argued that the elements of character and conflict were not the same over time, that psychic needs and stages of development were historically specific. They did retain certain basic psychoanalytic concepts — the importance of parenting and early experience on adult character, of unconscious conflict — but argued that their contents were historical in nature. This last perspective has opened up a vast new terrain in psychohistory, the history of childhood and the family, with possibly important consequences for psychoanalytic theory itself.

Two examples of the first approach illustrate how it can illuminate both the general character of a stable sociohistorical structure and a more ephemeral collective event. In his study of the Puritan settlement of Plymouth Colony, John Demos [8] was intrigued by the degree of anger and the concern with honor and face-saving manifested in the extraordinary number of lawsuits for defamation launched in the colony — a result not to be expected from the common notions about Puritanism or the tenets of Puritan theology. Examining within an Eriksonian developmental framework the child-rearing practices of the Puritans, Demos found that they were extremely harsh toward the first manifestations of autonomy displayed by their children between the ages of one and two. The infant will was regarded as a sign of original sin that had to be crushed in order to subordinate man to God. This suppression generally coincided with the birth of the next child in the large Puritan families and the consequent loss of attention and affection by the older child. According to Erikson, this kind of excessive severity and loss in the second developmental phase

threatens a fixation on doubt and shame about the self instead of the harmonious development of individual autonomy. The result is a heightened aggressiveness directed at oneself or others — just the kind of aggressiveness that Demos found embodied in Puritan litigiousness. Demos' analysis was aimed at standardized child-rearing practices within stable primary institutions and their effects on character formation and secondary institutions.

In an article on the support of youth for Hitler, Peter Loewenberg [28] focused on the effect of one specific set of events on a particular generation. Wanting to explain why a disproportionately large number of youngsters joined the Nazi party, he pointed to the traumatic experiences undergone during World War I by the cohort born between 1905 and 1911. Deprived of their fathers, whom they proceeded both to replace and idealize, thrown back into regressive dependence on their mothers, subjected to material deprivation, this generation looked for a leader who promised to rescue them from a repetition of that situation in the chaotic conditions of the 1920s and early 1930s and who would embody the regressive rage and irrationality that their formative experience had produced. Loewenberg's thesis was based on the idea that a group born at the same time, suffering an external disturbance during crucial phases of development, will have common formative experiences that will dispose them to act in similar ways in later life.

It is not only experiences undergone by individual members of a group, however, that can produce psychic traumas; groups of people can experience anxieties with historical effects because of blows to their collective or group identity. Analysis of such experiences must be sensitive not only to the effects of social change or political events but also to the crucial role of cultural symbols and norms in the self-concept of members of a society. Rudolph Binion, in attempting to explain why Germans from every social class accepted Hitler with either active enthusiasm or passive acquiescence, paid special attention to the refrain of Hitler's public message [5]. An analysis of the themes of Hitler's speeches and addresses revealed that the centerpiece of his public appeal after 1924 was the policy of conquering *Lebensraum*, living space, in the east and that it was first developed by Hitler in explicit reference to the Russian territories won and then lost by Germany in World War I. This evidence, plus indications that Hitler's mass following began prior to the 1929 depression and in the wake of his public formulation of the *Lebensraum* policy, suggested that the German people followed Hitler because he promised them a reenactment of their traumatic loss in World War I. This group trauma was caused by the shocking suddenness of the defeat that came without prior hint and in the face of expectations of victory. The unconscious desire to repeat the original trauma represented the need to assimilate it by actually experiencing a defeat — hence the point-for-point repetition of the mistakes Germany

had made in World War I. Binion's group-psychology hypothesis offered an explanation for Hitler's success that was not dependent on Hitler's personal motives. His leadership was an implicit reciprocal agreement with the Germans: an opportunity to fulfill his unconscious desires in return for fulfilling theirs.

An example of the fusion of sociology, history, and psychoanalysis of the third approach will lead us to the perhaps furthest-reaching innovations of psychohistory. Historians and others have been much interested in the phenomenon of youth revolt in modern society. Saul Friedländer, a psychohistorian and author of *Histoire et psychoanalyse* [16], has discussed one of the most famous of the youth movements: the turn-of-the-century German Wandervögel, organizations of young men between twelve and nineteen, under youthful leadership, who rejected the city for the healthy, vital life of nature and country hiking. Sociologically this was interpreted as a youthful rejection of petit-bourgeois urban material culture. It has a number of features, however, that demand psychoanalytic interpretation. Its members, though explicitly rejecting the authority of fathers, eagerly placed themselves under the authority of leaders. They were obsessively concerned with sexual purity and rejected women, yet they celebrated the beauty and omnipotence of the young body and of physical nature generally. These patterns are familiar from the psychology of adolescence: a regressive narcissism, instinctual asceticism, a fear of instinctual chaos unleashed by the release from authority, and a need for an external agent of impulse control. There are, however, a number of things to note about this pattern. The youth movement was a distinctively modern phenomenon. It took place in the context of the intrusion of egalitarian ideals imposed by modern political and industrial society. It also took place in the context of a changing family structure in which the authority of a father increasingly absent from home was becoming more arbitrary in the face of his lessened role in socialization. These considerations indicate that the psychic structure represented by the youth movement was itself distinctively modern. The youth movements were manifestations of adolescence, but adolescence itself did not appear as a phase of development until relatively recently. If this is so, then psychoanalytic theory itself, as a theory of stages of development and their consequences, must become a historical subject.

HISTORY OF CHILDHOOD AND THE FAMILY

One of the results of the confrontation of psychoanalysis and history has been to raise the question of the historicity of the basic concepts of psychoanalysis. Not all of the impetus for the historicizing of individual development has come from psychohistorians or even traditional historians.

The groundbreaking work in the history of the family was that of Philippe Ariès. In his *Centuries of Childhood* [2], he argued that the concept of childhood as a unique stage of development is a relatively modern one, dating from the seventeenth century. Until then the child was seen as a miniature adult and treated correspondingly. The change came about as a result of a number of factors, including the development of an isolated, child-centered family and the intrusiveness brought about by the growing fear of the child's corruptibility. Other social historians have modified and amplified Ariès' conclusions, stressing the differences between premodern and modern families about the nature of family bonding and the role of the family in socialization. It is widely agreed that the experience of youth in premodern times was very different from what it has become. These conclusions are very significant for psychohistory, for they show that the body of contemporary clinical theory cannot be taken as a set of universal generalizations applicable to history. Lawrence Stone [32], for example, has argued that the kinds of infantile traumas Freud stressed were not operative in premodern Europe; the anal trauma of toilet training was unlikely to have existed in a population which lived amid its own excrement and hardly washed. In his *Parents and Children*, David Hunt [21] tested the Eriksonian developmental schema on the case of the upbringing of the infant Louis XIII of France. He found that although much of it stood up, Erikson's view of a concern for generativity manifested in care for children is a cultural artifact rather than a psychological constant. Historically children have often been neglected and abused.

One of the most fruitful developments in this direction has been the work of Lloyd deMause, editor of the journal *History of Childhood Quarterly* and *The History of Childhood* [6,7]. DeMause has demonstrated, with a number of collaborators, that childhood has a history, that adult attitudes toward children have changed since antiquity, and that these modes of parenting have produced important effects upon social, political, and religious patterns in the history of the West. For example, the wide-spread infanticide and abandonment of infants in antiquity and early Christian Europe have been connected with sacrificial religious themes, including the image of Christ as a sacrifice which can be joined by the believer to gain immortality. The more modern mode of intrusive parenting has been seen as giving rise to the compulsive personality of modern times. DeMause's more general hypothesis, which assigns the causal role in history exclusively to parental attitudes, is challenged by most social historians, who emphasize cultural determinants, such as religious beliefs, economic pressures, and state policies in altering parent-child relationships. Nevertheless there is ever wider agreement within the historical profession that an important part of the future of psychohistory lies in the exploration of the history of the family and childhood. Even historians who challenge the

universality of specific classical Freudian stages accept the developmental perspective and, with it, other psychoanalytic constants. Lawrence Stone, for example, believes that a large number of adults in sixteenth- and seventeenth-century England were emotionally stunted and had difficulty establishing warm personal relationships [32]. He attributes this in part both to the frequency with which infants were deprived of a single mothering figure during the first years of life by being farmed out to a succession of indifferent wet nurses and to the high death rate, which prevented too great an emotional investment in any human being. Perhaps one of the greatest contributions of psychohistory to psychology proper will be the determination of what in human development is invariant and what is subject to historical change.

CONCLUSION

In this brief overview, it has been possible only to indicate by a representative sample from a much larger body of work the scope, diversity problems, and prospects of psychohistory [20]. It is impossible to close, however, without some attention to methodology. Methodology is a thorny issue in psychohistory not only because of the continuing skepticism toward psychoanalytic thinking among historians but because psychohistorians are without the usual clinical sources of evidence and validation. Nevertheless the difficulties have been exaggerated. Certainly the psychohistorian must have a knowledge of psychoanalytic theory and the capacity to understand emotions and feelings, as well as historical skills. This in itself is a tall order, and there is controversy over how it can best be filled. Beyond this, many of the problems of inference, explanation, and validation are not radically different from those of traditional history. For individual life history as well as collective phenomena, there must be sufficient autobiographical, biographical, and other relevant data to enable the psychohistorian to discern patterns of behavior and modes of expression. This requirement may limit the number of possible subjects for psychohistorical investigation, but similar limits condition the possibility of all historical research. Psychohistorical interpretations are indicated where behavior and expression display distortion of reality, inconsistency with logic or with other norms held by the subject, contradictions between avowed belief and actual practice, or a singularity unexplainable by reference to contemporary behavior and usage [22,34]. The unconscious meaning, point, or cause of such patterns is learned by a combination of empathy, pattern recognition, and hypothesis, a combination based on self-knowledge and on knowledge of generalizations about the workings of unconscious processes which can be gained from experience, just as we

gain knowledge of the generalizations and patterns that ordinarily enable us to attribute motive to observed everyday behavior. A significant degree of validation can often be achieved by retrodiction and even a kind of prediction — finding evidence for the actual occurrence of an event whose influence is suggested by the subjective material, or finding other examples of a motive pattern that first evidence suggests informs the person's behavior. In many cases it may be difficult to validate hypotheses beyond the position that no other candidate for explanation is as plausible or even plausible: this is an accepted and legitimate standard of explanation. The methods of psychohistory are not easy, but they are neither arcane nor mystical, and they have borne tangible results. Those already obtained hold out even greater promise for the future.

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Creativity

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Creative people have been the object of study since the dawn of history. Often they have been misunderstood as eccentrics or even as political or religious rebels. In the Middle Ages, they were viewed with both awe and suspicion and even castigated as madmen. Great artists like Rembrandt and van Gogh never received recognition until long after their deaths.

The awe and mystique surrounding the wellsprings of creativity remain. Archeologists, geologists, anthropologists, and sociologists are preoccupied not only with the study of ancient civilizations [55,56] but with their artistic innovations as well. The paintings and bas reliefs of the cave dwellers, the engineering feats of the ancient Cretan and Romans, the symbolic expression in poetry and art forms realized in the ancient myths and fables handed down by word of mouth before man was capable of keeping historical chronicles — all bear witness to man's incessant urge for creative expression.

Despite the flourishing of the arts sponsored by the clergy and art guilds during and after the Renaissance, the meaning of creativity was not studied systematically. It was not until psychology and psychoanalysis began to explore the motivation of human behavior, the maturation and development of the mind, and the discovery and exploration of specific autonomous functions of the ego that a more specific and more scientific approach to the subject of creativity became possible.

In addition to the psychoanalytic point of view, researchers in the field of academic psychology, art history, aesthetics, and philosophy have devoted considerable effort toward further enlightenment on creativity. Arnheim [3], for example, stresses the importance of visual thinking in artistic creativity and refers to Freud's work on this subject in *The Interpretation of Dreams*. Arnheim's emphasis is the visionary attitude of the artist, which results in a creative person's thinking "deeply through what he observes so sensitively." His reference to this special visionary attitude is mindful of Greenacre's [22,23] accent on the heightened inborn perceptual sensitivity and awareness in the artist. Arnheim believes that thinking visually involves a symbolic representation. However, his thesis is limited to a phenomenological point of view and hence is of little aid in elucidating the creative process.

Henle [35] presents a cognitive approach, emphasizing that creativity requires problem solving. In order to arrive at a solution, the individual must ask the right questions. The methodology of problem solving to her encompasses both profound knowledge and ignorance of a given subject.

Feldman [14] expounds on the developmental approach and makes a distinction between a trait approach and a process approach. The former assumes that human beings are born with fully formed potential. From this point of view traits are immutable, and stable behavior is predictable in a wide variety of situations. In the process approach behavior is understood as an interaction between the individual and his environment. Feldman concludes that creative advances are more likely to evolve in milieus that encourage flexible educational advantages.

Drew [8], in her humanistic approach, provides a utilitarian motif: all creative people should have the betterment of mankind as their major goal. Therefore creative works should be evaluated from that standpoint. (In this respect she would provide a stifling value judgment approach to creativity and markedly limit its horizons.)

Hofstadter [36] explores creativity and dialectical phenomena and the role of imagination in creativity. According to him, in the act of creating, the individual appropriates (incorporates) the contents of the world in a novel form. Therefore the task of the creative imagination is to bring the shape of a new appropriation into view. The artist must give free rein to his imagery and thinking and permit it to move in any direction, shape, or form. He draws attention to John Dewey's significant insight into the relationship between emotion and artistic expression, stressing that a certain amount of tension is necessary for creative work; otherwise it would become mere craftsmanship. However too much emotion might interfere with creativity. (This coincides with the modern psychoanalytic structural and economic point of view.)

Slochower provides a historical, psychological, and analytic background to our understanding of creativity. He systematically reviews the contributions of the Freudians, Jungians, and Gestalt psychologists [61]. In addition to the early instinctual frame of reference, he draws attention to the great advances in our knowledge of ego psychology, which has refined our understanding of the creative process (see the works of Eissler, Hartmann, Kris, Greenacre, Niederland, Kanzer, Lowenstein, and Kubie). Most of all he had illustrated the crucial importance of symbolism in creative work, expressed in his own book, *Mythopoesis* [61].

Lionel Trilling [68] probably subscribes more to the point of view expounded by Kris and Kubie and would emphasize the importance of pre-conscious and highly developed autonomous ego functions that highlight the creative process. He does not believe that either neurosis or mental illness contributes to genius.

Arieti [1] stresses the blending of instinctual drive and ego processes in the creation of unique works. He describes the fusion of primary and secondary process thinking in the employment of metaphor. He believes, too, that both artist and scientist are able to extract similarities from dissimilarities in nature. This results in new categories and is one way of expanding knowledge. He lists several factors as essential ingredients to creativity: the cultural milieu, such as the Classic Greek period and Renaissance; the capacity for aloneness and inactivity that permits reflection; daydreaming; remembrance and reliving of past experiences, which are then reworked in art form; and nontraumatic stress or conflict, which is always present, in contrast to traumatic and neurotic conflict.

The methods employed for the study of creativity are probably as diverse as the hypotheses themselves. Many approaches have been attempted:

- 1 The attempt to analyze a novel, play, or painting by reacting to the contents as though they were free associations and then speculating from these productions about some of the underlying dynamics of the author's or artist's personality. This is a highly unreliable source. Examples are Philip Weissman's paper "Eugene O'Neill's autobiographical dramas" [71]; Eissler's *Hamlet* [12]; J. Glenn's "Twins in Disguise — A Psychoanalytic Essay on Sleuth and The Royal Hunt of the Sun" [19]; Stamm's papers "Shaw's Man and Superman" [63] and "Camus' Stranger: His Act of Violence" [65]; and in the field of art Freud's papers on Leonardo da Vinci and on Michelangelo's Moses [15].
- 2 The study of biographies and autobiographies (pathography). Examples include Niederland's penetrating analysis of Schre-

ber, Schreber's father, and the explorer Schliemann [48,50,51,53]; Eissler's monumental work on Goethe's and Leonardo da Vinci's genius [9,10]; Greenacre's writing on Swift and Carroll [24]; and Freud's own analysis of Schreber's memoirs [18] (see Kohut [40]).

- 3 The personal analysis of creative people, both artists and scientists. One study of gifted adolescents, made under the chairmanship of E. Kris [46], involved the analysis of several gifted artists who were then studied in group meetings.
- 4 The direct observation of children's play and fantasy formation.
- 5 Projective techniques [5,27]. An interesting study on creativity was done by Emanuel F. Hammer [27] by applying projective techniques to a group of highly gifted, artistic high school students. As a result of his studies, he drew some tentative conclusions that distinguished the "truly creative" individuals from the "merely facile". He wrote that the truly creative individual displayed a greater "depth and responsiveness, self-confidence, and determination, greater ambition and striving for power, personal uniqueness, independence, rebelliousness, and exhibitionistic needs, and greater range and depth of emotion."
- 6 Anthropological and sociological studies of diverse cultures.
- 7 Personal interviews with the creative artist, revealing the latter's own subjective, conscious impressions as to what constitutes his creative urge, as well as the devices he believes are involved in achieving his ultimate artistic expression [56].

THE CREATIVE PROCESS

In this chapter the terms *creativity*, *creative*, and *creative product* will connote any idea or expression in the fields of prose, poetry, visual art, musical composition, or science. A creative product represents something original, a new gestalt, a revision of old ideas in a manner never before conceived.

No discipline has yet been able to explain scientifically the phenomenology of the creative experience. Some psychologists like Kubie see little or no distinction between artistic and scientific creativity, whereas K. Eissler insists that it takes a greater genius to be outstanding in art than in science and that many mediocre minds have been able to achieve vast breakthroughs in science, which he does not believe true of great artists. Others like E. Kris have stressed certain phases that lead to spells of cre-

ative illumination. For example, Kris writes about the significance of inspiration, and the ultimate preconscious working through of the problems by means of secondary elaboration, akin to the final reworking of the latent dream thoughts into their manifest content.

Although some writers in the field [10] attribute qualitative differences between genius and great talent, there are no valid data to substantiate this point of view. Furthermore what constitutes genius and great talent depends often on subjective impression and cultural faddism.

A wide range of behavior seems to characterize the subjective experiences of artists and scientists. George Bernard Shaw worked compulsively and wrote a few pages every day. He was certainly stimulated by the culture of his day and his desire to bring about sociological reforms, but his style of work was neither frenzied nor frenetic. Others like James Joyce and Henry Miller tend to use a more primary process style and free association in their works. Although disciplined in the field of art, Michelangelo and van Gogh displayed a frenzied, incessant urge to work, sometimes for days on end.

In the field of science too, we are told that there are many different approaches to problem solving. For some scientists, like Poincaré, there is a sudden illumination of an idea that has been unsolvable for years. Some, like the astronomer Harlow Shapley [56], speak of their ceaseless careful plodding: "Nine tenths work and one tenth inspiration." Others refer to sudden spurts in creative efforts with long periods of apathy during the noncreative interval.

THE ROLE OF PATHOLOGY AND CONFLICT

Much controversy has centered around the role of instinctual vicissitudes, psychopathology, and conflict in the genesis of creativity. At one extreme are those analysts, typified by K. Eissler, who subscribe to the belief that genius is born of psychopathology. Eissler believes that it was Goethe's limited, circumscribed psychosis in adolescence that stimulated him to evolve an entirely new form of lyric poetry. Instead of remaining psychotic, Goethe was able to express his psychopathology in art form. Others have also insisted that every great artist is suffering from some sort of neurosis or mental illness that drives him to create. One notable example is the life and work of Vincent van Gogh, who painted frenetically over a period of ten years and became psychotic towards the end of his career. Slochower [66] has suggested that van Gogh's creative activity represented an attempt to overcome a psychosis; but finally even this failed, and the psychosis pervaded his ego and culminated in a suicidal act.

Another group, coinciding more with my own recent views, believes

that psychic tension and conflict, rather than neuroses, are significant motivating factors. It is not necessarily true that conflict between various agencies of the mind represents disease. It is rather that undischarged tension acts as a stimulus for the artist.

Ernst Kris postulated that the creative process occurs in two phases. The first is that of inspiration in which the artist is driven to create and permits his ego to regress (regression in the service of the ego). This regression serves to stimulate fantasies, which then erupt into the preconscious. Kris's tenet was that these fantasies are then worked over in the preconscious by utilizing various autonomous ego functions and secondary process thinking similar to the secondary elaboration of dream work. This finally culminates in a new synthesis, a true symbolic work of art. Kris's hypotheses then conceived of conflict, regression in the service of the ego, and the utilization of primary process and secondary process, with great emphasis on autonomous ego functions, to provide the style and form inherent in the work of creative genesis.

Kanzer, too, stressed the vital interrelationship between the unconscious id and the preconscious ego in creativity. "Art draws part of its sustenance from the dream, but only part; the remainder comes from a portrayal of reality that keeps attention riveted to the waking world" [38].

Waelder [69] and Kubie [44] insisted that neurotic conflict and the unconscious id might lead only to a neurotic distortion, if not actual inhibition of the creative process. Kubie, like Waelder emphasized the importance of the preconscious ego functions rather than the unconscious in the act of creativity; he believed that the main aim in therapy should be to relieve these people of their unconscious conflicts: "It has been my thesis that the preconscious system is the essential implement of all creative activity" [44]. In respect to the unconscious, Kubie stated further: "The unconscious is our straight jacket, rendering us as stereotyped and as sterile as neurosis itself . . . The goal to seek is to free preconscious processes from the distortions interposed by unconscious processes. The unconscious can spur it on. The conscious can criticize, correct, and evaluate. But creativity is a product of preconscious activity" [44:137].

G. B. Shaw's and Raphael Soyer's description of their own work habits veer away from inspiration and conflict and favor Kubie's hypothesis. For example, Shaw wrote a certain number of pages every day. Soyer also went to his studio to do some work every day — either paint or prepare for painting by cleaning his palette. Peter Schaffer described recently how he came to write *Equus* [58]. He was on a bus with a friend and driving past a stable in England when he was told about an adolescent boy who had blinded some horses. He then wove this brief account into an original moving drama.

THE SIGNIFICANCE OF FANTASY

Freud [17] early in his career was impressed with the artist's capacity to elaborate on universal myths and fantasies, which were divorced from the personal experience of the artist and presented in a form that appealed to his audience. The distinction between the artist and the ordinary human being, according to Freud, was the greater profusion of fantasies available to the former, and his capacity to rework these like a dream into forms that would provoke a sympathetic emotional response from his audience, thereby permitting the artist to achieve realistic gratification from his fantasies and gain a sublimated outlet for them. This contrasts to an ordinary mortal whose fantasies are consciously restricted, subjected to repression and then can reappear in a disguised form as pathological symptoms.

It is only after the artist permits himself the controlled regression Kris stressed that he has available the vivid imagery, contradictory thoughts, and the seething, irrational, emotional currents that are characteristic of the primary process and the unconscious. What distinguishes him from a sick person is that he maintains control over this primary process in his artistic regression. Should he lose control, his ego would be overwhelmed, and in place of creative art, an actual psychosis might occur. Van Gogh reached the epitome of his creative productivity in his painting *The Starry Night*, an exquisite mythopoetic synthesis in which he expresses symbolically his quest for immortality, his wish for recognition, and his struggle for dominance over his father. A small church symbolizing his father, the minister, is in the background. Van Gogh himself is depicted in the form of a tall cypress, reaching toward the heavens and surrounded by eleven stars. In so doing he identifies with the biblical Joseph's dream in which Joseph's eleven brothers are surrounding him and paying obeisance to him.

Creative people have an unusual capacity for imagery and fantasy. In fact artists seem capable of retaining the imagery and fantasies of youth and adolescence that the average person represses. Furthermore as Greenacre states [23], they have an unusually vivid store of family romance fantasies. She also considers the artist's unusual capacity for imagery partly constitutional. Niederland has vividly illustrated how congenital defects and early childhood traumata have strongly motivated the greatest creative geniuses and influenced their fantasies, which are later expressed in their art [52]. Niederland has also shown that many of the fantasies of artists, later woven into their work, are strongly influenced by actual childhood experiences. For example, he cites how Schreber's adult fantasies and delusions, expressed in his writings, evolved out of his father's sadistic treatment of him as a little boy [49].

THE OBJECT RELATIONS OF THE ARTIST

Along with artists' passionate need to be different exists a tendency toward aloneness. Most authors (Eissler, Greenacre, Arieti) argue that artists are protective of their need to be alone. They want to divorce themselves sufficiently from the world around them in order to dwell on their inner thoughts and fantasies and thus create. It is this tendency toward aloneness that has made many authors (Eissler, Bellak, Stamm) characterize creative people as highly narcissistic or egocentric, at times even schizoid, with poor object relationships. In fact, many have stressed that artists must be frustrated in their object relations in order to create, that if they are gratified in and too content with reality their creativity will suffer. According to these analysts, artists substitute their work of art for a love object.

Greenacre [22] believes that artists are endowed with a special sensitivity so that the "perception of objects and the relationship to them becomes endowed with a multiplicity of allied kindred forms," which she terms the *collective alternates* to the original objects. Eissler, in his book about da Vinci [9] states, "The energy flow into the object relation would be diverted from the artistic process."

My own clinical material and study of such creative greats as Shaw, van Gogh, and Gauguin lead me to conclude that creative artists are highly narcissistic and have a marked hypercathexis of their work, which inevitably leads to brittle, unstable object relationships. It is also true that many artists, poets, and musical composers during states of ecstatic passion for a loved one have been inspired to express their ardor in art form. The question has been raised whether sexual abstinence or frustrated love is a necessary prerequisite for creativity [12].

THE SEARCH FOR IDENTITY, IMMORTALITY, BIRTH, AND REBIRTH

These constitute a most significant unconscious motive for the creative person. In many such persons there is the feeling of uniqueness, of being the exception, which is reinforced either by unfortunate environmental traumata [52] that make them feel apart from others (like van Gogh) or by fortuitous events (as with Goethe, who, as the oldest surviving child, witnessed the death of several siblings). Suffice it to say that as Greenacre has indicated [23], creative people have an unusual breadth and depth of family romance fantasies that convince them of their uniqueness and stir their drive toward godliness and creativity.

Van Gogh, feeling like a total outcast, found in the expression of his art a way toward achieving his identity. Shaw also felt like an outcast in

his own family. His mother was constantly catering to his two sisters and devoting herself to voice lessons, leaving Shaw alone to identify with his alcoholic father. In these surroundings Shaw unsuccessfully strove for recognition from his mother. In his plays we constantly witness in disguised form the deployment of his hostility toward women through his witty barbs. From early life he was determined to be a maverick. In his striving to protest his uniqueness, he was constantly seeking to gain recognition, to establish his own identity and niche for immortality.

Identification is also an important tool in the furthering of creativity [46]. The ego ideal established in latency is greatly reinforced in adolescence. Many young children seek out older men and women to identify with and to emulate. Shaw strongly identified with his mother's love for music. He attended her weekly soirées and listened to her sing her favorite opera, *Don Giovanni*. It was not by happenstance that one of his greatest plays, *Man and Superman*, was a variation on the theme of Don Juan. An internationally known actress discovered in analysis that one of her greatest incentives to act stemmed from her identification with her father, a world-famous impresario. As a little girl, the only way she could gain attention from him was through her acting.

In every artist the wish to create is a substitute for the wish to give birth or be reborn. Eissler speaks of the bisexuality inherent in Goethe's creativity and Freud [17] of the child's gift to his parents. This was poignantly illustrated by a poet, who, in his final hour of analysis, presented me with a poem he had just written. In it he announces his departure and his rebellious separation from me: "torn from his womb like a newborn crawling from his shell" [67].

CREATIVITY AND SUBLIMATION

A much-discussed subject is the relation between creativity and sublimation and the relative importance of "deinstinctualization" in the ultimate act of creating [45,64]. If one defines sublimation in terms of a socially useful goal, then any creative work in art or science that contributes to such an end might be defined as a sublimation (keeping in mind that what might be considered useful in one culture could prove totally destructive to another during the same or a subsequent period). Hartmann, Kris, and Loewenstein [28,32] have stressed the importance of neutralization of aggression and libido in achieving true sublimation. Arlow [2] has emphasized that creative activity must be autonomous and displaced from the original spheres of conflict.

Others like Greenacre, Slochower, and Niederland subscribe to the idea that in almost every creative act one fails to find such complete neu-

tralization of underlying drives and freedom from underlying personal conflict. What seems to be closer to the truth among highly talented people is that they are able to utilize displacement and symbolization in their art and translate their own personal experiences into more abstract language. An example of this is George Bernard Shaw who "struggles towards sublimation in *Man and Superman*, but he snarls through the figure of Tanner and devours nice Anna. His so-called superman, intellectualized and de-instinctualized, is only a figment of his imagination. These very characters reveal untamed instinctual residues. . . . Shaw's élan vital is made of stronger stuff than neutralized energy. It springs from the will to create, procreate and to survive. Primitivization is extant everywhere in his writing and in his life — even if . . . it is teasingly disguised in her verbiage" [63:88].

COMMUNICATION AND CREATIVITY

Although it is true that most creative people strive for recognition and immortality through their work, the importance of communication with the world does not seem to be of such primary significance as Greenacre and Beres would have us believe. Beres has written, "When we turn to artistic creation we find that many writers on aesthetics . . . consider communication to be an essential component of the creative art" [6:409] and, again: "The art of creation implies a need to externalize, to objectify and to communicate" [6:416]. Eissler and I take exception to this point of view.

It is suggested that the work itself becomes an end in itself. The audience is only of secondary importance. The artist in love with his work provides his own audience. This heightened exhibitionism and voyeurism certainly play a role in communication, but the discharge of these component drives is achieved by the artwork itself. The autoerotic, pregenital aspects seem to transcend by far the secondary motive of communication with an audience. For example, a patient recalled that as a child of five, he would awaken every morning and walk to the door of his parents' bedroom. While ostensibly listening to his radio, in actuality he gave vent to his primal scene fantasies. As an adult he became eminent in the field of tape recording, thus sublimating his primitive scopophilia. To look and to listen had become a passion that had to be discharged. His audience was of secondary moment.

Perhaps even more germane to artistic communication is the symbolic character and aesthetic ambiguity inherent in true works of art. Kris writes: "All words exhibit the symbolic character to a greater or lesser degree. All occur in multiple contexts in which differing responses are evoked" [43]. And later: "Now the potential of a symbol contributes to a

specifically aesthetic experience only if the interpretation of the symbol evokes the resources of the primary process. It is a commonplace that communication, of whatever sort, requires a sharing of interests, knowledge, and experience. What is being said here is that aesthetic communication requires as well a sharing of psychic level [43:255]. In other words, the artist must strike a responsive chord in his audience, and the audience in turn must be stimulated to recreate the work by achieving the proper psychic distance from it.

WOMEN AND CREATIVITY

Are women less creative than men? The caption of male chauvinism is nowhere more justified than in this false belief. This point of view is reflected by Eissler [10], who unequivocally states that the dearth of geniuses among women is a biological given. This position cannot be substantiated. There are great artists such as Mary Cassatt, Grandma Moses, and Käthe Kollwitz; outstanding writers such as Elizabeth Barrett Browning, George Sand, Virginia Woolf, and Willa Cather; scientists such as, Madame Curie; and psychoanalysts such as Anna Freud, Phyllis Greenacre, Margaret Mahler, Edith Jacobson, and Melanie Klein.

Many women have never been afforded the opportunity to create outside of the home. There has undoubtedly been a cultural bias in respect to their creative output. There has been also a cultural bias on the part of men in the acceptance of women in the field of politics and in the professions of law, medicine, and engineering. The fallacy in thinking that women are less able to sublimate and create is scientifically unsound and reaches such extreme proportions that some consider the artistic creativity in women as due to the masculine component in their makeup. How inconsistent this is is borne out by the psychoanalytic understanding of creativity, especially since the creative process is equated with the wish to give birth, certainly not a masculine attribute.

THE EFFECT OF THERAPY ON CREATIVITY

Many artists fear that the cure of their emotional ills will destroy their drive and potential for creativity. There is no scientific evidence, clinical or experimental, to suggest that therapeutic success destroys creative productivity.

The will to create and the act of creating become an inner force, a way of life. What is far closer to the truth is Kubie's point of view that therapy, when successful, can remove the pathological distortions that inhibit crea-

tivity [44]. Much of this confusion rests on the erroneous assumption that psychopathology rather than psychic tension is one of the motivating forces for the creative process.

THEORY OF CREATIVITY

Any stress or conflict of an intersystemic or intrasystemic nature among the various agencies of the mind acts as an unconscious motive for creativity. This unconscious source is usually of instinctual drive origin (not necessarily neurotic). It is this conflict or tension that provides the driving force to create. Should the conflict be too intense or overwhelm the ego, the creativity will cease. This may explain why van Gogh, driven by conflict, attempted to ward off his psychosis by discharging his pent-up libido and aggression through his art, but ultimately his ego was overwhelmed by his psychopathology, and he succumbed to psychosis. His art might be said to have acted partly as a defense against his illness. In certain instances, as in the case of Goethe or Thomas Mann, even a neurotic or psychotic predisposition, if relatively circumscribed, may act as a stimulus toward creativity, provided it does not invade too many ego functions and destroy creative activity.

Conflict is only one factor in creativity. In addition creative people have at their disposal heightened sensory modalities, including an exquisitely sensitive capacity to perceive surroundings, translate them into fantasy, and then rework these fantasies through various preconscious autonomous (conflict-free) functions of the ego, such as linguistic and symbolic expression to achieve an original synthesis. In addition artists are capable of using their regression into fantasy in a controlled way; they therefore have available the flexible interchange and fusion of both primary and secondary process.

It would be both naive and overly simplistic to attribute creativity to either instinctual drive derivatives or to the operation of the preconscious alone. Each plays a crucial role and must blend with the other to produce an original work. Psychopathology itself is not the source of creativity. When it is controlled and of minor degree, it may function as a motivating force and is invariably expressed in the artwork in disguised mythopoetic form. When too prominent, it tends to overwhelm the ego, and creativity ceases.

The argument of unconscious versus preconscious is anachronistic. No creative giant can have the urge to create without employing his instinctual (affective) reservoir. On the other hand, these drive derivatives must be welded into final shape by the tools of the preconscious.

Creative expression is motivated by conflict, invariably driven by instinctual tension, nurtured by the inheritance (and development) of hyper-

acute sensory modalities which have become ingrained attitudes through habit (secondary autonomy). Creative expression can then become a vehicle for the discharge of tension on all levels subserving instinctual demands, secondary autonomous functions, defense functions, and both the reality principle and pleasure principle . . . It is thus suited to Waelder's model of multiple functions . . . The one common denominator for creative people is their drive, their incessant need to express themselves.

The energetic force in many instances remains primitive, at times almost untamed. It would probably overwhelm the ego were it not discharged and dissipated via the creative art itself. [64:94-95].

It is this tendency, the capacity for a symbolic mythopoetic synthesis, that represents the artist's unique contribution, his ability to abstract and depersonalize — in such striking contrast to the psychotic and neurotic who personalize and concretize their fantasies. Perhaps we should refer to the sublime partial taming of instinctual drives rather than a clear-cut deaggressivization and delibidinization of them. Finally, all great works of art are endowed with a panoply of aesthetic ambiguities that stimulate unconscious resonance and empathy in the beholder.

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