

***Sociocultural Roots
of Mental Illness***
An Epidemiologic Survey

TOPICS IN GENERAL PSYCHIATRY

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John J. Schwab, M.D., and Mary E. Schwab, M.D.

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An Epidemiologic Survey***

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*To the two persons who, in different ways,
inspired, befriended, and helped us*

Jules H. Masserman, M.D., and Ruby B. Schwab

Foreword

For the past decade and more, American psychiatry has been at sea on the adventurous if uncontrolled odyssey of community psychiatry. The voyage has often coursed through uncharted oceans, and for many the purpose and destination of the journey have been obscure. Even among those whose sights are clearer, there is growing concern that the ship will be becalmed by inadequate funding or run aground on the shoals of bureaucratic anarchy. For all of these voyagers this volume should come as a welcome compass.

The authors' review of their subject is encyclopedic. They have not only traced the origins of modern concepts and studies back to their historical roots, but have drawn their material widely from the work of investigators throughout the world to illustrate current trends and problems. The novice will find their discussion of epidemiology a clearly-written and useful introduction to one of the scientific foundations of social psychiatry, and novice and expert alike can profit from their thoughtful and critical assessment of basic terms and concepts, including illuminating chapters on stress, genetics, psychophysiological disorders, and cultural psychiatry. The volume ends on a personal note as the authors present their views of the current state of social psychiatry and suggest ways in which its theoretical structure might be strengthened.

Too often the plight of the individual is overlooked in the concern with impersonal numbers and surveys that preoccupy epidemiologists and social scientists. It is reassuring to find, therefore, that the authors never lose sight of the fact that the theory and practice of social psychiatry have as their ultimate goal the mental health of individual human beings. This is at the heart of the message they bring to their colleagues and students. If the message is heard as clearly as it is set forth in this admirable volume, there is hope that community psychiatry will end its stormy voyage in a safe and permanent haven.

John C. Nemiah

Boston, Massachusetts

Preface

Historically, interest in social psychiatry rises during periods of accelerated social change and societal turmoil. In the last 25 years, vast technological developments, particularly in communications and transportation, the concomitant massive growth of the world's population, and national and international political and economic forces have altered the character of our community, family, and personal lives. Urban decay, ghettoization, and the flight to the suburbs are transforming the nature of our communities. And traditional family bonds are changing and loosening, as evidenced by the high divorce rate and semiabandonment of the elderly. Rising suicide, homicide, and other crime rates alarm scientists and public officials and shock the ordinary person whose growing fear of danger impels him to live defensively and tentatively. These changes require adjustments and adaptations by groups and individuals. The resurgence of social psychiatry since World War II reflects a greater public awareness of the problem of mental illness and fears that the social environment is exerting a deleterious influence on the emotional well-being of the members of our society. As Voltaire said, "Every man is the creature of the age in which he lives."*

Concurrently, psychiatry is in the midst of an identity crisis. As a profession it is accused of being an ineffectual and perhaps even an unnecessary medical specialty. But, providing care for the mentally ill is a nationwide problem that threatens to exceed the capabilities of our human and material resources. The great hopes for the Community Mental Health Movement have been succeeded by a sober realization of its inadequacies and by despair about its future. Deinstitutionalization of the chronically mentally ill has become a national disgrace. And the high rate of recidivism attests to the crisis in aftercare and our apparent inability to develop a coherent, integrated system for caring for the mentally ill.

In our daily work we are seeing a growing number of seriously disturbed young "borderline" patients whose personality deformations and

* In Seldes, G.: *The Great Quotations*. New York: Lyle Stuart, 1960, p. 714.

mental illnesses have a malignant character—typified by hostility and destructiveness directed toward self and others. It is difficult to categorize these patients according to our accepted diagnostic criteria and nomenclature. We wonder whether their demonic aggressive symptomatology, often with its paranoid overtones, mirrors the character of our era.

Consideration of the drastic social and technological changes, involvement with psychiatry's troubled status, and concern about patients and their families stimulated us to write this volume. It is intended to provide a synthesis of social psychiatry and epidemiology for students, psychiatric residents, and our colleagues in many fields. Since the results from epidemiologic studies are social psychiatry's scientific data base, we have attempted to review and summarize the findings from many of the important investigations during the last 200 years. We have tried to place them in a historical context and view them in a perspective that includes the sociology of knowledge, a perspective that enriches the historical method.

Most volumes of this type—and this one is no exception—reflect the authors' selective choices and biases. Undoubtedly, we have omitted or not given sufficient credit to certain investigators and writers who have made distinctive contributions to the fields of social psychiatry and epidemiology. Our biases and other factors influencing the selection of the source material emerge; for this we make no apology. But we do hope that our summaries and evaluations of the investigators' works have not been unfair or erroneous.

The first two chapters offer the reader an overview of social psychiatry, particularly its development, scope, and status, as well as reasons for renewed interest in the field. In Chapters 3 to 6, we present some of the fundamentals of psychiatric epidemiology essential for an understanding of the investigations reviewed in the succeeding chapters. Chapter 7 deals with psychiatric epidemiology in the nineteenth century. Then, in Chapter 8 we discuss the manifold problems with the concepts and definitions of mental illness that handicapped investigators in the past and continue to present formidable obstacles to progress in this field. In Chapters 9 to 12, we review many of the epidemiologic investigations conducted in the twentieth century and, particularly in Chapter 10, look at the changing directions in the field—from descriptive to analytic epidemiology. To give the subjects of social psychiatry and epidemiology a proper balance, in Chapter 13 we have included a brief summary of the major findings from the genetic studies of mental disorders. In Chapters 14, 15, and 16 we discuss the subjects of stress, psychosomatic disorders, and cultural psychiatry to enlarge the scope of the volume. In Chapter 17 we present what we think are salient findings in social psychiatry and epidemiology and consider pressing issues confronting those involved with mental health and illness. Finally, in the last chapter, we look at the need for a theoretical

basis for social psychiatry, review in résumé form some of the conceptual models used by other investigators, and outline our thoughts about a model that encompasses consciousness-personality-behavior.

One of the most pleasurable tasks in writing is to acknowledge the contributions and help given by others, though we are well aware that such acknowledgments are inadequate. We are especially grateful to Mrs. Alberta Berger who worked unstintingly with us. She not only typed and assisted with the editing of the numerous revisions of the manuscript, but also made significant contributions to improve its content and accuracy. Mrs. Samantha Wellbrock worked overtime on many occasions in order to complete the preparation of the manuscript. We are grateful to Ms. Sherri Chandler who had the tedious task of searching the library for numerous needed references. Mrs. Helen Russell typed the final manuscript; we appreciate the meticulous effort she gave to this tiring chore. Finally, we wish to thank our colleagues on the faculty and staff of the Department of Psychiatry and Behavioral Sciences at the University of Louisville School of Medicine for their help, and particularly, for their understanding and tolerating the pressures and worries felt by the senior author. Dr. Danielle Turns, associate professor in the department, reviewed the manuscript and made many needed scientific corrections.

J.J.S.
M.E.S.

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It goes without saying that the picture of man that science presents to a bewildered and downcast public must be truthful. But that does not mean that it turns him either into a beast or into a computer. On the contrary, what makes the biological machinery of man so powerful is that it modifies his actions through his imagination: it makes him able to symbolize, to project himself into the consequences of his acts, to conceptualize his plans, and to weigh them one against another as a system of values. We are the creatures who have to create values in order to elucidate our own conduct and to learn from it so that we can direct it into the future.

—J. BRONOWSKI in *The American Scholar*, Autumn, 1969

1

The Social Psychiatric Setting

Human philosophy, or humanity, hath two parts: the one considereth man segregate or distributively: the other, congregate or in society.

—FRANCIS BACON¹

How these two fundamental aspects of the human condition—man segregate and man congregate—conjoin to influence the emotional well-being of persons and groups is the essence of social psychiatry. Despite some controversy about its status and some continuous conceptual and semantic confusion, interest in social psychiatry has been growing recently, especially since the early 1950s. It received an impetus from the social concerns generated by the disruptions of World War I, the Great Depression, and World War II. Historically, interest in social psychiatry stems from the age-old belief that mental illness is a product of civilization, a viewpoint that was expressed by the ancients—Democritus in the fifth century B.C. and Lucretius 400 years later. From early on, astute observers of the human condition have recognized that the individual and the collectivity are inseparable and that man's mental state is influenced by what is happening to mankind.

Social psychiatry is a three-legged creature; it has one foot in psychiatry, one in the social sciences, and one in epidemiology. Its scientific endeavors are based largely on: (1) psychiatry's concern with understanding motivation and treating disorders of thought, mood, and behavior; (2) the social sciences' studies of how social organization and cultural attributes influence the definition of mental illness, the setting in which it arises, and provisions for patient care; and (3) epidemiology's attention to the relationship between disease and differences in populations and living conditions.

In this chapter we will trace the development of interest in this somewhat elusive and sometimes uncertain branch of psychiatry and point to reasons for fluctuating interest in it during the last 200 years. Then we

will look at some current conditions that are stimulating a resurgence of interest in the field and offer a background for understanding the scope of social psychiatry, its problems, and its relevance in our contemporary society.

In the early decades of the nineteenth century, psychiatry emerged as a medical specialty concerned primarily with the wretched, deplorable conditions in mental institutions. In 1917 Kraepelin² stated: "During the eighteenth century the plight of the mentally ill was shocking almost everywhere in Europe. We know that they were generally handled like idlers, vagrants and criminals; the punitive laws to which they were subjected were rarely administered humanely." In 1784 Pinel³ reported that 57 of 110 patients died in the *Sâlpêtrière*. And in 1803 Reil⁴ wrote: "We lock these unfortunate creatures in lunatic cells, as if they were criminals. . . . We keep them in chains in forlorn jails . . . where no sympathetic human being can ever bestow on them a friendly glance, and we let them rot in their own filth. Their fetters scrape the flesh from their bones, and their wan, hollow faces search for the grave that their wailing and our ignominy conceals from them."

In the 50 years from 1775 to 1825, a number of converging social forces gave visibility to these conditions and provided impetus for the birth of psychiatry. The sentiment "humanitarianism" was becoming a part of the consciousness of the era. Kenneth Clark,⁵ in calling this "the greatest civilising achievement in the nineteenth century," points out that the humanitarian outlook had been primarily an individual attitude prior to that time. Other sentiments—"liberty, equality, and fraternity" and belief in the dignity of man—pervaded the sensibility of the age, which was expressed through the romantic movements and dramatized by tumultuous sociopolitical events.

The stage was set for reform, changed attitudes toward the mentally ill, and new, humane treatments. In 1774 the British Parliament passed the Act to Regulate Madhouses and established the first psychiatric case register.⁶ And Pinel's unchaining of the fettered inmates in the *Bicêtre* in Paris in 1793 was a decisive event. In 1820 George Man Burrows⁷ noted that more enlightened views of mental illness were developing. George III's tragic mental illness revealed that neither rank nor virtue exempted a person from "the greatest of all earthly afflictions—mental derangement," arousing excitement about mental illness and increasing sympathy for its victims. Burrows stated: "The zeal of the philanthropist was awakened to the pitiable situation of lunatics; and the attention of the learned was directed to a malady, evidently but little understood."

The turbulence of the era, highlighted by the American and French revolutions, sparked social scientists' questions about the nature of society, its economic future, and the fate of man. In the 1750s Rousseau⁸

extolled the “noble savage” and indicted society as the cause of social evil, including mental illness. In 1776 Adam Smith’s⁹ classic work, *The Wealth of Nations*, outlined capitalism’s fundamental principles and expressed forebodings about the eventual tragic consequences of excessive self-interest. In 1798 Malthus¹⁰ predicted that the population would outgrow the resources necessary to sustain it. Immanuel Kant, the towering intellect of the age, designated anthropology (of which psychology was an essential part) the scientific study of man. And sociology, an offspring of history and philosophy, developed as a discipline. Thus, the social sciences emerged as disciplines concerned with the nature of society and the ways in which social processes and human beings influence each other.

The Industrial Revolution was transforming society. Hundreds of thousands of men, women, and children migrated from the countryside to work in the newly burgeoning cities. Their deprived, bleak lives have been described by Dickens, and the horrors of the age were expressed simply and vividly by Burns,¹¹ who, after passing one of the new, large mills, wrote: “We cam na here to view your works,/In hopes to be mair wise,/ But only lest we gang to hell,/It may be nae surprise.”

Western society was undergoing accelerated social change. Long-standing political systems were being shaken or overturned and the growth of the new mercantile classes drastically altered the traditional social structure. The population increase that had prompted Malthus’ historic work brought fears of overpopulation, impelling emigration from Western Europe. Many of the fathers of modern psychiatry—Pinel, Esquirol, Reil, Griesinger, Tuke, Brigham, and Earle—advocated the moral treatment of the insane and expressed apprehension about whether turbulent sociopolitical events and unfavorable economic conditions were adversely affecting the mental health of individuals and groups.

The results of early epidemiologic investigations heightened concerns that mental illness was increasing, but revealed little or no new knowledge about its cause and treatment. For example, in 1810 Richard Powell¹² reported from studies of the psychiatric register that insanity had increased in Britain in the ratio 100:129 between 1775 and 1809. Burrows¹³ studied the same register for the period from 1775 to 1819, but by controlling for population growth, demonstrated that there had been only an apparent—not an actual—increase in the number of the insane. He noted, however, that the number of admissions had fluctuated during this time. For example, he found increased admission rates for the period from 1800 to 1804 and attributed this to the failure of the harvest in 1800 and the ensuing “extremity of distress and suffering.” This relationship between increased admission rates and economic conditions has been observed repeatedly and is of fundamental importance in social psychiatry. Burrows concluded that the apparent increase in the number of mentally ill between 1775 and 1819

resulted from the growth in population, the excited interest in “insanity,” and the improved facilities with more precise record keeping.

In the first decades of the nineteenth century, the social climate seethed with emotions aroused by the American and French revolutions. The great psychiatrists of the era chronicled that excitement. Benjamin Rush¹⁴ wrote: “The excess passion for liberty, inflamed by the successful issue of the war [American Revolution], produced . . . a species of insanity,” which he termed “*Anarchia*.” And Pinel¹⁵ stated that the storms of the French Revolution stirred up “tempests in the passions of men, and overwhelmed not a few in a total ruin of their distinguished birthright as rational beings.” Thus, we can see that psychiatry developed as social psychiatry in a setting marked by increased humanitarian concerns, socio-political turmoil, and fear that societal unrest was producing mental illness.

But interest in social psychiatry has fluctuated widely during the past 200 years. The first few stormy decades of the nineteenth century were followed by a relatively long stable period in European history that lasted until World War I. During the latter part of the nineteenth century, interest in social psychiatry faded while psychiatry developed as a clinical specialty of medicine, defining and describing specific syndromes, proposing various nosologies, and trying out new therapies. One exception was Daniel H. Tuke’s¹⁶ studies to determine: Is insanity a product of civilization? Using the case registers in Britain, he found in 1859 that mental illness rates were lower in rural than in industrialized urban areas. Later, in 1878, after gathering reports from missionaries and explorers about the rarity of mental illness in primitive societies, Tuke concluded that mental disorders were diseases of civilization produced by the complexity and strain of life in industrialized societies.

Yet, striking advances at the end of the century—Kraepelin’s classification of the mental disorders, Freud’s formulation of psychoanalysis, and Bleuler’s clinical work—dominated the field, seemingly overshadowing social psychiatry. However, probably because clinical psychiatry was in an early stage of development and because of the apparent tranquility in Western society before World War I, these psychiatrists’ and others’ social psychiatric concerns went relatively unnoticed. For example, Kraepelin¹⁷ emphasized repeatedly that mental illness was influenced by broad social factors such as isolation, wars, political upheavals, and state welfare measures, as well as by the patient’s age, ethnicity, and cultural status. As early as 1905, E. Bleuler¹⁸ advocated brief hospitalization for schizophrenics and their rapid return to the community. In France, Auguste Marie¹⁹ studied the influence of migration and industrialization on mental health and illness, and viewed rapid social change as a pathogenic factor.

In 1917, shortly after the United States entered World War I, the term “social psychiatry” first appeared in the scientific literature. In Volume I of *Mental Hygiene*, E. E. Southard²⁰ mentioned it as one of the two newer

and more promising specialties that were developing.* Southard's interest in mental hygiene and social work stemmed from his experiences as the founder of the Boston Psychopathic Hospital's Outpatient Clinic (one of the first in the United States), and were prompted by concerns about psychiatric disorders that might be produced by World War I. In 1918 he and Edith Spaulding²¹ developed a course in social psychiatry for social workers at Smith College that "endeavored to show to what degree abnormal and antisocial behavior result from the inability to make such adjustment [of primitive instincts to modern civilization]."

But the term "social psychiatry" had a fragile existence in the decades between 1920 and 1950, when the achievements of psychoanalysis and its popularity dominated psychiatry. In "Social Psychiatry: Vagaries of a Term," Bell and Spiegel²² note that during the 1920s its use waned drastically. In the 1930s, the term was adopted briefly by sociologists. But in 1940 it reappeared in *The American Journal of Psychiatry* in an article by S. W. Hartwell,²³ who emphasized that a pathological environment and the individual's emotional past were related to the development of mental illness and insisted that psychiatrists should be collaborating with psychiatric social workers. Thus, the term "social psychiatry" was in and out of vogue during the years between World Wars I and II, and was applied variously to psychiatric social work, the sociology of the mental disorders, and to multidisciplinary efforts to understand and treat the mentally ill.

Since World War II, with the accelerated rate of social change throughout the world, there has been a mounting interest in social psychiatry. This interest has been sustained by major community studies and other epidemiologic investigations. Concurrently, there have been sweeping changes in methods of caring for the mentally ill, particularly the development of the Community Mental Health Movement. Thus, as we look at 200 years of psychiatry, we can see that social psychiatry has been prominent during periods of revolution and accelerated change, sinking into dormancy during more stable times.

We propose three major reasons why interest in social psychiatry peaks at times of societal unrest, especially during periods of rapid social change. But first, we should define briefly social and culture change. Social change involves shifts in the hierarchical rankings within the social structure, geographic mobility and urbanization, and a host of political and economic processes, including the redistribution of occupational and other patterns. Culture change refers to modifications and variations of life styles, values, and beliefs as they pertain to patterns of human interaction and to the utilization of objects of material culture, particularly the technological. Previously, in accord with the influence of Darwinism,

* The other was "metric psychiatry (psychological psychiatry, i.e., a psychiatry that uses methods developed by psychologists, commonly called 'mental tests' . . .)."

social and cultural change were seen in an evolutionary perspective; but today, tempered with skepticism, we attribute change in a given society to the influence of external social forces, disequilibrium within the society, diffusion, and especially innovation.

The first reason for increased interest in social psychiatry at times of rapid social change is that when institutional controls are loosened and marked shifts are occurring in the social structure, man's age-old fears of anarchy are awakened—fears of disorder, lawlessness, and chaos. When order seems to be dissolving into chaos, basic anxieties are aroused. Impending loss of control, individual or societal, is one of mankind's most primitive dreads, stirring up terrifying fantasies about unrestrained impulses and the consequences of the free expression of instinctual drives.

The "Reign of Terror" during the French Revolution is an example of revolutionary sociopolitical change that reached chaotic proportions. The years between 1789 and 1794 were characterized by erratic social control and were followed by the reimposition of authoritarian regulations designed to insure stability and social order. Psychiatrists wondered whether the revolutionary events had produced mental illness. In 1837 Esquirol²⁴ said that "the question, so often propounded for forty years, presents itself; Is there now more insanity than existed previous to the [French] revolution?" He stated that political commotions are the exciting, not the predisposing, causes of mental illness.

Periods of social change, with the fall of an old order and the often tenuous establishment of a new one, can bring turmoil and impending chaos. Such times are feared: Will man's dark, primordial side emerge as violence and madness in a reign of disorder? Thus, primitive fears of loss of control, with its implications for the sanity of man, provide one explanation for heightened interest in social psychiatry at times of rapid social change.

A second reason for increased attention to social psychiatric issues during periods of rapid change is that criteria for evaluating behaviors are in transition. Since mental illness is judged mainly in terms of behavioral disturbances, concern about a possible increase in mental illness is intensified during periods of societal unrest when familiar rules for behavior are challenged, disregarded, or superseded by new ones that are only beginning to be accepted. Moreover, changes in moral codes and customs produce ambiguity and blur the boundaries essential for mental health as well as for social order. The consequent anxiety contributes further to concern about whether the number of mentally ill is increasing. But at such times epidemiologists encounter serious difficulties in measuring mental illness because criteria for defining it are also changing.

Esquirol believed that the *apparent* increase in the number of mentally ill in France after the French Revolution was due to the exchange of "ancient usages and opinions, for speculative ideas, and dangerous innova-

tions." He ascribed increased postrevolution insanity to the greater laxity in moral standards—a familiar note in our present-day society which has been attributing dissent, drugs, and disease to permissiveness.

During periods of rapid change, previously forbidden behaviors may become acceptable, while the conventional may become passé, particularly in our contemporary era of "the other-directed"²⁵ person when one is attuned to fleeting whims and fads. Thus, alterations in the social fabric are accompanied by shifting standards for judging behavior as either normal or abnormal which consequently heightens concern about mental illness.

The third reason for greater interest in social psychiatry during periods of accelerated social change is that such change alters roles and, concomitantly, behaviors. For groups as well as individuals social and cultural changes bring benefits, but also disrupt the established patterns that have served protective and expressive functions as well as perpetuated injustices. Moreover, the winds of change blow unevenly so that the old and the new coexist in uneasy equilibrium. Some espouse change, while others resist it; some advance, while others retreat. These polarities produce conflict within the individual as well as between groups. Since change involves gains and losses for individuals and groups and requires adjustments that may be stressful, mental illness often results. Smelser²⁶ designates changes in rates of behavior as one of the critical dependent variables in the study of social change.

Fried²⁷ proposes that the specific effects of change on the individual result more from changed criteria for social *role* performance and changed expectations of others than from *institutional* changes. Fulfilling new or multiple (sometimes incompatible) role expectations, while adopting new and discarding conventional behaviors, requires adaptation—the result may be salutary or it may be deleterious when it involves role strain. Moreover, keeping pace with the rate of change appears to be a requisite for mental health.²⁸

Renewed interest in social psychiatry during the last 25 years has accompanied the accelerated rate of social change since World War II. Fried has remarked that just the magnitude of this change distinguishes our era from previous ones. Proliferative technology, particularly in communications and transportation, has converted the natural environment into a social environment, containing four billion people. Very recently, Warren Dunham²⁹ proposed "that a total conjoint force operating during the past half century to produce tremendous changes in our social organization is found in the linkage of science, technology and federal power. This trilogy has been successful in introducing elements into our community life which have been productive of vast changes . . . some of which are crucial to . . . the interpretations of epidemiological studies of mental disorder."

In addition to the communications revolution, evidenced by computers, jet airplanes, and television, social security and other federal

programs have transformed community life. As Dunham explains, the government's assumption of some responsibility for the elderly has loosened familial obligations. Minority groups have gained their civil rights and some political power, but not a concomitant increase in economic resources. And the Community Mental Health Movement's emptying of the state hospitals has resulted in skid row's becoming "an 'open asylum' and a collecting ground for those misfits, the psychologically maladjusted and physically handicapped who for one reason or another are ineligible for social security benefits."

Just as there were heightened fears of increased mental illness at the beginning of the last century when psychiatry emerged as a specialty, again there is concern about a possible increase in mental illness and the effectiveness of psychiatric treatments. In 1972 Rosenthal³⁰ reported that there is growing evidence that "almost no family in the nation is entirely free of mental disorders." He stated that there were 1.75 million possibly schizophrenic persons at large in the community and another 500,000 in hospitals, that about nine million Americans had serious drinking problems, and that for children under the age of 15, first-admission rates to mental hospitals were increasing alarmingly. Furthermore, "emotional illness short of insanity is so prevalent in the population that it is almost impossible to estimate." Rosenthal concluded that "the magnitude and gravity of the mental illness problem . . . [has] relevance to the psychological turbulence rampant in an American society that is confused, divided, concerned about its future, and casting about for workable solutions to critical problems."

Epidemiologically, we do not know whether mental illness rates are increasing, but rising crime and suicide rates provide substance for greater concern about the quality of life and relationships between social processes and mental illness. Anne Somers³¹ states: "For a considerable proportion of American children and youth, the 'culture of violence' is now both a major health threat and a way of life." For young Americans, the rising death rate produced by social causes is alarming. The 18,032 deaths in the age group 15 to 24 caused by motor vehicle accidents in 1973 represent a 16% rise in ten years; the suicide rate for the same age group doubled between 1950 and 1973 to reach 10.6 per 100,000; and homicide, the most rapidly growing cause of mortality in the United States, accounted for the deaths of 5,182 of those aged 15 to 24—in 1972, 17% of all homicide victims were in the age group 20 to 24. Somers pleads for a broad epidemiologic approach to the problem of youthful violence. She asks whether television, depicting violence in ordinary life settings, is "a mirror [of] or a model" for our society. But every possible risk factor should be studied—the demographic, physical, political, socioeconomic, and the moral.

These data showing increased mortality rates in the young attributable to social causes are solid indicators of a possible increase in mental illness

in our society. One of the maxims of epidemiology is that the shifting of the age base for a chronic or recurrent disease toward younger age groups forebodes an increasing frequency of the disease. The epidemiology of coronary heart disease over the last 30 years is a dramatic example.

To these poignant facts about our society's health is added Norman Cousins³² recent declaration about the plight of the mentally ill: "Evidence of scientific progress in almost every field is abundant, but the general situation of the mentally ill in America—despite tranquilizers, insulin, lithium, niacin, ascorbic acid, antihistamines, convulsive shock, and group encounters—is a national disgrace. The victims are not just the afflicted but all those who are trying so desperately, and often so futilely, to help them."

Rapid social change, societal unrest, and fears about a possible increase in mental illness are stimulating interest in social psychiatry and are providing the setting for further attempts to understand the linkages between "man segregate" and "congregate" and how they foster or impair the emotional well-being of the individual and the group. Scientifically, the tasks confronting social psychiatry are to delineate its legitimate area of inquiry and activity, and to assemble theory obtained from epidemiologic research. As Ödegaard³³ said: "Psychiatry is forced to study groups and populations *because* it deals with individuals, not *in spite* of that fact."

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2

Social Psychiatry: Definitions and Scope

Social Psychiatry, by our definition seeks to determine the significant facts in family and society which affect adaptation (or which can be clearly defined as of etiological importance) as revealed through the studies of individuals or groups functioning in their natural setting. . . . It presumes that every individual is valuable and that most persons possess potentialities that are never fully realized because of personal emotional or social interferences. Social Psychiatry is etiological in its aim, but its point of attack is the whole social framework of contemporary living.

—THOMAS A. C. RENNIE¹

As pointed out in the preceding chapter, interest in social psychiatry rises during periods of rapid social change and when certain societal health problems are manifest, such as those presented by our current "culture of violence."² The past 25 years have been characterized by dramatic evidence of accelerated social and culture change—the rural-urban shift, widespread geographic mobility, the black-white confrontation, and changing roles and statuses for women. During this time mental illness has emerged as one of the major public health problems. Various definitions of social psychiatry have been proposed and have sparked debate about its legitimate areas of activity and inquiry. And its status as a field of psychiatry has been challenged. Is social psychiatry an evanescent topical concern, or an umbrella-like label under which a wide array of therapists from different disciplines gather? Or is it an evolving branch of psychiatry that has potential for supplying vitally needed information about the interplay between social forces and individuals' mental processes and the developing of appropriate therapies?

Despite controversy about its identity and status, social psychiatry appears to be a coalescing, evolving branch of psychiatry, striving to accumulate facts, formulate theories, and delineate fields of activity for its investigative, diagnostic, and therapeutic endeavors. A. Leighton, Kiev,

Rabkin, Arthur, Masserman and Schwab, and others have written or edited a number of volumes on social psychiatry, and numerous articles on it have been published in a wide variety of journals. And an international and other associations for social psychiatry have been established.

In this chapter we will look at the recent development of social psychiatry, include a brief review of definitions and opinions about its scope and status, and then discuss the relevance of epidemiology to social psychiatry. As early as 1924, Southard and Jarrett³ defined social psychiatry as an “art now in the course of development by which the psychiatrist deals with social problems. Social psychiatry is a branch of psychiatry and a special kind of medical art.” This view has not been shared by many psychiatrists in the past 50 years. For example, in their 1966 review of “Social Psychiatry: Vagaries of the Term,” Bell and Spiegel⁴ concluded that: “Apart from its usefulness as a label for a certain type of crossdisciplinary research training and research procedure, the term, ‘social psychiatry,’ would appear to have no logical meaning. . . . [It] had best be reserved to differentiate the research activities of psychiatrists interested in the social area from those interested exclusively in intrapsychic or biological factors.”

Adolf Meyer’s⁵ work in the early part of the twentieth century supplied a foundation for social psychiatry as a field—not just a “special kind of medical art” nor a designation for “research activities of psychiatrists interested in the social area.” When the Phipps Clinic opened in 1913, its dispensary was designed to provide community service. A child guidance clinic was added as quickly as possible, and Meyer attempted to carry out “real research in social service” by surveying the school population in Baltimore neighborhoods. In 1914, he stated: “The great lesson the public needs to take to heart here, as in many other issues of practical life, is that no one is fit to be absolutely independent. We are social beings and members of a family and of a community, and act as a rule as agents of a commonsense consensus.”

From those roots, Meyer’s work was carried forward by a significant number of his students and followers. Rennie,¹ who had studied at the Phipps Clinic and later fathered the Midtown Manhattan Study, emphasized that: “Social psychiatry is etiological in its aim, but that its point of attack is the whole framework of contemporary living.” Alexander Leighton,⁶ who also had studied at the Phipps Clinic and later carried out the comprehensive Stirling County Study, wrote in his *Introduction to Social Psychiatry* in 1960 that five topics are characteristic of social psychiatry. These are “dealing with patients in numbers, attention to sociocultural processes, a sense of primary responsibility to a group, carrying the fruits of clinical knowledge into the social system, and conducting results from other behavioral sciences into clinical psychiatry.” They constitute a syndrome: “. . . the more an activity exhibits these five qualities, the more

it is appropriate to regard it as social psychiatry, and to consider these five as, all together, a set of related functional needs, characteristic of our society at the present time.”

Some examples of other social psychiatrists’ definitions and scope of the field are those presented by Kiev, Ruesch, and, recently, Arthur.

In 1965, Ari Kiev⁷ summarized social psychiatry’s foci of interest:

Social psychiatry is concerned fundamentally with the interrelationships between the sociocultural environment and the individual. While recognizing the contribution of heredity, physiology, and psychodynamic factors to the individual’s personality and psychopathology, it focuses attention upon the impact of human environment on the individual and the effect of the individual on the environment. It is also concerned with the way in which environment affects form, distribution, frequency, treatment, management, and perpetuation of psychiatric disorders. It pursues these questions with the strategies and tools of such diverse disciplines as anthropology, sociology, social psychology, and epidemiology.

In 1967 Jurgen Ruesch⁸ outlined social psychiatry’s distinguishing characteristics:

It is a point of view rather than a mode of operation.

It focuses upon people’s social functioning rather than upon their psychopathology.

It deals with individuals in groups rather than with persons seen in isolation from one another.

It attempts to influence not only persons but also social organizations, communication networks, and situations.

It advocates treatment and prevention of mental illness through a broad approach which in addition to the patient involves his relatives and coworkers and the institutions that affect his life.

And finally it strives to influence the everyday life attitudes of citizens that are conducive to human satisfaction and mental health.

Recently, in “Social Psychiatry: An Overview,” Ransom Arthur⁹ observes that it is difficult to formulate a comprehensive definition of social psychiatry. But he states succinctly that it “includes the study of the impingement of social phenomena upon the genesis and manifestations of mental and physical illness and the utilization of social forces in the treatment of mental and emotional disturbances.” Its major elements are “epidemiology and taxonomy, the hospital viewed in social terms, community psychiatry, social factors in the onset of disease, and transcultural psychiatry.”

As we have seen, various definitions of social psychiatry differ primarily about its scope. They range from its being limited to psychiatrists’ research activities in the social area to its emergence as one of the three major branches of psychiatry with its distinctive conceptual basis, research endeavors, and pluralistic therapeutic approaches.

The Scope of Social Psychiatry

We think that the field of social psychiatry is not just broadly concerned with fundamental interrelationships between the individual on one hand, and family, groups, and the sociocultural environment on the other, but also, that it has specific interests and involvements. These revolve around the cause, course, treatment, and prevention of mental illness and include the following topics and foci of interest:

1. *Social causation*: To what extent do sociocultural processes, e.g., poverty and deprivation, produce mental illness, and to what extent do they intertwine with genetic and other factors to determine mental health or illness? This raises the age-old “nature or nurture” question.

But for more than a century the heredity versus environment argument about the causation of mental illness has been recognized as being too simplistic. Scientifically, the Age of Relativity has been succeeded by the Era of Probability. And the uncertainty principle is applicable to social processes and human lives just as it is to physicists’ studies of the movement of photons. The term *social causation* does not imply an “either-or” question; instead, it is one component of the thesis that mental disorders are multidetermined conditions.

In an editorial, “Social Psychiatry and the Concept of Cause,” Alexander Leighton¹⁰ notes that social psychiatry, like other psychiatric fields, recognizes that multiple factors are responsible for the “originating, precipitating, and perpetuating causes” of mental disorder. He states that social psychiatry, however, has a special emphasis, “a greater attention to the impairing aspects of psychiatric disorder, and a tendency to ask what causes impairing symptoms rather than what causes a disease. While not denying interest in a question such as ‘What are the psychodynamic roots of a neurosis?’, social psychiatry is more focussed on the less ambiguous query, ‘What are the situational factors which evoke certain patterns of feeling and behavior to such an extent that they are disturbing to the person, the social group around him or both?’ ” As discussed in Chapter 6, researchers in psychiatry have immense difficulties with causation in its traditional scientific terms. At our present level of knowledge investigators focus their efforts on ascertaining possible associations between social processes (e.g., Leighton’s situational factors) and mental health and illness that might have causal significance.

2. *The course of mental illness as it is influenced by family, groups, the community, and the wider society*: This area includes topics such as the individual’s role, status, and, especially, his social position, and the family’s attitudes toward mental illness, the role of mental illness in family dynamics, and accustomed methods for dealing with problems, as well as child-rearing practices. At the group level it involves peer-group pressures and values. And, at the broader societal level, it encompasses labeling,

processes such as social and geographic mobility, and, specifically, the association between lower socioeconomic status (SES) and mental illness rates. As a social psychiatric concern, it turns a spotlight on the age-old questions, first formulated by Plato: To what extent do the inhabitants determine the quality of life in their communities, as opposed to the contrasting viewpoint—to what extent do sociocultural processes and the social organization of the community determine its residents' personalities and behaviors?

3. *Treatment and rehabilitation:* These topics include the therapists' philosophies, techniques, and styles—for example, the use of family therapy—and other types of group therapies, and a systems approach to mental health care.

The therapeutic and rehabilitative approaches of social psychiatry do not preclude either individual psychotherapy or the use of psychopharmacologic agents, but it is acknowledged that a patient is often difficult to treat without involving those with whom he lives or works, or others with comparable problems. Also, from the social psychiatric viewpoint, the question must be asked: To what extent should the therapist attempt to "adjust" the patient to disturbing or differing familial and other group situations?

The use of psychotropic drugs requires not only knowledge of their specific pharmacologic activity but also cognizance of the nonspecific factors affecting their utility and effectiveness. Rickles¹¹ has outlined the major nonspecific variables influencing neurotic patients' responses to drug therapy. They include: (1) the patient (heredity, personality, social class, attitudes and expectations, and illness), (2) the nontreatment milieu (home and work), (3) the physician (heredity, personality, social class, attitudes and expectations, and professional orientation), and (4) the treatment milieu (patient and physician interaction, type and intensity of psychotherapy, etc.). Thus, these nonspecific variables embrace such basic social psychiatric concerns as the social setting in which illness arises and attitudes toward medications held by the family and others with whom the patient interacts.*

Social psychiatry's treatment approaches often involve therapists who are not physicians—other professionals or mental health technicians. But

* The nonspecific factors appear to be of somewhat lesser significance in the use of the more active medications for the treatment of patients with psychotic conditions than in the use of common antianxiety or antidepressant compounds for the treatment of patients with neuroses and mild disturbances. However, nonspecific factors influence reactions and outcomes of drug therapy even in the treatment of patients with serious mental illnesses. For example, necessary maintenance therapy for schizophrenic illnesses may be discontinued because of social class or cherished familial attitudes toward physicians and medications. Or the personality changes produced, e.g., the stabilizing effect of lithium on cyclothymic fluctuations, may be regarded as undesirable by family members because the patient's mood swings "fitted" into the dynamics of established family interactions.

the therapeutic approaches of different types carried out by various mental health workers are united, as Rabkin¹² points out, primarily by the conviction that treatment of persons with mental disorders is influenced by the sociocultural setting in which illness arises, and that the outcome is dependent on attitudinal and behavioral changes occurring in interpersonal and group relationships.

4. *Prevention*: This fourth area rightfully requires the concerted efforts of theorists, researchers, and therapists from a number of disciplines—for example, the social sciences, social work, and nursing, as well as psychiatry. Workers from different fields recognize that mental health can be protected or attained only by grappling with political, economic, environmental, and ethical issues. But the challenge is formidable for two immediate reasons. One is conceptual—the task of defining mental health, which is even more difficult than that of defining mental illness (see Chapter 8). The second, unfortunately, is all too tangible—the prevalence of mental illness, which was conservatively estimated by the President's Commission on Mental Health to be at about the 20% level in the general population. (This report was made public in September 1977.) The prevalence is so great that primary preventive measures will be relatively ineffective until the mentally ill are cared for adequately, until our society reorders its priorities and demonstrates (by supplying necessary funds) that it values its members' emotional well being.

5. *Governmental and community programs*: In what ways and to what extent do distant governmental and closer local programs provide for treatment and rehabilitation of the mentally ill? Social psychiatry is concerned with federal, state, and community policies, such as the adequacy of facilities and services, federal funding and programming, and how the community utilizes its human and material resources to care for the disturbed and the deviant.

Erratic federal and state programs have produced conflicts and pressures that interfere with the treatment of persons with mental and behavioral disorders. For example, during the past few decades, governmental policies have lacked coherence and at times have appeared to be capricious. The establishment of the Joint Commission on Mental Illness and Health in 1955 gave rise to hopes that its recommendations would enable governmental planners and legislators to meet the enormous needs for mental health care.¹³ Recommendations included substantial funding for a balanced research program dedicated to the pursuit of new knowledge and for the recruitment and training of a sufficient number of mental health personnel. Also, the Joint Commission called for a tripling of expenditures just for mental health services in the 1960s. Then the Community Mental Health Centers Acts of 1963 and 1965, following within a few years the development of "The Therapeutic Community" and the discovery of psychotropic medications, raised expectations and even brought dreams

'that mental illness, one of mankind's most ancient and prevalent scourges, could be controlled, treated, and perhaps even prevented.

But the decline in federal support for research, personnel, and facilities during the 1970s has resulted in disillusionment for caregivers, has produced frustration for those responsible for administering programs and services, and has brought hardships to sufferers from mental illness. Neither the sufficient number of mental health workers nor the envisioned nationwide network of facilities and services has materialized. An ambitious, farsighted plan that was designed to transform a fragile reticulum into a sound, extensive mental health care system has been imperiled, if not seriously damaged. In view of the many inconsistencies and inadequacies, social psychiatry must become more directly involved politically with governmental policies and programs.

6. *Cultural influences on the definition, incidence, prevalence, manifestations, and treatment of mental disorders:* These concerns are the province of the transcultural psychiatrist who seeks to compare frequencies and types of illnesses and treatments in various cultural groups. But a psychiatrist working in only the urban areas of the United States sees patients from various subcultural groups whose symptomatology, the meaning of illness, and the acceptable modes of treatment have to be considered with reference to both the patient's and the psychiatrist's cultural backgrounds. Also, we face the pressing problems of acculturation and the stresses on those who must adopt a new culture because they either have moved into it or have been engulfed by our highly technological, complex culture. In the midst of these practical problems, we are faced with difficult theoretical questions such as that framed by Warren Dunham¹⁴: "How do objective cultural elements and events become integral parts of the subjective experiences of the person and emerge as distortions of thought and behavior?" In view of their breadth and complexity, these topics will be discussed in a later chapter.

7. *Social control mechanisms involving psychiatry:* This controversial topic—the means utilized by a society to maintain social order—embraces complex questions. These relate to the validity of mental illness as a disease, the growing convictions that mental disorders are, to a large extent, socioculturally and variably defined conditions subject to "labeling," concern about mental patients' civil rights, and outcries against the psychiatric hospitalization of political dissidents, especially in the Soviet Union. The question—Whose agent is the psychiatrist: the patient's or society's?—is a troublesome one for psychiatrists in the Armed Forces and in many forensic situations, particularly those involving commitment. And social control is fundamentally important in social psychiatry, when any mental health profession is functioning, even subtly, to meet our society's need for maintaining social order.

The concept of social control, developed by E. A. Ross¹⁵ in the 1890s,

is “concerned with that domination which is intended and which fulfills a function in the life of society” to insure social order. Both individual propensities and societal mechanisms conjoin to develop social control processes. Ross stipulated that the individual’s capacities for sympathy, sociability, resentment, and a sense of justice contributed to social order, but that these alone were insufficient to maintain it. Society also engages in “moral engineering,” utilizing public opinion, police and the legal system, belief and religion, education and custom, art and ceremony, and even illusion as control mechanisms.

In “Sorcery, Sin, and the Superego: A Cross-Cultural Study of Some Mechanisms of Social Control,” John Whiting¹⁶ emphasized that social control is directed toward the satisfaction of primary drives for food, sex, and aggression. Neither positive reinforcements nor negative sanctions suffice to insure social control. His cross-cultural studies indicate that policing by officials and neighbors does not maintain the social system and that throughout the history of mankind cultural mechanisms have been developed and built into child-rearing practices, customs, and taboos that can operate as basic social control processes.

Studies of 36 primitive societies showed that “. . . there seem to be three independent motivational systems which occur in societies over the world: (1) the exaggerated and paranoid fear of retaliation from other humans; (2) the sense of sin deriving from the projected dread of punishment by gods or ghosts; and (3) the sense of guilt and readiness to accept blame deriving from a sense of responsibility for one’s actions.” Whiting found correlations between these systems for maintaining social order and various societies’ child-rearing practices. Paranoid fear (sorcery) was associated with early “seduction” followed by severe punishments for sexual activities in childhood. Fear of ghosts (sin) was associated with early neglect and severe punishments for aggression. And the third, guilt (superego), was associated with early childhood socialization in nuclear families which “accentuates rivalry between father and child for the nurturance of the mother.”

Finally, we must ask whether society has a need to relegate certain members of its population to special roles (e.g., the “sick” role), or to institutionalize or otherwise ostracize them to help maintain social control. During the last five centuries clerics, jurists, the propertied classes, and others in Western society have extruded, burned as witches, or confined the mentally ill and other undesirables.

8. *The possible existence of the sick society*: Can an entire society be designated as sick, especially when rates for suicide, psychosomatic conditions, or the mental disorders reach certain levels? Just as social psychiatry is fundamentally concerned with relationships between social processes and mental illness, it is also compelled to ponder the possibility that the society is sick. R. D. Laing,¹⁷ for example, insists that society is

irrational and that the schizophrenic person's "disturbed" behavior is therefore appropriate (see Chapter 8). Generally, when we see a mental patient we are accustomed to thinking of his idiosyncratic behavior as evidence of his suffering from a mental disorder. But 40 years ago, Lawrence K. Frank wrote about "Society as the Patient"¹⁸: "There is a growing realization among thoughtful persons that our culture is sick, mentally disordered, and in need of treatment. . . . The concept of a sick society in need of treatment has many advantages for diagnosis of our individual and social difficulties and for constructive therapy. . . . If, for example, we could regard crime, mental disorders, family disorganization, juvenile delinquency, prostitution and sex offences, and much that now passes as the result of pathological processes (e.g., gastric ulcer) as evidence, not of individual wickedness, incompetence, perversity, or pathology, but as human reactions to cultural disintegration, a forward step would be taken."

Since then, the atrocities of Nazi Germany have been exposed, and W. A. Scott¹⁹ has asked whether conformity to the norms of a sick society would, in itself, "constitute mental illness." More recently, Anthony Storr,²⁰ in writing about human aggression, points out that the dominant societies in the world are now in the paranoid stage of development, analogous to the infantile stage described by Melanie Klein.

Infant mortality and certain infectious disease rates gauge the effectiveness of a society's public health and preventive medicine programs. Also, rates of mental and psychosomatic illnesses supply knowledge about life styles and tensions, indicative of discrepancies between the realities of everyday life and cherished, sometimes shared, convictions about what life should offer. Since Durkheim²¹ published his classic work on *Suicide* in 1897, rising suicide rates have been considered indicators of anomie—"symptomatic of the breakdown of the collective conscience and of a basic flaw in the social fabric." And crime rates reveal the extent of turbulence and disorder within a society. Such rates (e.g., of infant mortality, psychosomatic illness, suicide, and crime) reflect the quality of life in a society, and may be indices of larger group conflicts or of a society's unwillingness or inability to construct social systems conducive to the physical and emotional well-being of its members.

James L. Halliday²² extended the scope of psychosocial medicine beyond the view that health and illness are determined by reciprocal relationships between man and the social environment. He proposes that:

A group, like an individual, may be viewed both physically and psychologically. . . . If these [the physical] needs are not satisfied its "physical health" declines and the group becomes a *sick population* characterized by high rates of sickness and death due to reasons such as malnutrition, infectious diseases, infestations, and so on. In its psychological aspects a group appears as a society with psychological or social needs. If these needs are not satisfied its "psychol-

ogical health," which is also its "social health," declines and the group becomes socially sick, that is, a *sick society*. The medical approach to the study of the sick society is called "psychosocial" medicine.

The concept of a "sick society," however, has questionable validity for several reasons. First, it analogizes between the individual and the group, and such an analogy is conceptually loose because there is no evidence that society functions like a biological organism. Second, the whole cannot be considered as just the sum of its parts. Third, it is known that certain individuals can be healthy even though many other members in their social group are physically or mentally ill. Thus, the concept of the sick society leaves little room for an appreciation of individual variability. And fourth, numerically, we do not know to what levels the infant mortality, suicide, crime, and other rates must reach before we can term a society "sick."

Although the concept of a "sick society" can be questioned and, scientifically, must be qualified, characteristics of groups are fundamental to social psychiatry's concerns and endeavors. Group characteristics are the elements constituting the social environment.

Durkheim, Halliday, the Leightons, and others have looked at suicide, psychosomatic syndromes, and mental illness in relation to societal integration-disintegration. Durkheim related suicide rates to varying degrees of solidarity or anomie in nations. Halliday believes that rising psychosomatic illness rates in Britain in the 1930s were associated with a "weakening of those 'psychological bonds that enable the members of a community to live and work together' "; social disequilibrium occurs as the first stage of a functional breakdown which is succeeded by social disintegration with a further weakening of those "psychological bonds" necessary for health. In the Stirling County Study, the Leightons and their co-workers found that community disintegration was correlated with higher rates of mental illness than community integration. Thus, the possibility of "the sick society" cannot be dismissed entirely. Scholars and scientists have found that the concept appears to have some value.

The Status of Social Psychiatry

Twenty-five years ago, as Arthur⁹ points out, psychiatry was divided into only two major branches, the directive-organic and the analytic-psychotherapeutic. But by 1960 Sabshin and his colleagues^{23,24,25} had found that psychiatrists could be classified into three ideological groupings: the psychotherapeutic, the somatherapeutic, and the sociotherapeutic. They predicted that in ten years, more psychiatrists would be committed to a sociotherapeutic orientation. During the 1960s, the numerous groups striving for status and recognition exerted pressures on our society to seek

immediate pragmatic solutions to societal problems. These societal churnings abetted the development of social programs, such as the Community Mental Health Movement, and gave an impetus to social psychiatry's development.

Very recent definitions of social psychiatry indicate that it is now recognized as a branch of psychiatry. For example, the World Health Organization (WHO) states:

Social psychiatry refers to the preventive and curative measures which are directed towards fitting the individual for a satisfactory and useful life in terms of his own social environment. In order to achieve this goal, social psychiatry attempts to provide the mentally ill, and those in danger of becoming so, opportunities for establishing contacts with society which are favorable to the maintenance of social adequacy.⁶

And, in the glossary of the second edition of the *Comprehensive Textbook of Psychiatry*,²⁶ social psychiatry is defined as a "branch of psychiatry interested in ecological, sociological, and cultural variables that engender, intensify, or complicate maladaptive patterns of behavior and their treatment." Rabkin¹² sees social psychiatry as one of the three major branches of modern psychiatry, along with the organic and the psychoanalytic. His discussion of their metapsychological models will be reviewed in Chapter 18.

But controversy about social psychiatry's status exists; the renewed interest in it is coming at a time when psychiatry is struggling with problems of orientation and identity. Arthur⁹ envisions the emergence of a new nonmedical, social science-oriented specialty that would "develop its own approaches to the solution of mental health problems . . ." while psychiatry would become more firmly anchored as a definite specialty of medicine.

Such a development may not be necessary. Some definitions of social psychiatry imply that it is a field involved almost exclusively with the interrelationships among the individual, the group, and social processes, and is far removed from other branches of psychiatry, especially the biologic. However, social psychiatry's concern with the experiential and other social processes bearing on mental health and illness does not preclude its cognizance of the significance of genetic and biochemical factors in the etiology of some of the mental disorders (see Chapter 13). The necessity to view man holistically—as a biosocial organism—has been demonstrated by studies of schizophrenia in twins. In analyzing possible relationships among biological and social factors in schizophrenia, Pollin²⁷ reports that 50–75% "of identical twin pairs in which one twin is schizophrenic, do not become concordant for schizophrenia. We interpret this to mean, therefore, that a significant portion of the pathogenic determinants are nongenetic and, therefore, experiential."

Psychiatry's Identity Crisis

Social psychiatry's status is, perhaps, more controversial than it would have been if psychiatry were not in the throes of an identity crisis. In a recent article, "Psychiatry, the Battered Child of Medicine," Milton Greenblatt²⁸ notes that psychiatry is criticized for "imprecise diagnosis, conceptual vagaries, jargon, therapeutic impotence, and class bias." In delightful prose, he writes: "Born in witchcraft and demoniacal possession, feared by the public, often scorned by the family of medical specialists, and dependent for much of its existence upon handouts from public agencies, psychiatry has had a very hard life, indeed."

From other disciplines—those competing for patients, and from researchers and observers of the social scene—we hear voices proclaiming that psychiatry is an irrelevant if not useless branch of medicine; that it is geared to serve only the well-to-do; and that it has had little or no therapeutic impact on our tormented society. Fuller Torrey²⁹ contends that psychiatry is dying; and, increasingly, novelists and playwrights depict psychiatrists as inept bunglers and, at times, as charlatans. Some of these criticisms are intended to be constructive self-scrutinies; some are objective observations; and some are vitriolic, often self-serving diatribes.

At such a time, we should recall Henry Sigerist's thesis that the health practices, the role of the sick, and the status of any profession, at a given time in a society's history, are mainly reflections of broader social processes. Both the role of the sick and the role of the healer are determined by societal attitudes and values.³⁰ Psychiatry is going through an identity crisis that should be neither defensively camouflaged nor denied. Scrutiny of our profession's dilemmas is timely, if not overdue. But we should not forget that crisis is defined as "a stage in a sequence of events at which the trend of future events, especially for better or worse is determined."³¹ Thus, it is a turning point that offers magnificent opportunities for development as well as serious risks of involution. In view of our numerous concerns about economic vitality, disease, crime, and mental illness, the criticisms of psychiatry can be seen as pleas for succor by a troubled society—not demands for the dissolution of a discipline. Psychiatry's orientations will be socially and culturally determined; in reality, complaints about psychiatry are petitions for help.

In the midst of these difficulties, it is imperative that we remain dedicated to a humanistic orientation and committed to enlarging psychiatry's scientific base. And, to help build a pluralistic society, we should heed Harvey Cox's³² urging that we "become less doctrinaire about what constitutes 'mental health' and encourage a more generous range of life styles." Psychiatry cannot offer solutions for the vast social ills afflicting our nation. But we can supply treatment and care for the casualties of our

technologic era; and, to do so, we cannot be content to function only as custodians of the mentally ill or as counselors of the middle class.

For social psychiatry, Rabkin¹² states that the great task facing it "or any other field of specialization is to correct not the errors and illusions of other sciences or professions but those of its own." That task, first and foremost, is to build theory based on findings obtained from research. Sabshin²³ points out that the "relative neglect of theory building and of research in community mental health will increasingly become an Achilles heel." He adds: "The paucity of research efforts and the pell-mell activism of many community mental health advocates has rendered them distinctly open to such criticism. Underlying some of the criticism, however, there lurks a suspicion of social science or social psychiatric research as 'soft-headed.' Often a bias exists in favor of 'wet' laboratories and biological investigation."

To develop theory, social psychiatry must look to psychiatric epidemiology for research findings that can be assembled into theoretical constructs. Epidemiology supplied the findings that led to the conquest of the infectious diseases, and is now focusing on the study of chronic diseases and psychosomatic disorders.

Epidemiology's relevance to psychiatry is increasing. The massive growth in population during the last few decades, the huge numbers of disturbed and mentally ill in our nation, and the development of the Community Mental Health Movement reveal the inadequacies of acceptable clinical approaches to the understanding of mental illness and the care of those with emotional and behavioral disturbances. Dynamic psychiatry and psychoanalysis appear to have already made their major contributions to knowledge about mental illness and therapies. The American character is now "other-directed,"³³ looking toward other persons and groups for behavioral cues. Moreover, the rising suicide and crime rates as well as the widespread popularity of group therapies indicate that we are living in an age when solutions to social problems and treatments for the disturbed must focus on groups rather than on individuals.

For these reasons, and to summarize the available findings that have been obtained on social processes and mental health and illness, we shall look toward epidemiology, the study of disease in populations. Feinstein³⁴ states that, as more researchers devote their efforts to studying the microbiology of molecules, we must "maintain scientific faith in the macrobiology of man."

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3

The Epidemiologic Background

Epidemiology reminds us that no man is sufficient unto himself, that mental illness—perhaps more so than any other scourge of humanity—is a by-product of man's social existence in a complex environment of his own making. Much, of course, can be gained by studying the pathological process in the individual; but complete understanding can be approached only as mental illness is viewed in the light of man's eternal striving to adapt himself to the demands of his destiny.

—JACK R. EWALT¹

Epidemiologic studies of mental illness and treatment programs in populations supply a scientific data base for social psychiatry. Morris² defines epidemiology as “the study of the frequency, distribution, and determinants of disease in groups.” Psychiatric epidemiology, therefore, seeks to ascertain who, where, when, and, eventually, why some become mentally ill. Such data, relating demographic and socioenvironmental factors on one hand and mental illness on the other, make up the bits and pieces of information that we hope can be assembled into a skeleton upon which a theory of mental health and illness can be built.

Since the seventeenth century, when John Graunt³ published his famous *Observations on the Bills of Mortality*, and “political arithmetic” and statistics developed as sciences, epidemiology has been closely related to demography. But there is a difference between the two disciplines. Taylor⁴ specifies that: “For medical purposes, demography can be defined as the study of the size, composition, and distribution of human populations. It is an observational, not an experimental, science. Interest is in such variables as natality, mortality, migration, social mobility, age, sex, race, ethnic distribution, mental capacity, attained skills, and health. It provides the denominators of the rates used in medical and health statistics, whereas epidemiology provides the numerators.”

Epidemiology usually is thought of as an essential component of public health; in fact, public health has been one of epidemiology's applied fields

for more than a century. Recently, the field of clinical epidemiology has emerged. In 1938 J. R. Paul⁵ insisted that epidemiologists should not restrict their endeavors to analysis of statistics and to the study of infectious diseases; instead, they need to investigate "the circumstances under which diseases occur, where diseases tend to flourish, and where they do not." For Feinstein⁶ the domain of clinical epidemiology is the "clinicostatistical study of diseased populations. . . . [Its distinguishing characteristics] are in its foci of investigation, its material, and its methods. The foci of investigation are topics in the occurrence, distribution, natural history, prognosis, prevention, and therapy of disease."

Epidemiology has a conceptual basis, a methodology, and a body of observations that apply to groups of people rather than to individual patients. By studying diseases in groups, particularly, epidemics, a comprehensive clinical picture, in all of its variability, can emerge. By observation and investigation, factors common to the clinical picture, and in some cases to the origin and spread of the disease, can be identified. This leads to assumptions about associations between man and his environment that can have etiologic significance and implications for disease control.

The conceptual basis for many of the tenets of epidemiology has been developed throughout medical history as physicians and scientists have sought explanations for mass outbreaks of disease among groups of people in certain places at particular times. Although epidemics undoubtedly ravaged ancient civilizations, Hippocrates was the first to describe them with precision; our term "epidemiology" is derived from his famous books, *Epidemics*.⁷ "Epidemic" disease is distinguished from the endemic and sporadic. "Epidemic" refers to the relatively sudden onset of widespread disease, mass outbreaks in a population, whereas "endemic" refers to those diseases, usually present in a population, which undergo smaller fluctuations in frequency. "Sporadic" denotes the scattered, occasional occurrence of a disease within a group of people. Epidemics may be relatively new diseases produced, for example, by a more virulent strain of an organism or by low resistance in the population resulting from crowding and deprivation; endemic diseases or, occasionally, sporadic ones may reach epidemic proportions when circumstances are conducive.

Hippocrates' *Epidemics* is one of the remarkable achievements of Greek science. Outbreaks of diseases, such as mumps, tuberculosis, and the plague, are described in relation to environmental factors, particularly climatic conditions. Furthermore, Hippocrates noted the appearance and disappearance of diseases according to seasonal changes, and observed the sociodemographic characteristics of the afflicted. He anticipated the role of epidemiology in medicine when he advised the physician to:

. . . learn thoroughly the constitution of each of the seasons as well as the disease; what of good or what of bad there is common to the constitution or to

the disease; what disease is protracted and fatal, and what, though protracted, tends to recovery; what is acute and fatal; what acute and curable. From these one will have success in investigating the order of the critical days and in prognosticating therefrom accordingly. With these facts in mind one can tell who is to be treated, as also when and how.⁷

This is medical ecology. The appreciation of the interrelatedness of man and environment is implicit in Hippocrates' counsel—to learn about “the seasons as well as the disease.”

Ancient Greek medicine, from Hippocrates in the fifth century B.C. to Galen in the second century A.D., developed three concepts applicable to the epidemiology of many diseases:

1. “*Epidemiologic constitution of the atmosphere*,” which focused attention on the role of the environment;
2. “*Individual predisposition*,” which referred to host characteristics, such as lack of hygiene, dietary factors, and emotional strain; and
3. “*Contagion*”: “. . . it is dangerous to associate with those who are afflicted.”⁸

These concepts were employed as public health measures for disease control throughout the centuries. For example, in an attempt to control the spread of bubonic plague, in 1374 Venice forbade travelers from the East to enter the city. The first quarantine station was set up in Marseilles in 1383 to isolate ships and travelers from contact with the mainland for forty days; our word “quarantine” is derived from that practice. Throughout Western Europe, during the sixteenth and seventeenth centuries, the nobility maintained rural summer homes to which they could escape when the plague was epidemic in the cities. Such preventive measures were not applied only to physical diseases. In *The Epidemics of the Middle Ages*, Hecker⁹ mentions that the upper classes in Germany, France, and the Lowlands in the fifteenth century confined their adolescent children and young adults to their homes or to sanctuaries to keep them from catching the mental plague—the Dancing Mania.

Epidemiology, therefore, began as the study of epidemics—mass outbreaks of disease. Discrete epidemics offer favorable opportunities for the investigator to study causative factors and to employ preventive measures that lead to disease control. More limited populations at risk, such as inmates in a prison, employees of a factory, or students in a certain school, have certain host factors in common, some of which indicate particular types of susceptibility or vulnerability to stressors. For example, only the girls in a certain public school, or workers sharing religious beliefs, or only persons in contact with a few authority figures may be the afflicted. Because psychosocial variables may be more limited or more easily recognized, investigating epidemics can lead to the identification of causative factors. Historically, the study of epidemics of infectious diseases provided the information essential to our understanding of their

etiology and control; consequently, epidemiology's attention to epidemics of mental illness appears to be an avenue to progress in this field.

Mental Epidemics

Since World War II, an increasing number of epidemics of mental and psychosomatic illnesses have been reported. Recurrences of epidemics of hysteria, outbreaks of new syndromes, such as myalgia nervosa, and the prevalence of coronary heart disease compel us to look for socioenvironmental causes and to consider contagion as a possible mechanism for transmitting some illnesses psychosocially.

Modern society's relative neglect of contagion is surprising for several reasons. The first is the clinical evidence of *folie à deux* or *trois*, described in the last century by Lasègue and Falret.¹⁰ Another is the speculation that the news media were agents of transmission for the perturbation and excitement that sparked riots in many American cities in the late 1960s. Although we do not know the limits of "psychosis of association," just before World War II, Orson Welles's dramatic radio broadcast, "An Invasion from Mars," produced widespread panic in many parts of the United States for an entire evening. The third reason is that the historical records of the delusions and madness of crowds reveal the character of an age or a society because epidemics are psychosocial phenomena. They disclose prevailing beliefs and the afflicted group's conditions of life.

Redl¹¹ has proposed that mental contagion does not occur unless there are restraints to be reduced. This insight helps explain why epidemics appear not only at times when unfavorable social conditions are conducive to such outbreaks, but also at times of increased societal repression. From this point of view, the epidemics of hysteria in the Victorian Era can be seen as miscarried revolts against the sexual repression of that time. We will glance briefly at a few mental epidemics since they portray the existing social conditions, the sensibilities of the age, and the role of contagion.

In his classic work, *The Epidemics of the Middle Ages*, Hecker⁹ described behavioral and psychosomatic disorders as well as diseases such as the Black Death. He tells that the Dancing Mania "was propagated by the sight of the sufferers, like a demoniacal epidemic, over the whole of Germany and the neighbouring countries to the north-west, which were already prepared for its reception by the prevailing opinions of the times." This strange affliction, characterized by wild dancing, screaming, bodily distortions, mental aberrations, abdominal pain, and even convulsions, affected entire communities between 1374 and the beginning of the seventeenth century. Hecker reports that at one time it affected 500 inhabitants in Cologne and that once the streets of Metz were filled with 1100 dancers. In discussing the causes of this "mental plague," he mentions that the wretched and oppressed populace had been subjected to great natural

disasters, famines, and the “incessant feuds of the barons,” which resulted in miserable conditions, club law, and the corruption of morals. Furthermore, Hecker maintains that the disposition of mind peculiar to the Middle Ages accounted for the long duration of the “extraordinary mental disorder.”

This disposition of the mind and the violent tenor of life have been described by Huizinga in *The Waning of the Middle Ages*¹²: “So violent and motley was life that it bore the mixed smell of blood and roses. The men of that time always oscillate between the fear of hell and the most naive joy, between cruelty and tenderness, between harsh asceticism and insane attachment to the delights of this world, between hatred and goodness, always running to extremes. . . . A general feeling of impending calamity hangs over all. Perpetual danger prevails everywhere. . . .” Also, the times were characterized by general insecurity and, in Huizinga’s words, “. . . a sombre melancholy weighs on people’s souls.” Hecker believed that adverse social conditions (most of those afflicted were the poor and the oppressed) and a particular sensibility were basic factors for the development of epidemics, such as the Dancing Mania, that were spread by contagion.

In Italy, tarantism prevailed as a great epidemic in the sixteenth and seventeenth centuries. The predominant symptoms were melancholia, weeping, death resulting from paroxysms of laughter or tears, diarrhea, and a sensitivity to music. In fact, dancing to the tarantella relieved the symptoms. Hecker believed that these strange disorders, as well as the mass outbreaks of hysteria that he described, spread by “morbid sympathy” until they became real epidemics. He states that: “Imitation—compassion—sympathy, these are imperfect designations for a common bond of union among human beings—for an instinct which connects individuals with the general body. . . .” Thus, in the midst of societal disintegration, these strange diseases were spread “on the beams of light—on the wings of thought.”⁹

Although we would like to explain psychosocial illness by scientific theories, we cannot entirely dismiss the part played by sympathy and contagion. There is some evidence that psychosomatic illnesses spread by interpersonal contagion. Winkelstein¹³ investigated hypertensive patients’ household aggregates composed of both blood-related and nonrelated persons. The blood pressures of the nonrelated persons in the “hypertensive” households were higher than those of controls.

In 1943 Schuler and Parenton,¹⁴ in reporting on an epidemic of hysteria in a Louisiana high school, noted that descriptions of such phenomena were abundant in the medical literature in the nineteenth century but that recent publications on the subject had become rare. They concluded that the “phenomenon of the ‘mental epidemic’ is not exclusively historical, nor is it confined necessarily to ignorant and backward populations.”

In his comprehensive historical study, "Mental Epidemics: A Review of the Old to Prepare for the New," Markush¹⁵ describes 100 epidemics, 34 occurring between 1950 and 1973. One of them, reported by Champion and his colleagues in 1963,¹⁶ describes an outbreak of mass hysteria that occurred in a textile plant in South Carolina. Within a ten-day period, 62 employees (59 women) became extremely anxious—complaining of nausea, fainting, "almost fainting," headache, or dizziness—supposedly because of insect bites. Investigation of the epidemic showed no relationship between environmental factors and the outbreak of the epidemic, and a thorough search of the factory exposed only one biting insect, a mite. Champion and his colleagues attribute the epidemic to the "anxiety and mass hysteria [that] developed and gripped the plant."

This report is reminiscent of the epidemics of tarantism in Italy during the late Middle Ages when the victims imagined they had been bitten by tarantulas. Hecker⁹ concluded his description of tarantism with the assertion that the character of the age (the sixteenth and seventeenth centuries in Italy) was not favorable to freedom of thought, and, particularly, the miserable life of Italian women during the same time disposed them to tarantism. Hecker states: "Cheerfulness and an inclination to sensual pleasures passed into compulsory idleness, and, in many, into black despondency." Tarantism provided them with an opportunity to "burst forth from their prisons" and to obtain relief through the delights of music, dance, and revels from their lonely and deprived existences. After obtaining such relief, ". . . no one could call their self-deception a mere imposture, and unconditionally condemn it as such."

As we can see, epidemics bring into focus basic social psychiatric concerns about the nature of society and its influence on the health and illness of its members. The afflicted are usually the poor or those otherwise oppressed, and the ethos—fear rather than serenity—provides the ambience that is conducive to mass hysteria. In discussing the epidemics of mental illness that are being reported from many parts of the world, Jacobs¹⁷ emphasizes that the "social and cultural contexts are most important in defining why they take place when they do and where they do," and Kagwa¹⁸ refers to the basic similarity of mental epidemics "in man at different psycho-social developmental levels regardless of race or locale."

Historical Background

Two basic epidemiologic tenets—the selective, unequal distribution of disease within populations, and associations between diseases and life styles—originated with Hippocrates. In the first essay on ecologic medicine, "Airs, Waters and Places,"¹⁹ he described some specific psychosomatic afflictions and associated their frequency with certain sociodemo-

graphic characteristics and life styles. For example, among the nomadic Scythians, the wealthy, who spent almost all of their time on horseback, were relatively infertile. The men developed edema and severe varicosities of their lower extremities, while the fat, indolent women had menstrual difficulties: “. . . the monthly cleansing process does not take place in proper fashion, but is scanty and of short duration.” In contrast, the poor, who walked or ran while the tribes moved from place to place, did not have these afflictions: “. . . for no sooner do [their female servants] have intercourse with a man than they become pregnant, this being due to their lives of hard toil and to the sparseness of their frames.”

Also, child-rearing practices—in conjunction with constitutional factors—were associated with differences in fertility. The wealthier Scythians did not swaddle their children; instead, they just allowed them to ride in wagons. Although Hippocrates does not state explicitly that the children were neglected by not being swaddled, he intimates that these customs were conducive to the development of constitutional deficiencies and their infertility.

The nonrandom distribution of disease within a population has been observed repeatedly and demonstrated conclusively by Hinkle and his colleagues²⁰ prospective studies of five different populations. In each of the groups, during 20 years of adult life, 25% of the members experienced approximately 50% of all the episodes of illness. In contrast, the healthiest 25% in each group experienced less than 10% of the total number of illness episodes (see Chapter 14).

Host, Agent, and Environment

With the advent of microbiology in the nineteenth century, the age-old concepts of the epidemic constitution of the atmosphere, individual predisposition, and contagion were elaborated into the classic triad—host, agent, and environment. This model holds that interactions among host, agent, and environment are responsible for illness. But successful epidemiologic studies had led to control and prevention of some infectious diseases even before specific etiologic agents were identified. One classic example is John Snow’s²¹ study of the cholera epidemics in London (1848–1855) which showed that cholera was produced by drinking water contaminated by sewage. This remarkable achievement occurred more than 20 years before Koch discovered the cholera vibrio.

Even for the infectious diseases, however, the relative importance of the three elements in the model varies considerably. For example, in smallpox the virulence of the agent is usually a much more significant factor than characteristics of the host or of the environment, whereas in

tuberculosis, the host and environmental factors are generally of predominant importance.

The germ theory of disease superseded the miasma (Greek: defilement, akin to pollute) theory. The miasma theory of disease originated with Hippocrates' descriptions of the *Epidemics* and was developed by Galen in the second century and by the great Persian physicians in the ninth and tenth centuries. The miasma theory indicted foul vapors as being responsible for the transmission of disease; such pestilential air could be produced by numerous factors, including adverse meteorological conditions (Hippocrates' constitution of the atmosphere), filth, and putrefaction of decomposing animals and humans. The miasma theory lasted until Pasteur's revolutionary discoveries in the middle of the nineteenth century.

The discovery of the role of microorganisms in disease processes identified the agent in the host, agent, and environment triad and led to explorations of the interactions among the three elements. The results were increasing knowledge about host factors, such as susceptibility and resistance, immunology, and eventually, the magnificent therapeutic triumphs of the antibiotic era. In the early decades of this century scientists began to dream that they would find specific etiologic agents for all diseases. Although the simplicity of the model and its demonstrated utility are appealing, emphasis was focused almost exclusively on the agent and the host characteristics, with relative neglect of environmental influences that now appear to be of considerable import for psychosomatic and psychiatric conditions.

Epidemiology's applicability to the study of noninfectious diseases was demonstrated by Goldberger's²² work on pellagra in the southeastern United States from 1916 to 1920. He showed that this seemingly mysterious, complex disease, characterized by the "three D's" (dermatitis, diarrhea, dementia), was caused by a deficiency of niacin. The prevalence and seriousness of pellagra in this country was first noted by Searcy, who, in 1907, called attention to the many cases of endemic pellagra in a mental institution in Alabama. In the early years of this century the United States Public Health Service estimated that pellagra accounted for about 10% of admissions to state mental hospitals in the southern states.²³ As a result of Goldberger's work and the widespread use of the B-Complex vitamins (especially nicotinic acid), pellagra became a rare disease. However, beginning with the youth movements—and their dietary fads—in the late 1960s, pellagra has become more common. With numerous achievements in the field of infectious diseases that have led to treatment and prevention, epidemiologists are now challenged by the necessity to study chronic diseases, psychosomatic syndromes, and the mental and behavioral disorders.

But the limitations of the host-agent-environment model, even in terms

of its applicability to psychosomatic syndromes, are being acknowledged only reluctantly. Its success in accounting for many of the infectious diseases has led to a preoccupation with single-factor etiology. At our current level of knowledge in psychiatry, the search for single-factor etiologies has been fruitless, and perhaps a handicap. Malamud²⁴ states: "The premature search for cause and effect relationships has doomed much psychiatric research." Thus, we are compelled to conceptualize psychiatric illnesses as conditions produced by multiple synergistic factors, such as genetic defects, learning and developmental difficulties, stressors, disturbed interpersonal relationships, inimical life styles, deprivation, adverse social influences, and other environmental processes. Furthermore, during the last few years we have been hearing about the necessity to develop a more sophisticated miasmatic theory of disease to obtain a greater understanding of these baffling illnesses.²⁵

Thus, we are returning to some principles of classical Greek thought. Brock²⁶ has written: "To Hippocrates and Galen, then, the *Physis* or *Organism* was the first term in the equation of life. And the second term was—the *Environment*. They saw life as a constant interplay between organism and environment. Hence to them there was a greater unity than even the organism itself, and that was life—Life, of which the two poles were *Organism* and *Environment*." That unity has particular meaning for psychiatric epidemiology. Host factors and environmental factors conjoin; indeed, they are so inseparable that we have no choice but to accept a unitary view of man and environment. Bleibtrau,²⁷ in writing about the impact of urbanization on human evolution, points out that the boy in the tenement marries the girl next door and therefore genetic and socioenvironmental factors are codetermined. And, after three decades of research on health and illness in various populations, Hinkle²⁸ asserts that we should maintain "a unitary view of the man-environment relationship" and abandon "the needless dichotomy of a 'physical' and a 'social' environment."

A natural environment scarcely exists; it has been replaced by a man-made one in which, as Christenson and Hinkle²⁹ state, the interactions between "men and the world in which they live are so complex that it is a gross oversimplification to attempt to explain 1 or 2 of their categories of illness simply on the basis of the way they ate, how much they smoked, what happened to them in the childhood, or in the way that they react to their present occupations." This point of view about etiology is emphasized by Stallones³⁰ in his editorial on community health. He deplores a reductionist approach, advocates a "synthetic systems-oriented approach" to the study of illness, and exhorts us to be concerned with "clusters of causes and combinations of effects."

On his deathbed, Pasteur is reputed to have said: "Ce n'est pas le microbe, c'est le terrain." ("It is not the microbe, it is the soil.")

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4

Epidemiologic Terms, Concepts, and Levels of Investigation

The epidemiological method is the only way of asking some questions in medicine, one way of asking others, and no way at all to ask many.

—JEREMY N. MORRIS¹

In an epidemiologic study the conceptualization and definition of the problem are the primary requisites. Conceptualization involves a frame of reference for ordering one's thoughts coherently, the formulation of hypotheses, and the development of methods and strategies for testing hypotheses. For example, the comprehensive epidemiologic investigation of psychiatric disorder in the community, the Stirling County Study,² had a highly developed conceptual basis. The problem to be studied was possible relationships between levels of community integration-disintegration and the prevalence of mental illness in various communities in the county. The researchers first conducted preliminary fieldwork to obtain information about the human ecology and other environmental characteristics of the area. Then they developed measurable indices of community integration-disintegration (the independent variable), methods for case-finding, and an operational definition of mental illness (the dependent variable).^{*} They postulated bridging mechanisms that offered explanations for relationships between two sets of variables. Such a conceptualization of the problem enabled the investigators to formulate and test hypotheses about relationships between the independent and dependent variables; for example, their results supported the hypothesis that disintegrated communities contained

* Independent variables, theoretically, are events or conditions that are not influenced by the dependent variables (e.g., health or illness) being studied. In the social and the health sciences, it is difficult to find or even to conceptualize variables that are truly independent, especially from an ecological perspective that views man and his social and natural environments as reciprocally influential and, thus, interrelated.

more mentally ill persons than the integrated communities. (See Chapter 11.)

Hypotheses

The word *hypothesis* is derived from the Greek—"foundation," "supposition." Morris³ insightfully observes: "How useful hypotheses are generated is little understood. They are products of their Age—of what is known and thought, what is 'in the air'—and of the individual imagination." Testing hypotheses is the essence of the scientific method. Explicating hypotheses enables the investigator to maintain scientific rigor, and allows other researchers to replicate the investigation and obtain findings that do or do not support the hypotheses being tested. The results are used for theory building from which more general laws may be formulated. Hypotheses, therefore, are the foundations of science.

The ideal epidemiologic hypothesis, as outlined by MacMahon and Pugh,⁴ should include:

1. The population—the characteristics of the persons to whom the hypothesis applies
2. The cause being considered—the environmental exposure
3. The expected effect—the disease
4. The dose-response relationship—the amount of the cause needed to lead to a stated incidence of the effect
5. The time-response relationship—the time period that will elapse between exposure to the cause and observation of the effect.

MacMahon and Pugh emphasize that each of these elements should be specified as precisely as possible. But in psychiatric epidemiology such a complete hypothesis is an ideal; at best, we can only specify the population, make frail assumptions about cause, and work with diluted, controversial definitions of illness. Dose- and time-response relationships can be only crudely propounded. For example, Brenner⁵ recently found that indices of economic recession were associated with the increased use of mental health facilities in New York State.

But we are beginning to develop tools that will allow us to approach quantification of dose-response and time-exposure relationships. For example, life event scales, such as Holmes and Rahe's⁶ "Social Readjustment Rating Scale," and Paykel and his colleagues'⁷ "Life Events Scale," weight stressful life events as numerical life crisis units (LCU) that can be summed to provide a total score for the "amount" of stress sustained by a person within a given time period, and thus quantify a possible independent variable or assess dose- and time-responses.

Problems with Case-Definition

Major problems with case-definition (often the dependent variable) continue to handicap researchers conducting epidemiologic studies of

mental illness. Few mental illnesses meet criteria that permit the investigator to define them as discrete diseases. The Brooklyn-Netherne Study⁸ which compared admission diagnoses—schizophrenia and manic-depressive illness—in a typical urban mental hospital in New York City (Brooklyn State Hospital) with one in London (Netherne Hospital) showed that there were extremely large differences between the two. To illustrate, 65% of the admissions to Brooklyn were diagnosed as schizophrenia and only about 10% as affective disorders, while at Netherne 34% were diagnosed as schizophrenia and almost 39% as affective disorders. Cooper, one of the principal investigators in that U.S.-U.K. diagnostic project, states that such large differences “are artefacts due to differences in the diagnostic practices of the psychiatrists and differences in the recording systems.”

After patients in the two hospitals were evaluated by trained project psychiatrists, the schizophrenia diagnoses in Brooklyn were reduced from 65% to about 32%, and the affective diagnoses increased from 10% to about 36%. In Netherne, the schizophrenia diagnoses were reduced from 34% to 26%, and the affective diagnoses raised from 38% to 47%. Cooper concludes: “The only real difference in the patients seems to be that rather more patients with affective disorders, that is mainly depressive illnesses, are entering Netherne than are entering Brooklyn.” Thus, case-definition is complicated by lack of consensus in clinical judgment and also by communities’ and hospitals’ variable admission practices.

Other problems with case-definition are that some psychiatric disturbances are only syndromes, or symptoms indicative of personal anguish, interpersonal dilemmas, or both. The symptoms are often vague and evanescent; they cannot be used precisely for case definition.

In the conceptualization and definition of a problem in psychiatric epidemiology, we see that many difficulties hinder studies of mental illness in the general population. But these difficulties are reduced in more limited studies of more circumscribed groups. One classic early study was conducted by Farr,⁹ a pioneer in epidemiology and the father of vital statistics, who investigated relationships between imprisonment and mortality in England in 1837. Farr compared age-controlled mortality rates among prisoners with rates in the general population. Prisoners’ mortality rates were higher; but Farr noted that deaths from execution contributed only slightly to the prisoners’ higher rates (only eight criminals were executed in England and Wales in 1837). In such a study, the population at risk, i.e., the prisoners, could be clearly specified; the dependent variable, mortality, could be measured, and the obtained rates could be compared with those of other populations.

Farr presented his findings clearly:

<i>Annual Deaths to 1,000 Living</i>			
Sweden 1811–30	Belgium 1829	England and Wales 1813–30	English Prisons, Mich. 1826–31
8	9	10	16

Here it will be observed at a glance that the mortality in the English prisons was 60 per cent higher than the mortality at the same ages in England and Wales.

From his studies, Farr concluded that the causes of the prisoners' higher mortality rates were diseases "due to deficient ventilation, cold, sedentary occupations, and the want of exercise, a listless if not dejected state of mind, and poorness of diet."

Case, Risk, Population at Risk

Case and *risk* are two basic epidemiologic concepts. A case is defined as an instance of illness or injury. *Case* denotes an event (symptom, sign, or laboratory finding as well as disease) referable to persons. *Risk* denotes hazard, especially exposure. Relative risk is the ratio of the rate of the disease among those exposed to the rate of the disease among those not exposed. The term "attributable risk" connotes causation; it is the rate of the disease in persons exposed to the etiologic agent minus the rate of the disease in persons not exposed.

The following vignette illustrates the concept of risk, particularly attributable risk.

Eight employees who worked on the production line of a small thermometer factory were referred for neurologic and psychiatric evaluations after they had become ill with symptoms of memory loss, difficulty in concentration, lowered mood, generalized nervousness, and the relatively sudden onset of tremors. A few months prior to the outbreak of this epidemic, the factory's production quotas had been raised significantly, increasing employees' exposure to mercury. Laboratory findings confirmed the diagnosis of mercury poisoning in all of the cases. Some of the patients had residual memory loss after the illness had been diagnosed and treated. The number of employees exposed was the 60 who worked on the production line; therefore, the rate of illness was 133 per 1,000 in 1970 in that factory ($8/60 \times 1,000$). Since the rate of mercury poisoning in the nonexposed is practically zero, the attributable rate in this instance is 133 per 1,000.

Such clear-cut examples are uncommon in psychiatric epidemiology. But it is hoped that, as knowledge about mental illness increases, other comparable dangerous situations will be identified early so that preventive and therapeutic measures can be instituted promptly and efficiently.

The *population at risk* is a fundamental epidemiologic concept indicating the number of persons who could possibly be affected by a specific disease or event. For example, in the United States, the population at risk for mental illness includes the entire 210 million people in the nation, since any person—child, adult, male, female—can become mentally ill. In studies of discrete areas, such as the Stirling County Study² or the Midtown Manhattan Study,¹⁰ the population at risk was the total number of adults in Stirling County or in the area of New York City under investigation. Both of these studies excluded subjects under the age of 20, and, in

the Midtown Manhattan Study, those over the age of 60 also were excluded; thus, for research purposes, the populations at risk were age-restricted.

In epidemiologic investigations of illness among factory employees and prison inmates, the population at risk is the total number of employees or inmates, respectively. In epidemiologic studies of postpartum psychosis, for example, the population at risk is the total number of women delivering babies during a specified period of time.

Counting

Case-counting with accuracy is one of the fundamentals of epidemiologic methodology. The *frequency* of a symptom, sign, or illness is the number of cases in the population. Frequencies are expressed as *rates*—the number of cases per unit of population during a specified period of time, usually the number per 1,000, 10,000, or 100,000, in order to facilitate comparisons. Epidemiologists use three items of information to express rates: the number of cases, *the numerator*; the number in the population, *the denominator*; and *the time period*. For example, since there were 1,920,120 cases (the numerator) admitted to all psychiatric facilities in the United States from a total civilian population of 201,722,000 (the denominator) in 1970 (the time period), the rate of admissions for that year was 951.9 per 100,000.¹¹

The *prevalence* is the total number of cases in a given population at a particular time. Conventionally, prevalence rates are expressed as:

1. Point prevalence—the number of cases at a certain point in time, usually a designated day or week.
2. Period prevalence—the number of cases, new and existing, during a specified period of time, usually a month or a year.
3. Lifetime prevalence—the number of persons who have had the event or disease at least once during their lifetimes.

In the Midtown Manhattan Study the investigators were concerned with point prevalence, the existence of symptoms of mental disorder and impairments of social functioning at the time that the respondent was interviewed. For example, an item about gastrointestinal symptomatology was worded: “Now about such things as appetite, would you say your appetite is poor, fair, good, or too good? [Of the 1,660 respondents, 4.7% reported “poor.”]”¹⁰

The Florida Health Study, conducted by Schwab, Warheit, and their colleagues, used period prevalence. For example, the following item (which was found to have a very high correlation with psychiatrists’ ratings of the degree of social psychiatric impairment) was worded: “In the last year, how often did you feel that you might have a nervous breakdown or that you might lose your mind? Would you say: All the time? Often?

Sometimes? Seldom? Never? Don't know? [Of the 1,645 respondents, 0.6% reported "all the time," 1.5% "often," 6.3% "sometimes," 9.4% "seldom," 82.2% "never," and 0.5% respondents did not know or did not answer.]"

Period prevalence is used often in psychiatric epidemiology, especially in field studies or survey research, since it is difficult to interview a large number of patients or subjects on a designated day, or to refer their "caseness" to a given day. Period prevalence gives the researcher an estimate of the number of persons in the population who have or have had symptoms or illnesses during the designated time period but mixes incidence and prevalence and thus has limited value for causal investigations. Although point prevalence is more difficult to obtain, it should supply more accurate information about the frequency of disease at a given time.

In the Stirling County Study² the investigators used lifetime prevalence. Lifetime prevalence yields a different type of information than does period prevalence or point prevalence.

Incidence, in contrast to prevalence, refers to the number of *new* cases in a defined population during a specified time period, usually a year but sometimes a shorter time period, particularly for epidemics. Feinstein¹² emphasizes the distinction between incidence and prevalence: *Incidence is the rate of appearance of cases, while prevalence is the rate of existence of cases*. Incidence rates can be summed and corrected for excess mortality to provide estimates of one's *life chances*—the probability that an individual will be afflicted by a particular disorder up to a certain age or during his lifetime.

Levels of Epidemiologic Investigation

Ideally, the investigation of a problem in epidemiology proceeds through sequential stages involving increasingly complex methodologies to attain scientific objectives such as the uncovering of factors leading to illness, or evaluating treatments, or developing preventive measures. In psychiatric epidemiology, we are compelled to recognize the limitations of our present knowledge and methodologies. Nevertheless, recent studies are laying the necessary groundwork for advances by providing information at the descriptive and analytic levels and by looking into hypothesized *associations* between socioenvironmental factors and mental illness.

The basic level of epidemiologic investigation is the *descriptive*, the phenomenological approach. This entails the collection of data that present the extent of the problem in terms of person, place, and time. Characteristics of the *person*—age, sex, race, social class, etc.—identify target groups. Characteristics of *place*, such as conditions in a ghetto, point more to environmental influences. Characteristics of *time* reveal trends such as the increase or decrease of an illness over time, cyclic changes, and short-term

fluctuations. For example, the high suicide rate in April provides information about the natural course of depressive illness.

Descriptive epidemiology furnishes basic information about an illness and provides data that can be used for meaningful comparisons among groups over time. The data for such comparisons are particularly useful when they are adequately controlled and expressed, not just as crude rates, but as rates according to age, sex, race, and other characteristics. For example, the collaborative study of "Psychiatric Disorder in a Swedish and a Canadian Community," carried out by Leighton, Hagnell, and their colleagues,¹³ compares some of the findings from the Stirling County and the Lundby studies (see Chapter 12). The likelihood of having a psychiatric disorder in the age group 20–29 for women was higher in Stirling County (0.39) than in Lundby (0.26). (The figures are the mean ridits [the ridit is an index relative to an identified distribution] which express the probability of being a case. See page 169.) When making comparisons about illness rates between populations that differ in terms of a characteristic (e.g., age distribution), age-standardized rates are calculated to enable the investigator to compare the populations with the assurance that any differences observed are due to factors other than age.

An example of descriptive epidemiology is Malzberg's study of first-admission rates to New York civil state hospitals, in which he found a dramatic increase in rates for psychoses with cerebral arteriosclerosis over the 30-year period from 1920 to 1950. Because the number and proportion of the elderly in the population had also increased during those years, and since cerebral arteriosclerosis is more common among the elderly, he asked: "What would have been the rates of first admissions with psychoses with cerebral arteriosclerosis in 1930, 1940, and 1950 if the general population of New York State had had the same age and sex proportions as in 1920?"¹⁴ When Malzberg adjusted or standardized the age and sex rates using the 1920 population as the standard, he found that the rate for cerebral arteriosclerosis admissions was almost 200% higher in 1950 than in 1920 (the corresponding increase for all mental disorders was only 37%). In particular, his standardization for age ruled out the possibility that the increased rates could be attributed solely to the increased number of the elderly in the population. He hypothesized, however, that advances in medicine had extended the life expectancy for many who, in an earlier generation, would have died before reaching middle age; consequently, there would be greater *numbers* of persons susceptible to psychoses caused by the degenerative processes, cerebral arteriosclerosis and senility.

In discussing diseases commencing in middle age, Morris¹⁵ points out: "Disease that does not become apparent until after the end of the reproductive period is not subject to the forces of natural selection in the same way that diseases effective in younger age groups are. Because selection is less powerful, genetic factors may be particularly strong in the

aetiology of disease affecting older age groups. The genes are still likely to have their effects conditioned by the environment, however, and this is in principle controllable." Examples noted by Morris are the declining incidence of stomach cancer in the United States and the rising incidence of lung cancer. Environmental factors in the first example would be dietary changes, and in the second would be smoking—both of which are related to life styles.

Although descriptive epidemiology has value primarily for phenomenological and comparative purposes, it is the essential first step toward more sophisticated analytic and experimental research in the field. Also, it is needed because psychiatry's body of knowledge is incomplete without a descriptive background. In the major textbooks of psychiatry, only small paragraphs are devoted to the epidemiology of the various disorders because of the paucity of available scientific information. Some authorities are compelled to state that: "Very little can be said about the epidemiology of depressive neurosis."¹⁶

The second level of epidemiologic research has been designated by Markush¹⁷ as the *investigative*. At this level, studies are aimed at detecting and understanding sudden changes in the frequency of mental illnesses. These studies are usually concerned with epidemics and are carried out by obtaining information about the afflicted population, symptomatology, the rate of appearance, natural course, transmission (usually interpersonal contacts), the prevailing emotional climate, unusual events, and other sociocultural factors. Also, such studies look at possible reasons for decreased incidence.

The value of such investigative epidemiology is illustrated by McEvedy and Beard's¹⁸ reports in 1970 on the 1955 epidemic of benign myalgic encephalomyelitis at the Royal Free Hospital in London and 15 other such outbreaks of this new disease. At the Royal Free Hospital, 300 staff members—not patients—became ill during a short period of time with complaints of malaise and slight fever, the subjective features of hyperventilation, and both evanescent and bizarre neurologic symptoms in the extremities that often followed a "stocking-glove" distribution. The investigators' retrospective study disclosed that certain clinical features were common in all the outbreaks, and the accumulated laboratory data revealed little or no supporting evidence for the possibility that this had been a new viral illness. McEvedy and Beard concluded that these outbreaks were psychosocial phenomena which should be termed "myalgia nervosa" rather than "benign myalgic encephalomyelitis." An editorial in the *British Medical Journal*, entitled "Epidemic Malaise," supported their contention and pointed out that these outbreaks really were "epidemic anxiety states."¹⁹

Investigations of epidemics entail the following requisites and methods (adapted from LeRiche and Milner).²⁰

1. Establish the fact that an epidemic exists—“The definition of an epidemic is the occurrence of new cases of a disease beyond usual expectation, at a particular time, among a certain population.”
2. Verify the diagnosis.
3. Divide the group to be studied into definite, probable, and suspect cases in a particular community or geographic setting.
4. Compare the incidence of the disease with the usual incidence in that particular situation.
5. Locate the outbreak in terms of person (age, sex, race, occupation, residence), place (geographical subdivision, building, room), and time (date of first case, occurrences per hour, day, week, etc.).
6. Classify according to mode of transmission (interpersonal, news media, etc.).
7. Identify groups selected for attack and search for common factors.
8. Arrange for care of the ill.
9. Prevent the spread of the condition.
10. Undertake special investigations as indicated.

The third level of epidemiologic investigation, the *analytic*, involves testing hypotheses and searching for associations with environmental factors that may have etiologic, prognostic, and therapeutic significance. Analytic methods can be applied also to the study of the utilization of mental health delivery systems.

One type of analytic epidemiologic research is the *retrospective case-control study*. The investigator begins with a group of identified cases, the experimental group, and searches for events or conditions in the past that are hypothesized as having significance. A similar search is made then of one or more control groups without cases at the onset of the study. The control group(s) should possess sociodemographic characteristics similar to the experimental group and other characteristics selected to meet the research design.

An excellent sample of a retrospective case-control study is that of Kety, Rosenthal, Wender, and Schulsinger,²¹ who investigated hereditary aspects of schizophrenia by collecting identifying information on about 5,500 adoptees in the Copenhagen area between 1923 and 1947. According to their research criteria, they found 33 cases of schizophrenia from the psychiatric register. These probands (index cases) were then individually matched for age, sex, etc., with adoptees who were not listed in the psychiatric register—the control group. The investigators tested two opposing hypotheses:

1. If schizophrenic disorders are heritable, we should find a higher prevalence of such disorders among the biological relatives of our schizophrenic index cases than among the biological relatives of the matched controls.

2. If schizophrenic disorders are transmitted behaviorally, and at least in good part by rearing parents whose own behavior is confused, disorganized, erratic or chaotic . . . we should expect that the index cases would have a greater number of adoptive relatives with schizophrenic disorders than would be found in the adoptive relatives of the controls.²³

This adoptees' families design is shown in Figure 1.

Probands	Relatives	
	Biological	Adoptive
Schizophrenic		
Control (nonschizophrenic)		

Figure 1. Adoptees' family design (adapted from Rosenthal²²).

After identifying the biological and adoptive relatives—parents, siblings or half-siblings—in both the proband and control groups, the investigators searched the register for both types of relatives' psychiatric histories. The biological relatives of the schizophrenic index cases had the "highest concentration of schizophrenic spectrum disorders. . . . The rates for such disorders did not differ appreciably [from each other] in the other three cells."²² Rosenthal states that the results support the hypothesis that hereditary factors are influential in the etiology of schizophrenia, but points out that the study design was not a true four-fold table since the adoptive relatives were a highly selected group who had been screened—as a prerequisite for adoption—to rule out the presence of mental illness. Thus, Rosenthal notes that comparisons can be made between the two groups of adoptive relatives, but that comparisons between the biological and adoptive relatives might not be valid.

Another method employed in analytic epidemiology is the *prospective study* in which the population is defined according to specific, common characteristics that are hypothesized as placing the population at risk. This population, the *cohort*, is then followed over time to detect the occurrence of disease.

Perhaps the most sophisticated cohort study that used analytic epidemiologic methods is the investigation carried out in Lundby, Sweden, on the 2,550 inhabitants of two parishes by Essen-Möller²³ in 1947 and by Hagnell²⁴ in 1957 (see Chapter 12). An example of the use of a hypothesis and the prognostic value of a longitudinal cohort study is illustrated by one of the findings reported by Hagnell.

In Essen-Möller's original examinations of the cohort in 1947 he questioned each subject about a history of nine organic illnesses. He had a special interest in possible relationships between physical illness and

mental illness, and hypothesized, for example, that persons who reported "proneness to infections" would be a high-risk group for developing mental illness. When the population was reexamined in 1957, Hagnell found that 20% [N.S. (not significant)] more men and 50% ($p = 0.00001$) more women who originally reported "proneness to infections" had developed mental illness during the ten years than would be expected if they had had the same age-specific mental illness rates as all the men and women in the study.

Prospective studies, such as the Lundby Study, using data gathered about a cohort at two periods in time, provide information that can be used to estimate the *cumulative individual risk*. This is calculated by summing the incidence rates for the specific age groups constituting the age span under consideration. (For example, in this study the age span was up to 60 years.) The sum of these rates (X number per 1,000, 10,000, etc.) was expressed in terms of the individual's risk or chance of developing the condition, e.g., one in five, one in ten, or as a percentage. Hagnell found in the Lundby cohort that the estimated cumulative risk of developing a psychiatric disorder for a lifetime up to the age of 60 was 43.4% for the men and 73.0% for the women. Since the follow-up study covered a ten-year time period, the investigators were also able to determine risks of developing a serious disorder that would last, for example, for more than three years; this was found to be 5.5% for the men and 13.7% for the women. And the estimated risk for developing specific disorders, such as schizophrenia, in the age group up to 60 years, was 2.1% for the men and only about 0.7% for the women; the estimated cumulative risk for both sexes was about 1.5%.²⁵

The fourth level of epidemiologic investigation is the *experimental*; it involves either manipulation of persons, life styles, and environmental factors, or the study of "natural experiments." Because experimental epidemiology involves proof by control and by replication, in psychiatry and the other behavioral sciences we often resort to primate studies, and we need to be alert to *experiments of opportunity*—studies of groups that are being subjected to new or changed circumstances voluntarily or for other reasons.

A classical example is Spitz's²⁶ studies of children who had been evacuated from London during World War II to escape the bombings. Some of those separated from their mothers and placed in nurseries had far higher than expected infant morbidity and mortality rates. Spitz found that the higher rates were associated with the absence of mothering; in nurseries where the attendants provided mothering and nurture, the morbidity and mortality rates were not excessive.

Since then, Harlow and Harlow²⁷ have worked extensively with the separation of infant primates from their mothers. They and others²⁸ have shown that the separated infant develops anaclitic depression.

Studies of human beings in special situations, such as prisons or concentration camps, yield only specific types of information because such populations are highly selected, precluding meaningful comparisons and generalization to the larger population. Also, the findings are limited by multiple environmental and host factors occurring in such drastic situations.

But the numerous manifestations of rapid social change, such as those presented by the busing of school children to achieve desegregation, supply psychiatric epidemiologists with “natural experiments”—opportunities to carry out prospective, reasonably well-controlled investigations. In essence, an entire generation is being manipulated; this situation offers investigators research possibilities from which they can glean much information about human behavior, both pathological and adaptive.

In commenting on experiments of opportunity, Morris²⁹ notes that they are abundant in the modern world, but that the effects of social change in the developing countries are being studied “too little and too late.” He insists:

Social groups then are a large part of the social environment that is crucial in mental health. There has been far too little systematic study of individual capacity and social well-being, and of neurosis and incapacity, in relation to group membership; and epidemiological methods have been too little applied to these questions. Experiments of opportunity are ubiquitous and promising: it is often a reasonable beginning that people bring similar personal predispositions with them into different social environments. Different schools drawing the children from families living in the same neighbourhood—yield very varied delinquency rates; recruits may in effect be randomly selected into different military units—with what consequences in health?; different factories engage workers with presumably similar personality difficulties—and produce diverse rates of accidents, sickness-absence, labour turnover, etc.; similar patients are admitted to district mental hospitals—with what variation in secondary disability? . . . The prospects are bright for the joint enterprise of epidemiologists, students of social structure and of group dynamics.

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5

Raw Materials and Tools

PART 1: SECONDARY SOURCE DATA

Even the careful and sober testing of our ideas by experience is in its turn inspired by ideas: experiment is planned action in which every step is guided by theory. . . . The old scientific ideal of epistēmē—of absolutely certain, demonstrable knowledge—has proved to be an idol. . . . Only in our subjective experiences of conviction, in our subjective faith, can we be ‘absolutely certain.’

—KARL POPPER¹

The psychiatric epidemiologist’s raw materials are data about mental illness obtained from secondary or primary sources. Secondary source data can come from various records and in many forms, usually compilations of the numbers of admissions, diagnoses, treatments, and discharges of patients using public facilities (e.g., mental hospitals, Community Mental Health Centers), or data from death certificates, or reports from the National Center for Health Statistics, the Bureau of the Census, etc. Plunkett and Gordon² call these data “secondhand information,” since they are compiled by persons other than the investigator. In contrast, primary source data generally are obtained directly by the investigator from patients or other respondents. Plunkett and Gordon call such original data “firsthand information.”

In this section we will look at the uses of secondary source data, particularly some of the findings from studies for which such data were the investigators’ raw materials. Also, we will present the trends in psychiatric hospitalization and suicide, as disclosed by reports from the Bureau of the Census and the National Center for Health Statistics. Then, we will summarize the limitations and the appropriate use of secondary source information and conclude with a brief description of social indicator analyses and the key informant approach to estimates of the prevalence and distribution of mental illness and the utilization of mental health facilities.

Historical Background

Studies using data obtained from mental hospital records of the number of admissions, discharges, and simple classifications by age, sex, race, and diagnosis have been the backbone of psychiatric epidemiology. Such investigations, relying on data from treatment facilities, are known conventionally as *rates-under-treatment* studies.

The case register, established in 1775 by the British Parliament's *Act to Regulate Madhouses*, has been used for two centuries as a data source by early psychiatric epidemiologists such as Black in 1810, Burrows in 1820, Daniel H. Tuke in the latter part of the nineteenth century, and by others since then. In the United States, Pliny Earle's³ *History of the Bloomingdale Asylum* in 1848 used the annual reports to determine trends in admission and discharge rates and to speculate on the causes of insanity. He cited pecuniary difficulties and want of employment as the most common causes of mental illness requiring hospitalization. But he maintained insistently that numerous patients were shuttled back and forth between the almshouses and the asylum so frequently that he could not make accurate reports of the number of the mentally ill. Comparable situations still exist, restricting the utility and validity of secondary source data.

Early studies reported only *crude rates*, e.g., the number per 100,000 or the percentage of the population; they supplied limited information that could not be used extensively for meaningful comparisons since the populations being compared might vary considerably in age or sex distributions. More sophisticated epidemiologic strategies have been developed in this century. For example, Malzberg's⁴ analyses of reports of first admissions to New York civil state hospitals, 1910–1950, included standardizations for age, sex, race, place of residence, migration, etc. Such *rate standardizations* control for age or sex or other characteristics of the population that might influence the crude rate. As we saw in Chapter 4, it is necessary to “neutralize” age or other factors in order to make meaningful comparisons over time or with rates from countries in which the proportion of the elderly in the population is not increasing as rapidly as in the United States.

Goldhamer and Marshall: Psychosis and Civilization⁵

An excellent example of a study that used secondary source information is Goldhamer and Marshall's analysis of first-admission rates to mental hospitals in Massachusetts over the century 1840–1940. They compared age-specific first-admission rates to mental hospitals from 1840 to 1885 with age-specific first-admission rates during the years 1939–1941 to determine possible differences over 100 years. To obtain nineteenth century data, the

investigators gathered the records of first admissions to Massachusetts state mental hospitals, almshouses, county institutions, and private hospitals; the mentally ill in prisons, jails, etc., were omitted. Twentieth century data included records of first admissions to public, private, and Veterans Administration Hospitals. The crude rates per 100,000 population in 1939–1941 exceeded those of the previous century, but adjusting the rates for age and comparing those in ten-year intervals—ages 20–29, 30–39, etc.—with their counterparts in the 1840s showed that first-admission rates for persons under the age of 50 were just about the same in 1939–1941 as they had been a century earlier. Goldhamer and Marshall concluded that mental illness sufficiently severe to require hospitalization had not increased over 100 years for persons under the age of 50. By using standardized age-specific rates, they reached different conclusions from those of researchers comparing only crude rates. To find sophisticated associations and to answer specific research questions, many epidemiologic investigations standardize their data for sex, race, social class, marital status, etc., as well as for age.

But even after standardizing the rates for age, there was a great increase in the first-admission rates for older groups in the twentieth century compared with the nineteenth century. Higher rates of hospitalization for older age groups in 1939–1941 could be attributed to a greater tendency to institutionalize senile persons and the elderly with arteriosclerosis. However, Goldhamer and Marshall could not rule out the possibility that there had been an actual increase in the incidence of cerebral arteriosclerosis.

Using secondary source data derived from 1940 New York State records, Goldhamer and Marshall also were able to calculate *expectancy measures*, the probability that a person of a certain age, from a defined population, would be hospitalized for a mental illness at some time during his life. Certain variables—such as life expectancy at a given age and first-admission rates at that age and during the succeeding years of expected life—enter into such expectancy measures. Obviously, with a longer life expectancy, the person will be at risk for mental disease for a longer period of time. Goldhamer and Marshall's "conditioned probability" estimates indicated that the chances of first admission to a mental hospital for a male living to age 30 was 1.49 per 100, for a female, 1.26 per 100; for males living to age 60, 5.79 per 100, for females, 5.11 per 100; and, for males living to age 80, 12.76 per 100, for females, 11.14 per 100.⁵

Hagnell⁶ calculated that the estimated cumulative risk up to the age of 80 for admission to a mental hospital in Sweden (equivalent to a New York State hospital) was 4.1% for men and 5.5% for women.* The expectancies

* The risk for admission to a psychiatric hospital of any type in Sweden up to the age of 80, including psychiatric units in general hospitals, was 10.8% for men and 18.6% for women.

calculated by Goldhamer and Marshall were 12.8% for men and 11.1% for women up to the age of 80. Thus, the risk of hospitalization was higher in New York State than in Sweden, particularly for men and women age 60+. (Expectancies for psychiatric hospitalization up to the age 60 in Sweden were 2.5% for men and 3.6% for women; in New York they were higher, 5.8% for men and 5.1% for women.) But, as we saw in Chapter 4, Hagnell was able to calculate expectancy measures of developing a disorder, not just the expectancy for admission, since he used primary source data gathered from surveys of the general population in Lundby, Sweden, in 1947 and 1957, as well as data obtained from hospital records.

Strömgren⁷ has emphasized that, while administrative authorities are usually interested mainly in prevalence rates, biologists want to know "the 'morbidity risk' or 'expectancy' for certain diseases . . . the expectancy is of much more biological value than the actual frequency at a certain moment in the population." He notes that the expectancy rates will always be higher than the prevalence rates because part of the population will die before they have lived through the risk period and because diseases tending to increase mortality "will lead to an underrepresentation of such trait-carriers in the population."

Expectancy rates can be converted to frequency rates using the expectancy for each age group, the age distribution of the population, and the mortality rates of persons with and without the condition. On the other hand, prevalence rates cannot be converted to expectancy rates easily; a great deal of information about the population is needed for this purpose.

Findings from Secondary Source Data

Secondary source data, as we have seen in Goldhamer and Marshall's study, can be used imaginatively to provide information about important research questions. More often, however, they have been collected to supply estimates of the prevalence of mental illness—rates-under-treatment studies—for which they have restricted value since the untreated mentally ill are not included. But these data, usually presented only descriptively, disclose trends in psychiatric hospitalization that indicate how the mentally ill are cared for and also trends in mortality associated with mental illness that are a measure of the society's health. Thus, these data provide needed information to administrators, health care planners, and the general public as well as the raw materials for studies conducted by epidemiologists and other scientists.

Rates-Under-Treatment Studies. For more than two centuries records of admissions to state and public hospitals have been used to estimate the prevalence of mental disorder in a state or nation. Occasionally, comprehensive efforts were made, even in the nineteenth century, to obtain more complete data (see Andrew Halliday, page 103, and Edward Jarvis, page

110), but generally, the vital statistics were the only available source of information. In the 1930s, first Cohen, Fairbank, *et al.*, and later, Lemkau and his colleagues studied Baltimore's Eastern Health District. They relied on secondary sources of information but attempted to gather data from many sources and to make their rates-under-treatment studies as comprehensive as possible. Perhaps the best-known rates-under-treatment study is Hollingshead and Redlich's New Haven Study,⁸ *Social Class and Mental Illness*, which showed that the type of treatment received varied with social class status (see Chapter 10).

Cohen, Fairbank, et al.—Eastern Health District.^{9–12} In 1933, Cohen, Fairbank, *et al.*, began their rates-under-treatment study to ascertain the prevalence of “mental ill-health, defect and instability” and their social correlates in two wards in the Eastern Health District of Baltimore and to evaluate the use of treatment facilities. They attempted to obtain a complete census of all inhabitants receiving treatment by collecting data from mental hospitals, clinics, custodial institutions, the school system, and social service agencies.

The total number of cases found was 3,796 or 6.77% of the population (5.35% of whites and 11.79% of Negroes).⁹ The prevalence of psychosis was 818.4 per 100,000 of the population 15 years of age and over. The rate of psychosis was much higher in the ward that had a larger Negro population than in the other ward in the district.¹⁰

A later analysis of the 1,310 persons classified as personality deviants showed that rates for males were significantly higher than for females and that generally rates for Negroes exceeded those for whites. Furthermore, the rate of personality deviation increased with the increasing size of the household, with decreasing economic status, and with poorer “housekeeping” conditions.¹¹

Personality disorder rates for whites tended to be highest in the areas that contained larger proportions of Negroes. The investigators suggested that “local population movements” were responsible: During the 1930s Negroes moved into previously white-dominated areas; some whites moved to more attractive areas; and the whites who remained “may be those who are more prone to show personality disorder.”¹²

Lemkau et al.—Eastern Health District^{13–16}: In 1936 Lemkau and his colleagues restudied the Eastern Health District of Baltimore. They gathered data from hospital and other records and some information about residents of the district who had not received treatment. The crude rate for psychosis was found to be 6.66 per 1,000 (lower than that reported by Cohen, Fairbank, *et al.*), for psychoneurosis in adults 1.09 per 1,000, and for children with neurotic traits 2.94 per 1,000. The number of psychotics at large in the community was one-third of that in hospitals. Both psychoses and neuroses were more prevalent in the lowest socioeconomic white population.¹⁴

The rate for neurotic traits in children aged 7–16 was 13.2 per 1,000 of the population of the same age. Rates were significantly higher for white than Negro children, but did not differ between the sexes. Rates for conduct problems were 34.9 per 1,000, higher for boys than girls, and higher for Negroes than whites. The mental deficiency rate was 37.9 per 1,000, higher for males than females, and higher for Negroes than whites. Children's neurotic traits, conduct disorders, and mental deficiency were inversely related to family income.¹⁶

Lemkau and his colleagues presented their data both as crude rates and as age- and sex-adjusted rates. Furthermore, they computed the standard error (the standard deviation of the distribution of the means of the samples) as a measure of the confidence interval (the accuracy of the estimate).

Estimates (1960) of the Frequency and Distribution of Severe Mental Illnesses from the Use of Secondary Source Data. In 1960, Plunkett and Gordon made certain generalizations about the frequency and distribution of severe mental illness from studies using secondary source data gathered in the 1950s, a time when public mental hospitals were providing care to large numbers of the population. They concluded:

Female patients outnumber males, and frequency of attack increases with age. Marital status is clearly associated with occurrence of mental disease; the unmarried are more susceptible than the married, and the widowed and divorced have high attack rates. Race and nativity are suggestive determining factors (in recent years, hospital admission rates of Negroes in the United States have exceeded those of whites, a shift probably related more to altered social conditions than to race). Residents of rural areas tend to have more mental disorders than do urbanites. Migration within a country and between countries appears to contribute to the frequency of psychosis and other mental disorders. Variations in the economic welfare of a society influence frequency of mental disease to the extent, at least, that admissions to mental hospitals increase during times of financial stress.

Although such observations are not applicable with certainty to general populations or to causality, they provide significant leads toward the direction of controlled investigation.¹⁷

Trends in Psychiatric Hospitalization

Beginning in 1850, the United States Census reported the number of mentally ill in the nation by counting patients in mental hospitals and also those in their homes. In that year there were 15,610 such patients, a rate of 67.3 per 100,000. According to Malzberg, however, the census of 1880 was the first that is considered to be reliable; it reported that there were 40,942 patients in mental hospitals and 51,017 not hospitalized—a total rate of 183.3 per 100,000 population.

Since 1904 the Bureau of the Census has counted only hospitalized mental patients. Malzberg notes that between 1850 and 1923 the rate for

hospitalized patients quadrupled to reach 245.0 per 100,000. And in 1950 there were 574,881 patients in hospitals, a rate of 381.4 per 100,000.⁴

This tremendous increase was not limited to the United States. Throughout most of the Western world, admissions to public mental hospitals increased greatly in the years between 1900 and 1950, probably because of the greater proportion of elderly persons in the population. Strömngren⁷ reports that, generally, admission rates for those under the age of 40 had decreased in the first half of this century.

Mental hospital admission rates up to 1950, according to Strömngren, were influenced by three major factors: (1) "populational" (increases in size of population, age distribution, etc.); (2) "nosocomical" (quantity and quality of available facilities and services); and (3) "threshold-affecting" (attitudes toward utilization of facilities and mental illness, individual and group tolerance, etc.). He cites Svendsen's analysis of admissions to Danish mental hospitals and clinics 1939–1945 as an important contribution to our understanding factors influencing admission rates. Svendsen found that the number of admissions declined in 1939–1940 when the country was first occupied by the Nazis, but that admissions increased gradually over the next few years to a number double that in 1939. Svendsen concluded that "the decline in the beginning of the period commencing with the German occupation in April 1940 is due to a greater feeling of solidarity with the compatriots, to an increased feeling of content in life along the national spiritual mobilisation. These factors . . . caused an increase of the threshold and a real decrease in morbidity. The increase of mental disorders in the later period is mainly attributed to the loosening of the family life, that was caused by the war events."¹⁸ Increased hospital admission rates late in the war could be accounted for by the much greater frequency of women's situational psychoses, neuroses, and other mental illnesses. Svendsen also found that mental hospitals serving small geographic areas had higher admission rates than those serving large areas and that admission rates to clinics were about eight times greater than admission rates to mental hospitals.

The trend toward increasing hospitalization that had been observed for at least a century and that was becoming pronounced in the first half of the twentieth century began to change in the 1950s. In the United States, the advent of the Community Mental Health Movement emptied the state hospitals. At the end of 1973, despite the great increase in the population in the preceding decades, there were only 248,562 patients in public mental hospitals, a rate of only 117.6 per 100,000, in contrast to the 1950 rate of 381.4.¹⁹ Most of the former patients have been placed in Intermediate Care Facilities or in Board and Care Homes, but this deinstitutionalization has often meant only the transfer of patients from one type of facility to another where they continue to receive custodial care. Such a "return to the community" is in many ways a sham; Aviram and Segal²⁰ report, for

example, the "ghettoization of the mentally ill" that is taking place in California.

In discussing the implications of expected changes in the composition of the U.S. population for the delivery of mental health services during the period 1971–1985, Kramer²¹ states that: "Striking changes have taken place in the locus of delivery of mental health services." In 1955, public mental hospitals accounted for 818,832 patient care episodes, but in 1971 only 745,259; the rate fell from 505 to 363 per 100,000 population.

Between 1966 and 1971, however, the total number of patient episodes in all psychiatric facilities increased from 2.8 million to 4.0 million, a change in the rate from 1,427 to 1,989 per 100,000 population. Rates increased markedly for children from 500 to about 1,100 episodes per 100,000, and for adults aged 25–44 from 2,000 in 1966 to 3,000 per 100,000 in 1971. In contrast, the rate of patient care episodes decreased for those over the age of 65 from 1,600 in 1966 to 1,300 per 100,000 in 1971. However, the percentage of the elderly with mental disorders in nursing homes increased from 53% to 75% during the years 1963–1969, while the percentage in mental hospitals decreased from 47% to 25%.

The population of the United States is estimated to reach 241.7 million by 1985, and the percentage of nonwhites is expected to rise to almost 13% of the total. In considering these demographic projections, Kramer notes: "Of particular importance are the large increases anticipated in age groups that past experience has shown to have consistently high admission rates to psychiatric facilities." For example, the number of episodes that would be experienced by persons aged 25–34 is anticipated to be 63% greater in 1985 than in 1970.

Mortality Data from Death Certificates

The association between increased mortality rates and mental illness is beginning to evoke interest. But a major difficulty in determining such an association is that death certificates usually provide little information about whether decedents had been mentally ill. In the middle of the last century, William Farr²² found that the mortality rates for institutionalized mental patients in England were much higher than for the general population: "the mortality of the population of all England was at the rate of 22 in 1,000 or 2.163 per cent . . . [while] the annual rate of mortality in the lunatic asylums was at the rate of 11 per cent. . . ."

The association between mental illness and increased mortality, directly or indirectly, has more than historic importance. In 1969 just the mental, psychoneurotic, and personality disorders involved 6,000 deaths, and in 1971 there were 22,980 suicides and 17,580 homicides in the United States. Levine and Levine,²³ who compiled these data, recognize that all of the persons who committed suicide may not have been considered clini-

cally ill; however, they state: "It is difficult to see how any suicides can result from anything other than an emotional disorder, even if that disorder is only transient." Although not all homicides can be associated with mental illness, Levine and Levine's review of the literature on this topic indicates that emotional disorders are associated with 66 to 75% of homicides.

Associations between mental illness and higher mortality rates have been shown by age- and sex-adjusted death rates obtained from the Monroe County, New York, psychiatric case register 1960–1966. They reveal that the excess death risk (greater than that for control groups in the general population) was: for psychoneurosis, 1.9:1; for schizophrenia, 1.8:1; for affective psychoses, 2.0:1; for chronic brain syndromes, 4.8:1; and for character disorders, 2.6:1. Another example of the association between mental illness and increased mortality is provided by a controlled study of Army veterans, discharged for various reasons. Those with psychoneurosis had an excess death rate of 21%.²³

Suicide and Homicide Rates

The suicide and homicide rates are rising in the United States. Of the 15 leading causes of death in 1975, only the rates for suicide, cancer, and homicide increased between 1973 and 1975. The rate for suicide rose 5%, for cancer 4.2%, and for homicide 4.1%.²⁴ As shown in Table 1, suicide rates have been rising slowly and homicide rates have been rising rapidly from 1960 to 1973.

Table 1. Death Rates per 100,000 Population^a

	1950	1955	1960	1965	1970 ^a	1973 ^a
Suicide	11.4	10.2	10.6	11.1	11.6	12.0
Homicide	5.3	4.5	4.7	5.5	8.3	9.8

Adapted from *Statistical Abstract of the United States: 1975*.²⁵

^a Excludes nonresident alien deaths.

Table 2. Suicide Mortality Rates by Sex, Race, and Age Groups per 100,000 Population^a

Age group	Male				Female			
	White		Negro and other		White		Negro and other	
	1960	1973 ^a	1960	1973 ^a	1960	1973 ^a	1960	1973 ^a
15–24	8.6	17.4	5.3	14.0	2.3	4.3	1.5	4.1
55–64	40.2	32.4	16.9	12.1	10.9	12.0	3.4	4.4

From *Statistical Abstract of the United States: 1975*.²⁶

^a Excludes nonresident aliens.

Although the total suicide rate has changed only slightly, the age distribution for suicide has changed drastically since 1960. For example, as shown in Table 2, the rates for younger age groups have doubled, while rates for older age groups have declined. Moreover, the suicide rates for nonwhites and females have risen sharply.

Limitations and Appropriate Use of Secondary Source Data

In psychiatric epidemiology the investigator needs to be aware of the limitations of secondary source data—the results of studies can be no better than the quality of the raw material. Some of the limitations of secondary source data are:

1. The investigator has no control over the data collection; for example, he is limited by the definitions and criteria used by others, especially when a study involves diagnostic classifications, since their variability is notorious.
2. Secondhand information usually lacks uniformity; often it is gathered by a number of persons and there are omissions and errors even about such vital points as a subject's age, sex, or race.
3. The data are usually incomplete; for example, few secondary source data provide information about first-degree relatives needed for genetic studies of mental disorder. (Scandinavian data are an exception.)
4. Secondary source data seldom include information about subclinical or atypical cases.
5. Secondary source data supply information about highly selected populations.

This last point requires emphasis since data from public records (e.g., admissions to mental health facilities) are too frequently used both as estimates of the need for services and for planning the delivery of services. Public hospitalization of the mentally ill is a function of social class, mainly economic status. The number and quality of facilities providing mental health services influence their utilization. When facilities are scarce or unevenly distributed, only the grossly disturbed and those whose behaviors flagrantly exceed the community's tolerance will be treated or hospitalized. Or sometimes, as Plunkett and Gordon² emphasize, using data only from community agencies and institutions, particularly for broadly scaled epidemiologic surveys, can result in bias in the direction of the lower income groups. Lemkau *et al.*, suggested that even though they had attempted to canvass private as well as public mental hospitals, lower income brackets were overrepresented; many of the patients and clients, cases seeking services from clinics and social agencies, came almost exclusively from among the poor¹³ (see page 56). Thus, the poor, the chronically ill, and those whom the community extrudes can be either under- or overrepresented.

Perhaps most importantly, patients seeking help from either public or private facilities are always a selected group—selected by self, by another (e.g., spouse), or by the community (e.g., minister, policeman). Epidemiologic studies of such groups—rates-under-treatment studies—have some value in that the patients are seen by professionals who may or may not be the investigators. Nevertheless, such a group of patients constitutes only a selected portion of the population with mental disorders. Many others in the community are not receiving any type of treatment. Social and cultural tolerance of mental symptomatology adds to the complexity of case-finding. And, at least to some extent, not only community tolerance, but also, relative cultural definitions of illness and deviance are further complicating factors. The data from records on persons obtaining treatment, therefore, will not be representative of the general population, especially its need for health services.

Although, historically, rates-under-treatment studies have been used for almost 200 years to estimate the prevalence of mental illness, changes in the mental health delivery system during the last two decades have drastically reduced their already limited utility for this purpose. But we can speculate that prior to 1920 or 1930, when the few psychiatrists in the United States worked mainly in mental hospitals and before the private practice of psychiatry flourished, such hospital records reflected prevalence rates more accurately than in recent decades.

Despite their limitations and deficiencies, data from secondary sources, such as mental hospital records, can be used effectively in the following instances:

1. In discrete situations in which the quality of the data is high, for example, one can study the mental health of prisoners in federal institutions since extensive records are usually compiled;
2. In investigations using data from nations (e.g., Sweden) which have maintained health registers for the entire population for many years and have a reputation for precise data collection;
3. In large-scale studies using census or other national data in the United States, provided that the problem is well-defined and limited to the scope of the available data (Goldhamer and Marshall's study⁵ is an excellent example); and
4. In studies of the utilization of public facilities, referral patterns, the sociodemographic and environmental characteristics of the hospitalized, and changing trends and vogues in diagnostic practice. Analyses of these rates can reveal the intricacies of our modern, public-supported mental health delivery system with its flow of patients to and from mental hospitals, Community Mental Health Centers, other agencies, and the courts. Since some referred patients are not hospitalized and many discharged patients never receive aftercare, superficial evaluations of the system can lead to the impression that an assortment of haphazard

processes are at work. The psychiatric epidemiologist who devotes his efforts to sophisticated methodologic examinations of the system might find, for example, that highly developed, selective processes are operative.

Thus, when the investigator is aware of the limitations of secondary source data, and when he conceptualizes the research question, develops the methodology, and defines the objectives of a study using records, his work can be valuable. Before he begins to gather data, therefore, he should follow several steps: (1) describe the problem; (2) ask the question: "What do I wish to learn?"; (3) determine the data that he needs to gather and ascertain where he can find the data and how he can obtain them; (4) outline the plan for data analysis; (5) decide upon the best methods for presenting the findings and his interpretations; and (6) make plans about how the findings, interpretations, and recommendations can be utilized effectively.

Within certain limitations and with sufficient ingenuity and adherence to rigorous methodology, therefore, investigators can use secondary source data to make contributions to psychiatric epidemiology. Moreover, these data can be obtained easily and relatively inexpensively.

Social Indicator Analyses

Social indicators, measures of the quality of life in an area, have been used increasingly since the 1960s to designate communities and groups needing augmented mental health services. In fact, most Community Mental Health Centers base their programs on "social area analyses" that utilize indicators such as number of persons with incomes below the poverty level, unemployment and welfare rates, amount of substandard housing, health measures (e.g., V.D. and suicide rates), crime rates, and the number of broken homes. Areas—such as census tracts within a city—that rank high on these indices are assumed to have a greater need for mental health services than areas that are shown by the social indicators to have a better quality of life.

The social-indicator movement began in the late 1920s and early 1930s in an attempt to quantify the nation's economic condition. The havoc of The Great Depression stimulated researchers in this field, mainly economists, to develop indices that would enable them to appraise and compare changes in the nation's economy over time. And even earlier, William Ogburn,²⁷ who is known for his work on culture lag, sensed that scientifically compiled social indicators could provide meaningful information about social change that could be used for social planning: "With more complete statistics and with better measurement we shall attain fuller knowledge of what is happening to us and where we are going." Concepts of social engineering, therefore, are implicit in the social-indicator movement which mushroomed during the 1960s when "The Great Society's"

programs were being launched. The census and other national data began to be supplemented by data obtained from numerous sources, such as selected community surveys on a wide variety of topics. Also, social indicators started to be used to measure conditions at the local as well as at the national level.

In the Florida Health Study we used social-indicator data to construct an "Index of Sociomedical Well-Being."²⁸ We first selected spatial units for analysis (census tracts, enumeration districts, or block groups) and then collected data about seven major criteria: economic status, environment (e.g., housing), health, education, social disorganization (crime rates, family breakdown), alienation and social participation (obtained from survey data), and racial equality (obtained from 1970 census). These data were transformed into standard or Z scores for each variable by finding the mean for all census tracts and then computing each tract's deviation from the mean. We ranked the various census tracts according to their scores; also, the data could be plotted on a map and presented graphically as well as statistically.

The worst census tracts in the city were mainly black residential areas in the older section of the city and extended outward along one arterial channel to include an urban-rural fringe. The social indicators showed that this area resembled the rural areas of the county more than the other urban areas of the city. And preliminary analyses of the utilization of public mental health services revealed that larger percentages of the inhabitants of these areas than other areas were seeking mental health care from the Community Mental Health care facilities.

In this example, the findings are obviously tautological to some extent, since some information obtained from the epidemiologic survey of the county was used to construct the "Index of Sociomedical Well-Being." But further research is being conducted to evaluate the validity and reliability of the social indicators (with and without the information from the survey research) and this model for assessing the need for and utilization of mental health services.

The use of aggregate data (such as social indicators) about the human ecology of an area to draw inferences about individuals in the area can involve "an ecological fallacy"; aggregate data are at a different level of abstraction than individual behavioral data, and intervening and other variables may confound associations between these different data sets. Nevertheless, data from the 1970 census are being used to provide Community Mental Health Centers with descriptive information about their catchment areas. Criticisms of social-indicator data have been presented recently by Sheldon and Parke.²⁹ They state that, although there are serious problems with social indicator analyses, we should heed Duncan's statement: "The value of improved measures of social change . . . is not that they necessarily resolve theoretical issues concerning social dynamics

or settle pragmatic issues of social policy, but that they may permit those issues to be argued more productively.”*

Key-Informant Data

Key-informant data are both secondary and primary source information. For centuries, key informants, usually community leaders (such as the mayor, sheriff, public health and other physicians, mental health professionals, clergymen, and the often-untitled but recognized “neighborhood leader”), have supplied information about the prevalence of mental illness, local definitions of mental illness, the need for services, and the utilization of services.

Brigham³⁰ reported the results of a key-informant study that was carried out in the State of Connecticut in 1812. At that time, a committee attempted to ascertain the number of insane persons in the state by sending letters to physicians and other persons in every town in the state requesting information about the number of mentally ill. They received answers from 70 towns and concluded that 1,000 individuals in Connecticut were “mentally deranged, and that the condition of many of them was truly deplorable.” Brigham determined that there was one mentally deranged person to every 262 inhabitants. Brigham did not question the methodology used in this study, but did remark that it was quite possible that the number reported as mentally ill had been underestimated.†

To utilize the key-informant approach effectively, the investigator should first conceptualize and define his research question. Then, he can develop a questionnaire, usually including few, if any, open-ended questions, but yielding data that are easy to process. Or, in view of the fact that key informants occupy a special position in the community, the investigator may choose to formulate open-ended questions and obtain a “confidential interview” in which the informant is encouraged to discuss the community’s mental health problems at length. A tightly developed questionnaire supplies data that can be easily tabulated and analyzed. But the data may lack the depth of understanding and richness of looser, open-ended responses that need to be interpreted, coded, and classified before the results can be presented systematically in statistical or graphic form.

* The reader is referred to: (1) Robinson, W. S., Ecological correlations and the behavior of individuals, *Am. Sociol. Rev.*, 15(3):351-357, 1950; (2) Goodman, L. A., Ecological regressions and behavior of individuals, *Am. Sociol. Rev.*, 18(6): 663-666, 1953; (3) National Institute of Mental Health, Mental Health Statistics, Series C, No. 3: *1970 Census Data Used to Indicate Areas with Different Potentials for Mental Health and Related Problems*. DHEW Publication. (HSM) 73-9058, Reprinted 1972.

† Other important early studies that used key-informant data were Andrew Halliday’s *A General View of the Present State of Lunatics, and Lunatic Asylums, in Great Britain and Ireland, and in Some Other Kingdoms* (1828), and Edward Jarvis’ *Report on Insanity and Idiocy in Massachusetts* (1855). (See Chapter 7.)

The key-informant approach to problems in psychiatric epidemiology has some advantages, since it is firsthand information gathered from secondary sources. Although such data can tell us little or nothing about the incidence or prevalence of mental illness and reflect the informant's biases regarding etiology, they do supply information about subcultural and varying community definitions of and attitudes toward mental illness and services that is difficult to uncover from other data sources. For example, the recognized but unofficial leader of the community generally knows each household well and is able to tell the researcher about "hidden" cases. Furthermore, a clergyman can provide information about the number of members in his congregation who seek formal or informal pastoral counseling and who, for a variety of reasons, never obtain other public or private mental health care.

Thus, from key informants an investigator can obtain a type of data different from that available from public records, and also, a type that is not available from firsthand sources (e.g., surveys with random samples of the general population). In addition, a key informant can tell the investigator about how a community really "handles" its mentally ill and deviant members.

A preliminary key-informant study is usually a requisite for a community study of mental illness that involves surveys of random or other samples or the taking of a census. The data obtained from key informants are used by the investigator as background information and are necessary for the development of the interview schedule since they include local definitions of mental illness, idioms, and views of the community's attitudes toward mental illness. As we shall see in Part 2, most investigators setting out to gather primary source data by interviewing the inhabitants of a community first conduct a key-informant study, not only for the information it supplies, but also because the key informants can pave the way for a research team by helping to enlist the community's cooperation with the study.

Part 2: PRIMARY SOURCE DATA

Epidemiology at any given time is something more than the total of its established facts. It includes their orderly arrangement into chains of inference which extend more or less beyond the bounds of direct observation. Such of these chains as are well and truly laid guide investigation to the facts of the future.

—W. H. FROST³¹

In Part 2 of this chapter we will look at methods that have been used to gather primary source data for measuring the extent of mental illness and carrying out other epidemiologic investigations in communities and larger areas. These methods include various types of survey research and require accurate sampling procedures, the development of interview instruments, and the handling of the data. We will present some of the problems confronting investigators who have been conducting such studies. Finally, we will discuss essential problems with case-finding, the use of tests and scales, validity, reliability, and both interviewer- and response-bias that complicate researchers' efforts to obtain the quality of primary source data that will shed light on fundamental research questions in psychiatric epidemiology.

Primary Source Data: Firsthand Information

Primary source data are obtained originally by the researchers, not just collected from existing sources. In accord with their research design, investigators can obtain data on a mental health-illness problem in many ways. For example, they can conduct surveys of a community by interviewing selected samples of respondents in their homes or at field stations or by taking a census in a limited area. They can enter institutions or factories to interview or examine patients, inmates, or employees. Or, they can contract with survey research teams and services to sample "national opinion." Using data from primary sources has significant advantages over the use of records and other secondhand information; but, as in all scientific investigations, the value of the study utilizing primary source data is dependent on the conceptualization of the problem and on methodologic rigor.

The Survey Approach

This approach to gathering firsthand information about mental health-illness and the utilization of services has become the most popular and publicized method for estimating the prevalence of mental illness. In a

community survey, the investigator has the opportunity to design research strategies that have a potential for yielding associations among independent, intervening, and dependent variables. Such studies, however, are expensive and usually require many years of effort.

According to Strömgren, the first studies using sampling methods were carried out by Swiss and German psychiatrists who had been prompted by Kraepelin and his interest in the hereditary aspects of mental illness.⁷ For example, Jost found in 1896 that only 2% of the ancestors of 200 sane people had had mental illness, whereas Naecke found that 18% of the relatives of mental hospital patients had had probable psychotic episodes. Strömgren points out that the concept of “hereditary tainting” was the investigators’ basic concern. These studies lacked methodologic rigor; Strömgren mentions that the degree of relationship to the probands was not taken into consideration and, also, that the probands were not representative of the general population. These and other methodologic difficulties were examined intensively by Luxenburger and Schulz, who worked with Rüdín at Munich. During the 1920s they developed sampling methods that had scientific validity, but the studies they carried out included so few respondents that the results had little practical value. However, Strömgren⁷ notes that the methodology used in the 1930s was sufficiently precise to allow him to combine data from the various small studies. The results showed that the expectancy rates in the general population were: schizophrenia 0.72%, manic-depressive insanity 0.21%, general paresis 0.33%, and mental defect 2.07%.

*Rosanoff: Nassau County*³²: In the United States, the first major survey was carried out in 1916 by Rosanoff in Nassau County, New York, with a staff of physicians and trained social workers who examined patients and conducted intensive household interviews in four of the county’s districts. The investigator’s objective was to assess the extent of social maladjustment due to mental illness. Two sets of diagnostic criteria were used—medical determinations of psychiatric illness and sociologic determinations of adjustment-maladjustment. Rosanoff reported that the prevalence rate for all mental disorders was 36.4 per 1,000 in the districts studied (many notoriously bad neighborhoods) but that the estimated rate for the entire county was only 16.4 per 1,000.

The results were questioned, primarily because the investigator did not utilize a scientific sampling technique and, in the absence of probability sampling, conclusions about prevalence rates in the county could not be accepted as valid. Despite its defects, Plunkett and Gordon² state that this study was “well ahead of its time”; the methodology was innovative. Rosanoff called for comparable surveys of other populations and recommended that Nassau County be restudied.

Sampling

The methodology (particularly sampling techniques) for intensive surveys of areas was developed in the 1920s and 1930s, and has been utilized by researchers since then. Information about the population's size and sociodemographic and other characteristics is needed to choose the preferred sampling method (as well as for conceptualizing the research problem) and can be obtained from public records and field studies. The investigator must determine the size of the sample to be interviewed: The sample should be representative of the total population or should be selected to supply information about certain groups' specific problems. Conventionally, samples are divided into (1) probability samples that specify for each individual in the population the probability that he will be included in the sample, and (2) nonprobability (usually stratified) samples that do not provide for the possibility that each individual in the population will be in the sample.

The most basic sampling design utilizes a simple random sample of the population to be studied. The individuals in the population are numbered serially and the sample is selected by using a table of random numbers. Since it is an enormous task to enumerate every individual in a community, the households can be numbered and then the person(s) in each household who is (are) to be included can be identified by the use of the ingenious method devised by Kish³³ for obtaining a random sample of the general population. The group of respondents will constitute a random sample if the population is normatively distributed. Finally, the sample is compared with the census or other demographic data to determine whether it is representative of the community.

Another type of probability sample is the area sample, which uses a geographic framework, such as a number of blocks within a city or a demarcated area in a rural county, to place limits on the sample and to obtain information about problems which are particular to such an area. The study area is usually subdivided into smaller areas in which an investigator can number and list households in order to draw the sample.

To obtain a stratified random sample (a nonprobability sample), the population is divided into two or more homogeneous strata or portions that are specified by criteria such as age, sex, and/or race. After the population has been stratified, a simple random sample is drawn from each stratum. This procedure provides for more precise control over the number of individuals sampled in each stratum than does simple random sampling.

A cluster sample is constructed by selecting certain groups of individuals who are then clustered because they possess certain common characteristics. Within the clusters, the individuals then can be selected according to procedures for randomization. Cluster sampling has some advantages in that it is usually less expensive than other sampling methods. Stratifying

the sample or using clusters also enables the investigator to “oversample” selected portions of the population about which specific information is needed; for example, in many of the rural areas of the South, random sampling would provide only a small number of middle- or upper-income blacks. Therefore, to learn about the health in this income-race group, it is likely that the investigator would wish to sample a larger proportion of such individuals than their white counterparts.

Two other types of nonprobability samples are the haphazard sample, which usually includes only the readily available number of people, and the quota sample, which specifies as precisely as possible the number of persons with particular characteristics to be included in the sample (e.g., widows within certain age groups). The quota sample resembles a stratified random sample to some extent, but designates more precisely the exact number and types of individuals to be included.

Kish has emphasized that sampling design requires the “judicious balancing of four broad criteria”: (1) “*Goal orientation*” or the desired fit between the research objectives and the survey design; (2) “*Measurability*” or the kinds of computations that can be made without exceeding the acceptable limits for standard error (the standard deviation of a distribution of means); (3) “*Practicality*,” which refers to the ability of the investigator to obtain the desired sample of the desired population; and (4) “*Economy*” or the achievement of the research objectives at a minimum of cost.³⁴

Survey Research: Methodology

The Stirling County³⁵⁻³⁷ and the Midtown Manhattan^{38,39} studies are excellent examples of sophisticated survey research. Each of these studies was carried out in a different kind of community. The Stirling County Study sampled the population of an entire rural county in Nova Scotia that contained a number of small villages. The county had a population of about 20,000 inhabitants; the total number of sample respondents was 1,150 adults over the age of 18. In the Midtown Manhattan Study, a random sample of 1,911 individuals, aged 20-59, was selected from the 110,000 inhabitants in that age group in a defined area in central Manhattan. Interviews were obtained from 1,660 respondents (13% of the sample did not participate in the survey). Thus, in these two major studies, the populations were very different. One group was composed of English Protestants and French Acadians in rural areas and villages; the other was a heterogeneous urban group that contained immigrants from many nations.

In both studies, the methods used to obtain the firsthand information were interviews with the selected samples of respondents in their homes. Highly developed interview schedules were administered by trained inter-

viewers, and the information obtained was rated by psychiatrists. To use such primary source data meaningfully, the investigators needed to have a great deal of background information about the population being studied: its socioeconomic, racial, subcultural, and other characteristics.

In such ambitious community surveys, one of the first problems is: "What is to be measured?" The Stirling County Study assessed the prevalence of psychiatric disorder; a case was operationally defined as "*a person who, if thoroughly studied by psychiatrists, would be diagnosed as suffering from one or more of the specific psychiatric conditions described in the Manual.*"^{37,40} Cases later were rated for impairment and functioning. The Midtown Manhattan Study's objective differed slightly. To measure prevalence, the respondents were classified by the Mental Health Rating Scale in seven categories ranging from "no evidence of symptom formation" (rating 0) through "moderate symptom formation, with some interference in life adjustment" (rating 3), to "seriously incapacitated, unable to function" (rating 6). All respondents were eventually placed in four final categories: well, mildly impaired, moderately impaired, and incapacitated.³⁹

The investigators conducting these community surveys developed interview schedules that contained items or scales that would yield reliable and valid information about symptoms and attitudes that could be judged or rated. The conceptual basis for the research problems and the investigator's objectives determine the selection of items included in the interview schedule. Minimally, items related to the following major categories constitute the interview schedule:

1. Basic demographic information about the respondent.
2. The independent variable—for example, national descent—or the number and types of stressful events sustained during the preceding year.
3. The dependent variable—for example, questions about symptoms, other reactions, and functioning in various roles that have been pretested for their utility, validity, and reliability.
4. The interviewer's observations—for example, the general condition of the respondent's household.

In the Stirling County Study, a list of items, derived from the United States Army's Neuropsychiatric Screening Adjunct (15 items, NSA), included questions such as: "Do you have any particular physical or health trouble at present? (yes, no [undecided])"; "Have you felt that you were going to have a nervous breakdown? (often, sometimes, once or twice, never)"; "How often are you bothered by an upset stomach? (nearly all the time, pretty often, not very much, never)." Such questions were elaborated into the 20-item Health Opinion Survey (HOS), a scale that can be scored. During the last 20 years, the HOS has been used in numerous other investigations.³⁷

The interview schedule used in the Midtown Manhattan Study contained 92 items pertaining to current “symptoms of impairment, disordered behavior, disrupted interpersonal relations, and internal malaise, tension, or conflict. Another 28 items dealt with signs of disturbance in childhood.”³⁹ Items were grouped in categories such as *suspiciousness* (four items, one of which was: “Do ‘personal enemies’ worry you often, sometimes or never?”) and *frustration-depression* (seven items, one of which was: “In general, would you say that most of the time you are in high spirits, good spirits, low spirits, or very low spirits?”). Many of the items used in the Midtown Manhattan Study have been refined, developed, and used in other studies during the last 20 years. They now constitute Langner’s “22-Item Scale.” Both the HOS and the 22-Item Scale have been tested for validity and reliability (see pages 82–84). (The results of the Stirling County and Midtown Manhattan Studies are presented in Chapters 10 to 12.)

In such comprehensive surveys, in which interviewers gather data from large samples, the information is summarized or collated in protocols and judged for caseness (the Stirling County Study) or rated for degree of impairment (the Midtown Manhattan Study) by psychiatrists who are usually engaged in the research. Such judging or rating procedures, which many of us have used, are subject to question for a number of reasons. First, the psychiatrists do not actually see the persons whom they are rating for caseness, impairment, or both. Second, we do not know to what extent the interview stimulates a psychiatric examination to obtain the information necessary to judge whether a respondent is a case or is impaired? Third, as in all studies using interview data, the validity and reliability of the data are influenced by response bias and other factors. Fourth, interrater agreement is variable.

Cohort Studies: Methodology

Early investigators’ difficulties in estimating prevalence were attributable first to the crudeness of their sampling techniques and later to the use of small samples. These problems led to the development of other methods—cohort studies and census-taking in demarcated areas.

Klemperer⁴¹ is credited with being the first to carry out a longitudinal investigation of the prevalence of mental illness. In 1931, he attempted to study the life histories of 1,000 persons rather arbitrarily selected from the birth registers in Munich 1881–1890. The choice of dates from the birth register is a critical factor when this type of methodology is used because the dates of birth must have been sufficiently far back in time for the individuals to have passed through various age-risk zones. But the dates cannot be so far back in time that a reasonable number of persons are not

still alive. Theoretically, this method for obtaining a cohort approaches the ideal. The sample can be truly unbiased, and the longitudinal life histories can provide comprehensive health information. But the method has many practical difficulties (the passage of time may affect the subject's recall, or the sample may be drastically reduced in number by migration or other factors).

At best, Klemperer was able to interview only 271 of the original 1,000 and to gather some information about the lives and mental illness histories of the 524 who had died prior to 1931 by interviewing their friends and relatives. But 205 could not be traced. Higher infant mortality in the illegitimate than the legitimate births, migration, and other factors produced selective losses from the original cohort.

The incomplete findings showed that the expectancy for schizophrenia was 1.40%, for manic-depressive psychosis 0, and for oligophrenia 3.0%. Strömgren considers the results to be "uncertain" (7) and Reid⁴² states that "the results obtained in this pioneer investigation inevitably fell short of expectations based on the boldness and soundness of its inception."

Fremming⁴³ used this same method successfully to study the population of the Danish island of Bornholm. In 1947, he traced more than 92% of the 5,500 persons born there between 1883 and 1887, and gathered information from municipal and parish records, physicians, and the relatives of those who had died, as well as from interviews with those who were still living. He reported that 12% had been mentally abnormal, a percentage which agrees with that determined by Strömgren's study of the same population, by different methods, more than a decade earlier.

Two other major cohort studies that differ from those of Klemperer and Fremming are the very important Lundby Study, 1947–1957, conducted by Essen-Möller⁴⁴ and Hagnell,⁶ and the Midtown Manhattan Study, 1954–1974, that was carried out by Srole *et al.*^{38,39,45} These two prospective longitudinal investigations, in which the cohorts were interviewed and then reinterviewed at a later time, are discussed in Chapter 12.

Census Investigations

To obtain as complete information as possible about a population and to minimize sampling errors, a number of investigators have taken censuses of entire populations in delimited areas. Often, islands or remote areas are chosen for this purpose since they are somewhat delineated ecologically and often "removed" from massive outside influences.

In 1929, Brugger⁴⁶ attempted to ascertain the number of mentally ill in two counties in Thuringia that had a population of 37,561. To search for all persons receiving psychiatric treatment, he "piggybacked" on a census

that was being taken at the time. Also, he questioned key informants. For all mental illnesses, Brugger reported a rate of 13.1 per 1,000. This early census study is considered to be incomplete; it would be extremely difficult to obtain accurate data on mental illness by taking a census in that large a population in a large area. Reid comments that methodological difficulties, such as response bias, seriously influenced the results.⁴² Some key informants underreported cases, presumably because of the stigma attached to mental illness, whereas others with known cases in their families probably overemphasized the presence of mental illness in the community. Also, this area is known to be one in which goiter and cretinism are common.

One of the classic census studies was conducted by Lewis⁴⁷ in England and Wales in 1929. Lewis limited his study to the assessment of mental retardation and devised sound methodological procedures that enabled him to obtain results that are considered to be meaningful. He studied populations of about 100,000 persons in each of six geographical areas—two rural, two rural-urban, and two urban. Over a period of four years, he carried out systematic field studies, and even administered intelligence tests to school children. The incidence of mental deficiency was 0.8%, much higher than earlier estimates. Also, the incidence was higher in rural than urban areas.

Another significant census investigation is Strömngren's⁷ study of Bornholm, Denmark, 1933–1936. Since Bornholm is an island that had a population of about 40,000, he had the opportunity to investigate a discrete ecologic area which had natural boundaries, not man-made ones such as county lines. First, Strömngren identified all cases of both treated and untreated mental disorder on a certain date (point prevalence) by searching medical records and gathering reports from key informants. He located 525 mentally ill individuals, 1.14% of the population; more than one-third were psychotic, but were living in the community. About the same time, he took a census of a district in Bornholm with a population of 1,000 persons. Twelve percent of the population over the age of 20 were (or had been) found to be mentally abnormal; however, only 60% of that group were socially impaired.

Methodologically, this study is especially important. First, the population was geographically discrete and, consequently, less subject to the population shifts that have handicapped investigators conducting surveys in other areas. Second, the medical record keeping system in Scandinavia has been more comprehensive and a more reliable source of data than most health record systems in the world. This intensive study, therefore, could supply reasonably accurate information about the prevalence of the mental disorders and the utilization of treatment facilities. However, because the population was somewhat isolated, one could question whether the results could be generalized to other segments in Western society, most of which

have been undergoing population shifts and social dislocations as part of the accelerated rate of social change.

Determining the prevalence of mental illness by taking a census of an entire population should be the most precise epidemiologic method. The method is particularly appealing when the population is in a delimited ecological area. Especially in the pre-World War II era when the rate of social change appears to have been much slower than in recent years, investigators studying discrete areas could have ascertained differing local conditions and cultural factors that might have been associated with varying rates and types of mental disorder.

Unfortunately, the results of most of the early studies seem to be both arid and meager, probably for a number of reasons. The epidemiologic method was just beginning to be applied to the study of mental illness and, as a consequence, early investigators were handicapped by the lack of developed, scientifically tested methods. Also, most of them probably had limited resources; many of the early studies appear to have been “bootstrap” operations dependent on the investigators’ ingenuity and perseverance. Furthermore, clinical psychiatry was still in an early developmental stage, and the preoccupation with hereditary tainting seems to have been another limiting factor.

But, as we have seen, a number of studies, particularly the Scandinavian, yielded fairly consistent results—generally, the prevalence rate of mental disorder of all types was about 12%, and the expectancy rate for schizophrenia was 1.0%. Well-developed studies that had limited objectives, such as Lewis’ assessment of mental deficiency, are still thought to be both exemplary and meaningful.

Since World War II, technological developments, particularly air travel and television, have reduced isolation, altered life styles, and tended to produce homogeneity rather than diversity throughout the world. Therefore, surveys that utilize refined sampling procedures became appropriate methods for studying the epidemiology of mental illness.

Use of Primary Source Data Obtained from Patients: The Social Breakdown Syndrome

An investigator can collect firsthand information by interviewing patients in hospitals or clinics and by examining inmates in institutions, workers in factories, or children in a school. Gruenberg⁴⁸ made an important contribution to psychiatry by his evaluations of patients and former patients from the Hudson River State Hospital that led to the description of the social breakdown syndrome (SBS). The social breakdown syndrome is the term applied to “certain features of psychiatric patients’ deterioration. It is a useful concept because it specifies those

features of patient functioning, especially extreme withdrawal and aggressive behavior, that become less common when new systems of delivering psychiatric services are introduced." SBS appears most prominently in chronic mental hospital patients who display apathy, a loss of the ability to function in social roles, and later, the features of deterioration. Traditionally, such patients have been compliant, fitting into the hospital routine and the staff's expectations. But Gruenberg's intensive studies revealed that the manifestations of the SBS are diverse, consisting at times of dangerous behavior, shouting, and failure to work or enjoy recreation, as well as withdrawal and self-neglect. Furthermore, the syndrome often begins prior to admission, the onset may be either insidious or sudden, and SBS occurs in conjunction with a variety of psychiatric disorders. Of 139 inpatients and outpatients with SBS in 1963, slightly more than 50% were schizophrenics, about 8% were psychoneurotics, and the remainder were distributed over the spectrum of mental disorders. In 1963 the prevalence of SBS associated with psychosis in the age group 16–64 was 1.5 per 1,000. Reorganization of psychiatric services was responsible for a 50% reduction of new chronic episodes between 1960 and 1963.

Gruenberg's studies show that the syndrome emerges "as a result of a spiraling crescendo of interactions between the patient and the people in his immediate social environment." The seven steps in the pathogenesis of SBS are: (1) a discrepancy in ordinary life between a potential patient's capabilities and the expectations of others; (2) increasing uncertainty, heightened suggestibility, dependency on environmental cues leading to maladaptive responses, and withdrawal from ordinary social roles; (3) the person's being labeled as mentally ill and recommended for hospitalization; (4) admission procedures, especially commitment, that isolate the patient further and can be interpreted as rejection; (5) institutionalization and the patient's being relieved of responsibilities now that he is in the "sick role"; (6) compliance with the hospital's regulations and increasing separation from the community; and (7) identification with other patients and with the staff's routine which can further decrease his social functioning.

Chronic SBS is prevented by prompt treatment, brief hospitalization, and aftercare programs that provide for the alleviation of the acute symptomatology but do not sever the patient from the community. Specific therapeutic measures can enhance the patient's social functioning, and family and group therapies can improve interpersonal relationships.

Nationwide Surveys

An example of a nationwide survey using primary source data is the well-known study *Americans View Their Mental Health*, carried out under

the auspices of the Joint Commission on Mental Illness and Health by Gurin, Veroff, and Feld.⁴⁹ In the spring of 1957, they employed the services of the University of Michigan's Survey Research Center to interview a random sample of 2,460 adults over 21 years of age living in private households. Only 8% of the persons approached refused to participate; thus, the sample was considered to be representative of the adult population of the United States.

The interview covered two major topics: (1) respondents' "feelings of adjustment" and (2) "methods of handling emotional problems." Results showed that the main sources of unhappiness were economic and material—27% of the sample; community, national, and world problems—13%; personal characteristics and problems—13%; and job—11%. The main sources of happiness were economic and material—29%; children—29%; marriage—17%; other interpersonal source—16%; and job—14%.

On a three-point scale (very happy, pretty happy, or not too happy), "about 90% of the total sample reported that they were 'very happy' or 'pretty happy.'"⁵⁰ But on a five-point scale (never, not very much, sometimes, a lot, or all the time), approximately 25% reported worrying "a lot" or "all the time." Of these, 40% blamed "money." High percentages in the middle-income group—\$3,000–\$6,000 per year—reported financial worries, while those in lower economic brackets seemed to be resigned to some degree of poverty. Gurin *et al.* state: "In looking at the reasons people give for unhappiness and worry, one general point stands out. Interpersonal and personal problems are mentioned by only a minority of the population. People tend to externalize their problems, to locate them in 'concrete' material things or a job, to see them as reactions to external events, not as problems in personal or interpersonal malfunctioning."⁵¹

Respondents with less education tended to report more physical reactions to stress than did their better educated counterparts. In contrast, the more highly educated "experienced more problems phrased in psychological terms."

The investigators also found that more older than younger people tended to be "unhappy"; but the older respondents tended to worry less than the younger ones. Apathy, rather than anxiety and insecurity, appeared to be a major problem for the older groups. In contrast, more of the younger than the older respondents reported psychological problems, personal and interpersonal. Older respondents also reported more physical symptoms than those in the younger age groups.

More women than men expressed distress on all the measures used in the investigation. Gurin *et al.* state: "[I]t is clear that there is a greater experience of tension among women, evidencing itself in many different areas of distress."

About one out of five of the sample responded affirmatively to the question: "Have you ever felt that you were going to have a nervous breakdown?" Approximately 40% of this group blamed the emotional crisis on external events, such as death or illness of a loved one, job tensions, or adverse financial conditions. About 20% of them blamed a physical illness.

In discussing the implications of their findings, Gurin *et al.* state that about 25% of the total adult population "have at some time in their life experienced a serious need for help. The majority of these—14% of the total population sampled—actually went for help." The investigators concluded that there was "a considerable expression of need for help but that in many cases this need is unfulfilled. . . . These unfulfilled needs . . . constitute a special social problem and responsibility, especially since the data . . . indicate that these unfulfilled needs may be greater in certain subgroups."⁵²

Problems with Community Studies Using Primary Source Data

Problems centering on the definition of "caseness" and case-finding present major difficulties to psychiatric epidemiologists. These problems involve a basic issue; "What is mental illness?" Although there is some consensus among professionals and lay persons in a community about certain persons who are defined as mentally ill, these are usually only the most clear-cut cases—those for whom there is little community tolerance, or those who demonstrate subculturally recognizable manifestations of mental illness. Many other persons residing in the same community, some of whom would be defined as mentally ill in another community, or those whose symptomatology and behaviors are less severe or subclinical, may be overlooked. Furthermore, there is lack of consensus about diagnosis, even among psychiatrists.

In view of the shortage of psychiatrists and the many demands for their services, most broad-scaled epidemiologic investigations rely on trained interviewers (some of whom will not have had an education in the health sciences or worked in this field) to obtain the needed information from respondents. Therefore, the investigators attempt to develop, pretest, and refine interview instruments that can be used effectively by the interviewers.

The interview instrument should be designed to elicit responses from subjects with diverse social and cultural backgrounds and attitudes as well as with varying states of health and illness. If the research involves judgments about mental illness, the interview—at least to some extent—should simulate a psychiatric examination since, often, psychiatrists will later judge or rate the information for caseness or impairment (see page 194). The data obtained must possess a reasonable degree of validity and

reliability. Furthermore, the data collected must be in a form that allows the researcher to process and analyze them efficiently and meaningfully.

Researchers and psychiatrists selecting items for inclusion in the interview schedule are usually handicapped because they are members of the middle class and thus have middle-class biases that will influence the wording as well as the selection of items. Consequently, items may not be applicable and meaningful to the poor, to minority groups, or even to members of the upper class. This handicap is lessened by getting key informants and representatives of diverse social groups to participate in the interview design. Also, pretesting the instruments is essential.

Other major problems are those of validity, reliability, and response bias. These are serious problems in survey research, especially when the interviewers are not mental health professionals. However, these problems (that will be discussed later in this chapter) exist even when psychiatrists are collecting the primary source data.

Scales

To reduce some of these difficulties in survey research, the investigator can include standardized scales in the interview instrument. Also, he can select items that can be developed into scales and thus facilitate data analysis. Although the nationwide survey *Americans View Their Mental Health*⁵⁰ was reported as item responses, as we have seen, the Stirling County and Midtown Manhattan studies used items that could be scaled.

A scale, conventionally, consists of a number of items that can be rated to provide a total score. Ordinal scales are used for rank ordering. As Nunnally⁵³ states, their essence is the "concept of 'greater than' " which yields another kind of information than scales embodying "the concept of 'different from.' " Interval scales provide some knowledge of the distance between categories of data as well as an ordering or ranking; knowledge of the interval enables one to determine the range of scores and the dispersion, usually the standard deviation.

In field studies of mental disorder that include scales, generally the results are expressed as the *mean*—the average score for a group (males, older-aged respondents, etc.). The *median* is the central score—an equal number of respondents score higher and an equal number score lower than the median. The *mode* is the score obtained by the greatest number of respondents. The *range* reports the highest and the lowest scores. And the *standard deviation* is a mathematical calculation of the degree of dispersion. When there is a normal distribution, the bell-shaped (Gaussian) curve, about 68% of the population will score between +1 and -1 standard deviations, about 95% between +2 and -2 standard deviations, and more than 99% between +3 and -3 standard deviations from the mean.

Although scales reduce large amounts of data to scores that can be handled for statistical analyses, rankings, and comparisons, they have a number of shortcomings when used in psychiatric research. For example, there is some loss of information in the use of scales; the total score tells little or nothing about content. A high score that had clinical significance could be obtained, for example, by very high responses to only a few items on a depression scale, whereas the same total score that had little clinical significance could be obtained by lower responses to many of the items.

Four common types of scales used for measuring opinions and attitudes are those of Thurstone, Likert, Bogardus, and Guttman. The Thurstone⁵⁴ method, presented in 1929, depends on judges' determinations of responses to questions about opinions or attitudes. For example, a group of judges independently rate responses on a nine-point continuum ranging from extremely favorable, through neutral, to extremely unfavorable. Then, the index of variability for each item is computed, i.e., the consistency with which a certain item is given a specific ranking is measured. Those items which have high interrater reliability are then evaluated for "intensity," tested further, and finally collated into the scale.

The Likert⁵⁵ method involves correlating subjects' responses on individual items with the total scale score. Items in a Likert scale usually call for responses that are on a five-point agreement-disagreement continuum. Only the items that correlate highly with the total score are retained to insure internal consistency and increase the likelihood that the scale is measuring one general attitude. Since the Likert method is more empirical than the Thurstone method, which uses judges, Nunnally believes that it is more likely to tap one general attitude.

In 1925 Bogardus⁵⁶ devised the Social Distance Scale to measure, for example, racial attitudes. The score on the social distance scale depends primarily on the responses to one or two selected items. For example, we used a modified racial distance scale in the Florida Health Study.⁵⁷ An affirmative answer to the item "Do you feel it is all right for black people and white people to marry one another?" is considered to be evidence of little interracial distance regardless of the responses to the other five items. In contrast, an affirmative reply to the item "Do you feel that black people and white people should live in entirely different towns or nations?" is considered to be evidence of extreme interracial distance regardless of the responses to the other items.

The Guttman scale order ranks the intensity of respondents' attitudes on a designated topic. For example, on a five-item Guttman scale, the first item refers to the greatest intensity of agreement with the attitude or opinion being ascertained; the second item refers to a slightly lower intensity of agreement; the third and fourth items refer to somewhat lower levels of agreement, and the fifth to the lowest intensity of agreement (but still some degree of agreement) with the selected attitude being measured.

Nunnally⁵⁸ notes that the conceptualization of the Guttman scale is elegant, but that each item must be almost completely reliable; consequently, the different items may turn out to be almost rewordings of the original statement.

Sophisticated factor analytic techniques can be used by researchers to construct scales from large amounts of raw data. Devising scales in this fashion enables the researcher to reduce the available data to more manageable quantities and forms. Also, the statistical techniques involved sometimes reveal elusive patterns of responses.

Although scaling is a helpful and sometimes valuable statistical procedure, nevertheless, it almost always involves some loss of information due to condensation and can be misleading, especially when undue reliance is placed on the intervals. To have utility, scales must be both sensitive and specific. And to have scientific merit, all scales must possess a reasonable degree of validity and reliability.

Sensitivity and Specificity. Sensitivity and specificity are two essential properties of scales. *Sensitivity* refers to the scale's ability to detect accurately the cases in the population under study. A test (e.g., a certain scale score) will designate a group of people in the population as "cases." Some of them really are cases, but some are not cases even though the scale score will have identified them as such. Those in the latter group are the false positives. The index of the test's sensitivity is the number with a positive test divided by the sum of those correctly identified (true positives) plus those whom the test has not detected but who do have the condition (false negatives).

Specificity refers to the scale's ability to identify those in the population who do *not* have the condition being investigated. The specificity of a test is the number of those who are identified as *not* having the condition divided by the sum of those correctly identified as not having the condition (true negatives) plus those who do not have the condition but who were incorrectly identified as having it (false positives).

The sensitivity and specificity of a test can be seen in Fig. 2.

The sensitivity and specificity of screening measures and scales present problems for health surveillance systems as well as for psychiatric epidemiology. As the sensitivity of a test increases, approaching 1.0, there are fewer and fewer false negatives; but, usually, increasing sensitivity tends to increase the number of false positives. As the specificity of a test increases, approaching 1.0, there are fewer and fewer false positives since specificity refers to the purity of the disease-absent group; but, as specificity increases, the test may have diminished utility and provide erroneous information inasmuch as many with the condition are categorized as not having it—the number of false negatives tends to increase.

To make a test more sensitive, one attempts to detect all cases and thus the false negatives are reduced. In making a test more specific, one

Screening	Disease	
	+	-
+	True positives	False positives
-	False negatives	True negatives
Sensitivity	$\frac{\text{True positives}}{\text{True positives} + \text{False negatives}}$	
Specificity	$\frac{\text{True negatives}}{\text{True negatives} + \text{False positives}}$	
% False negative	$\frac{\text{False negatives}}{\text{True positives} + \text{False negatives}}$	
% False positive	$\frac{\text{False positives}}{\text{True negatives} + \text{False positives}}$	

Fig. 2. Sensitivity and specificity.

attempts to demarcate a group without the condition, but, in so doing, implicitly labels the remainder as ill and thus does not correctly identify some who are healthy. Sensitivity and specificity, therefore, are the Scylla and Charybdis through which the investigator using tests and scales must steer. If he is imperiled by either, the errors in the interpretation of the test results will multiply; either too many cases or too few cases will be correctly identified.

Validity and Reliability

Basic problems with validity and reliability are two of the major handicaps confronting psychiatric investigators who are attempting to identify and measure the incidence or prevalence of mental disorder by the use of interview instruments, scales, and tests. *Validity* refers to a test's ability to measure what it purports to measure. It depends upon ascertaining the degree of agreement, between at least two empirical types of data which are derived from at least two different sources. In psychiatric epidemiology, one of the first steps in determining the validity of a scale or measure is to compare the scale scores with an external criterion, for example, the results of clinical examinations which have been conducted independently of the testing. Obviously, such procedures should be blinded; neither the person working with the test scores nor the clinician should be aware of the other's findings.

Four types of validity are:

1. *Predictive validity*, or the power of the test to predict a designated outcome. Generally, standardized intelligence tests, such as the Wechsler Intelligence Scale for Children (WISC) or the Wechsler Adult Intelligence Scale (WAIS), have value for predicting a student's academic performance.

2. *Concurrent validity* is the test's ability to estimate present performance. Concurrent validity, usually, is dependent on obtaining data from two different sources such as a respondent's score on a mental health-illness scale and the results of a psychiatric examination conducted at about the same time.

3. *Content validity* refers to the consistency of the various individual items constituting the scale. Thus, the internal consistency refers to relationships among the items in the scale in terms of the total scale score. For example, in a depression scale, items referable to lowered mood and sleep disturbances will be reported frequently and have high content validity. But an item referring to accident proneness will have much lower internal consistency or content validity since many depressed persons will respond negatively when questioned about accident proneness even though it may be an indicator of suicidal intent stemming from depression. Technically, internal consistency is calculated according to the mathematical procedure outlined by Cronbach⁵⁹ and is expressed as Cronbach's Alpha, or the alpha coefficient, which ought to be as high as 0.7 or 0.8.

4. *Construct validity* refers to the test's ability to measure its underlying concept or "construct." Psychiatric epidemiologists have great difficulties using scales measuring global constructs such as mental illness since the fundamental concepts of mental illness can be both vague and variable. As a consequence, investigators often try to work with a number of smaller, more discrete constructs, such as anxiety and/or depression, rather than mental illness. But even anxiety and depression scales have somewhat limited construct validity because these conditions are conceptually complex.

Reliability refers to a test's or scale's ability to yield consistent results over a period of time. Standardized intelligence tests are highly reliable except during early childhood, periods of crisis or illness, or old age. But indices of the mental disorders are usually quite unreliable. Mental illness often varies in its intensity and is influenced by intervening variables, such as changing marital and socioeconomic conditions, as well as by the natural course of the disorder.

One commonly used method for measuring a scale's reliability is to readminister it to a representative sample of the population at a given time after it was first used, usually six months or one year. This procedure provides a measure of test-retest reliability, but it is unlikely that such test-retest reliability will be high for most mental disorders, such as those

characterized mainly by anxiety or depression. Treatments, changing conditions at home or at work, or other factors may be responsible for either improvement or worsening of the symptomatology so that results obtained on retesting after six or twelve months tend to be different from those obtained earlier.

One indirect way of obtaining some data on test-retest reliability is to include questions to which one could expect consistent answers initially and at a later time. For example, basic demographic data about place and date of birth, composition of family of origin, and health questions about surgical procedures earlier in life, should elicit consistent responses even though responses to items about nervousness or sleep disorder might be different at the time of retesting. The respondent who gives variable responses to the demographic and early life items would be labeled "unreliable," and, as a consequence, his responses to mental illness items would be considered to have little reliability.

In community surveys a certain number of subjects will be unreliable; they may not be physically or mentally able to give consistent responses to a researcher over a period of time or may not wish to do so. But even the results of clinical examinations may not be completely reliable since, to some extent, they are a function of the examiner. Changes in time or circumstance can influence the subject, the interviewer, or the examiner; and, of course, symptoms of mental illness are known to be evanescent and variable.

The psychiatric epidemiologist has an obligation to ascertain the validity and reliability of his method of investigation (e.g., scales or clinical examinations). For validation, the investigator is usually limited to data from only a few different sources: subjects' responses during interviews and their scale scores, information from medical records or public documents, and results of clinical examinations. Reliability, likewise, must be ascertained from data gathered at two or more points in time, generally by retesting and/or by searching medical and other records for events that took place during that period of time.

Interviewer and Response Bias

In addition to the previously discussed methodological problems involved in survey research, the investigator has to measure the interviewer bias and the response bias. *Interviewer bias* relates primarily to the "set," which the interviewer carries with him; for example, an interviewer with preconceived notions about mental illness may consciously or unconsciously influence the respondent's answers to various items by facial expressions, vocal inflections, or other expressions of agreement or disagreement.

Response bias is usually even more complicated; there are numerous types. *Acquiescence* is the subject's desire to please the interviewer by agreeing with him or providing answers that he assumes the interviewer wishes to hear. *Yea-saying* and *nay-saying* are the respondent's tendency to reply consistently with a "yes" or "no" to every question rather than to think about the accuracy of his response. *Denial*, or the respondent's inability or refusal to reveal symptoms of mental disorder or other information about himself, may stem from unconscious or conscious desires to shield himself from unacceptable fears or to conceal information from the interviewer. Most of us almost automatically want to make a good impression on others; a respondent usually fears that the interviewer will think poorly of him if he reveals the truth. Denial, of course, may be an intrinsic component of neurosis or psychosis. Conversely, sometimes a respondent *exaggerates his plight* as a bid for sympathy or to procure material assistance or other help from the interviewer.

In addition to these problems with survey research or other epidemiologic studies using firsthand information, the results of such investigations have been questioned vigorously in view of inherent problems with validity and reliability. But these problems are reduced when the investigator conceptualizes the study as fully as possible, defines the research question as precisely as possible, and uses the appropriate methodology rigorously. Investigations of the incidence and prevalence of mental illness, and particularly its associations with environmental factors, are bound to be handicapped by a lack of validity and reliability because mental illness is a human problem—imperfectly understood, variably defined, and shadowed by pejorative attitudes and stigma.

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6

Associations and Causation

The aim is not to 'prove'—even in a very loose sense of the word—cause-and-effect relationships between sociocultural factors and psychiatric disorder. The concern is rather to discover certain kinds of association between the two, to define targets for more penetrating investigation, and to consider the nature of the problems inherent in attacking such targets.

—ALEXANDER H. LEIGHTON¹

Epidemiologic studies search for observed and statistical associations between host and environmental variables that lead minimally to an increased understanding of health and illness, or optimally to the discovery of causal or preventive processes. Hippocrates' contributions to our knowledge of disease were derived from astute clinical observations and his ability to generalize from the part to the whole. But nowadays, the epidemiologic method uses statistical procedures to ascertain whether there are associations among the variables investigated and the direction and strength of such association. Pierre Louis² is credited with introducing "The Numerical Method" into medicine in the 1830s. His descriptive statistics, termed "simple bookkeeping" by Feinstein,³ helped end the common use of bloodletting by leeches as the routine form of treatment for many diseases, first in France and later in other Western nations.

Associations

Associations determined by statistical procedures may be either positive (e.g., an event is related to the condition) or negative (e.g., an event is inversely related to the condition). Both positive and negative associations may have value; too frequently, investigators just beginning to undertake research studies become excessively concerned because they fear that their findings will not have statistical significance. As a consequence, they do not appreciate that "not significant" (NS) findings can be meaningful

contributions. Furthermore, often they either fail to look for or disregard the importance of negative associations.

Another pitfall is excessive reliance on the positive association between two variables, which may be relatively meaningless because a third variable is fundamentally responsible for the association between the first two. An example is our finding in an epidemiologic study of a southeastern county that significantly more of the blacks than the whites had high scores on a depression scale. However, low socioeconomic status (SES) was a highly significant variable common to both high scores on the depression scale and to being black. In the multivariate analyses, the statistical significance of low SES “washed out” the power of race as a significant variable.⁴

Statistical association expresses the *probability* that two or more variables are related in some way other than by chance. Statistical methods thus show whether two or more factors are positively or inversely related, or whether there is no association between them. Conventionally, significance begins at the 0.05 level of probability (i.e., the relationship occurs by chance only 1 time out of 20) and extends to the 0.0001 level (i.e., occurring by chance only 1 time in 10,000).

Associations and Inference about Causation

Simple associations between two variables, e.g., stressors and mental illness, inform us only about correlations, not causation. LeRiche and Milner⁵ state: “[T]he general issue of how to prove ‘cause’ is neither clinical nor statistical, and neither ‘prospective’ nor ‘retrospective.’ It is a matter of logic, and of what constitutes a valid form of reasoning with statistics. No statistical manipulations are ever a proof of ‘cause.’ All they can do is to give logical support to our suspicions of a cause.”

In *Principles of Medical Statistics*, Bradford Hill⁶ lists five considerations that enter into any inferences drawn about causation from associations. These are: sequence, strength, consistency, specificity, and the dose-response curve or gradient. Sequence refers to the temporal association between the associated variables; the possible causal event, logically, must precede the occurrence of the condition (illness). Strength refers to the statistical significance of the association; the greater the significance the more likely it may have played a causal role—but not necessarily so. Consistency refers to the frequency with which the association is observed and can entail replication of the investigation. Specificity of association refers to the precise identification of the variables. In the epidemiology of chronic illness, psychosomatic conditions and mental disorders, specificity is usually difficult to determine, except for diseases characterized by identifiable pathophysiologic processes, such as diabetes, coronary heart disease, and mental retardation that is produced by an inborn error of

metabolism, such as phenylketonuria (PKU) which has a frequency in Western nations ranging from 1:10,000 to 1:20,000. The dose-response curve refers to the amount of the causative events(s) or condition(s) that the person can sustain without becoming ill or that can produce the condition. Small amounts of the theoretically causative factor should produce little risk, whereas large amounts should produce high risk. The effects of sleep deprivation, for example, usually follow the dose-response curve: Limited deprivation seldom produces mental aberrations, whereas prolonged sleep deprivation can produce brief, evident psychotic states.

In addition to these criteria, the association must be in agreement with observable facts and our understanding of mechanisms, biological, and/or sociocultural. LeRiche and Milner⁵ insist: "We should also consider the general coherence of all evidence presented in a particular situation, whether or not it was involved in the particular experiment."

Causation

Although simple associations reveal relationships only when they are in a certain sequence, strength, and consistency, they can be used for drawing inferences about causation. In *Causal Thinking in the Health Sciences*, Susser⁷ presents five major strategies for conducting investigations and for organizing observations systematically to make inferences about causation.

The first strategy refers to the research design. It involves "simplifying the conditions of observations." It is necessary to simplify these conditions because studies in psychiatric epidemiology are complicated by two fundamental problems. The first is the interrelatedness of man and the environment that usually precludes the scientific separation of discrete variables. For example, the quality of life in a community can be viewed as both a determinant of and as a resultant of the members' mental health or illness. The second fundamental problem is that social processes and an individual's mental state are different levels of abstraction. Susser mentions that selecting random samples, utilizing matched control groups, or following a cohort over time are methodologies that should reduce the biases and errors intrinsic to epidemiologic studies.

The second strategy involves screening causal models to eliminate, or at least to measure, extraneous variables. In the health sciences, for example, age is associated with physical health, marital status, and income level; more older people have physical disabilities, are widowed, and are poor. Thus, studies of depression and marital status, as Susser points out, must consider the influence of age and physical well-being. Screening also is accomplished by refining the dependent variable, such as measuring absenteeism from work rather than assessing the more global dependent variable "mental illness."

The third strategy consists of “elaborating the association between variables” and involves statistical analyses. Statistical techniques are used to detect possible sequences and associations and to ascertain the strength of associations. To illustrate, associations between the variables X and Y may be: (1) symmetrical, $X \leftrightarrow Y$ (the two variables interact with each other to the same extent); (2) asymmetrical, $X \rightarrow Y$ (X produces Y): or (3) an alternative asymmetrical relationship, $X \leftarrow Y$ (Y produces X). Venn diagrams illustrate these associations. An example adapted from Susser is shown in Fig. 3. The strength of the association between the variables X and Y is shown by the shaded overlapping area. When X is considered to be the independent variable producing an effect in the dependent variable Y , the shaded area is the proportion of the variance explained by X ; the unshaded area in Y is the unexplained variance. As mentioned earlier, a third variable can explain the relationship between the first two.

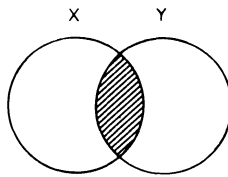


Fig. 3. Venn diagram.

The fourth strategy employs the principles of probability for finding stronger causal inferences. Multivariate techniques, such as the use of a stepwise multiple regression equation, can explain the amount of the variance in the dependent variable (e.g., differences between high and low depression scores) attributable to postulated independent variables. For example, in our “Analysis of Social and Racial Differences in Depressive Symptomatology,” the variables age, sex, race, and SES explained 12.65% of the variance in the respondents’ depression scores. A respondent’s score on the depression scale increased by about 2.4 points for every quintile reduction in his SES score. And being a female accounted for a 2.6-point increase in the depression score. Age and race contributed little.⁴

Such statistical findings, however, have only explanatory value, not causal meaning. Moreover, such techniques have certain limitations in that they include, for example, assumptions about the population (that it is normatively distributed) which may or may not be valid.

The final strategy is judgmental and is based on the sequence, strength, consistency, specificity, and coherence of the associations. Susser concludes: “The process of causal analysis, central to all science, is most crucial where the subjects of study are least biddable. . . . Where landmines are everywhere, one should not venture out without a mine detector.”⁸

The Concept of Causation

The earliest principle of causation, perhaps, was stated by Leucippus in the fifth century B.C.: "Nothing happens without a cause, but everything with a cause and by necessity."⁹ Aristotle, the creator of formal logic, defined four kinds of causes: material, formal, efficient, and final. The material consists of the basic elements or phenomena; the formal is the essence of the result; the efficient is the mechanism employed to obtain or produce the result; and the final cause is teleological—the purpose. But, according to the rules of formal logic, everything must have a beginning: one cause-and-effect relationship must be preceded by another, and that by another, and so on—there must be a First Cause, an originator.

The limits of deductive reasoning for understanding causation were recognized in the thirteenth century by Roger Bacon,¹⁰ who emphasized that certainty in science could result only from the application of the experimental method: "Experimental science alone is able to ascertain what can be effected by nature, what by art, what by fraud." In the early years of the seventeenth century, Francis Bacon¹¹ developed the concepts of induction—the arrangement and handling of data derived from experiment and observation in such a way that general laws could be formulated. Bertrand Russell cites an example: Bacon listed properties (e.g., heat) of a number of substances to ascertain possible common characteristics and thereby arrive at "degrees of generality" that could be observed and tested to develop more precise scientific laws. John Locke,¹² the eighteenth century philosopher, physician, and psychologist, came to the conclusion that "knowledge is the discernment of agreement or disagreement, either of our thoughts among themselves or between our thoughts and the external phenomena independent of them. . . . But relations between our thoughts and external things can only be established by induction from particular instances. Thus, knowledge of nature can only be an *affair of probability*, liable to be upset by the discovery of new facts [italics ours]."

Thus, Locke, the father of modern introspective psychology, stressed both the fundamental importance of empiricism that has been basic to the development of knowledge in the social sciences and also of probability that is an essential aspect of modern science. A century later, however, the Scottish skeptic, David Hume, argued that empiricism was an inadequate basis for proposing principles of causation. Associations between events he maintained, are merely matters of experience because "in nature events are conjoined, but we cannot infer that they are connected causally"¹³; for Hume, causality was an instinctive desire to believe.

The principles of inductive reasoning were brought to their acme by John Stuart Mill¹⁴ in his "canons of proof." He proposed five "eliminative methods of induction": (1) The method of agreement: When two or more occurrences of a phenomenon under investigation have only one variable in

common, it is the cause (or effect) of the given phenomenon. (2) The method of difference: When a phenomenon under investigation occurs in one instance and not in another and when the circumstances in which they occur have all variables in common, except one, that variable is the effect, or the cause, or an indispensable part of the cause, of the phenomenon. (3) The joint method of agreement and difference. (4) The method of residues: Subtract from any phenomenon under investigation the part known to be produced by certain variables whose effects are established—then the residue of the phenomenon can be attributed to the remaining antecedent variables. (5) The method of concomitant variation: When a phenomenon under investigation varies in any way whenever another phenomenon varies in a particular way, the first phenomenon is a cause or an effect of the second or is causally related to it in some way. Mill's elegant exercise in the logic of inductive reasoning, however, has become somewhat outdated in view of the findings of modern science that now require concepts of relativity and probability.

Causation in Psychiatry

In psychiatric epidemiology, our scientific base is fragile. To discover relationships that might have causal significance, we are compelled to rely on the qualities and quantities of associations that have been discussed. Although that discussion drew heavily on recent works, we should recall the causes of "natural" sensation listed by William Battie in 1758. Battie, a director of Bethlehem Hospital, a founder of St. Luke's Hospital for Lunatics [*sic*] in London, and the first teacher of psychiatry in England, believed that "mental illness is produced by disturbances of sensation arising from internal and external sources." In *A Treatise on Madness*, he outlined "a few considerations or causes in general" to illustrate his ideas.¹⁵

First, one phenomenon must precede another to have a cause-and-effect relationship.

Second, when any one phenomenon never fails to follow another, the first may be a sufficient cause of the second.

Third, when the second never occurs without the first, the first is a necessary cause.

Fourth, if nothing intermediate intervenes between the first and second phenomena, the first is the immediate cause.

Fifth, when the first is not always succeeded by the second and the second not always preceded by the first, the first phenomenon may be only an accidental cause.

Sixth, when one or more phenomena intervene between the first and second, the first is the remote cause.

Seventh, “the remote and accidental causes of any effect may be many.”¹⁵

The strictly scientific views on causation prevailing in the latter nineteenth and early twentieth centuries, as exemplified by Koch’s¹⁶ postulates, are not applicable in many fields, especially psychiatric epidemiology.* Other frames of reference are needed to explain scientifically psychiatric disorders and many other illnesses, such as coronary heart disease and, in some instances, infectious diseases.

Multiple Causation

We are compelled to view the mental disorders as the resultant of multiple, often synergistic causes. Morris¹⁹ argues that it is now obligatory to think of “multiple causes, variously combining together and of varying import, theoretical and practical. *Theoretical*—in terms of the explanation provided, and of the predicted fall in disease should causes be removed. *Practical*—in terms of possibility of doing so. . . . *Multiple causes offer multiple possibilities of action* [Italics ours].”

Morris explains that the *treponema pallidum* is only the infectious agent in syphilis; restricting our thoughts about the cause of syphilis to the spirochete limits our knowledge of syphilis as a venereal disease of public health importance because such thinking does not include, to use his example, “The psychology of promiscuity, the economics of prostitution . . . the sex mores of the time, etc.” He advocates a triangulated model of causation that includes: (1) causes in the host, (2) external-environmental causes, and (3) personal behavior.

Causes in the host include, at the most basic level, biological factors, such as genetic predisposition, which may be closely related to the personal behavioral factors. For example, hypercholesterolemia sometimes can be elevated or lowered by diet which is determined in part by life style. External-environmental causes are numerous; for example, crowding or deprivation can impinge on both the host and personal behavioral factors.

To Morris’ triangulated model, we add a fourth point: group factors, which include the human being’s cultural legacy, customs such as child-

* Robert Koch (1843–1910), whose presentation of a 17-page paper on the discovery of tubercle bacillus in 1882 is considered to be a classic in bacteriology that compares favorably with William Harvey’s description of the circulation in 1628, outlined four classic postulates for establishing the cause of a disease. These are: (1) the causative organism must be present in every case and demonstrated to be in the diseased part; (2) the organism must be isolated in pure culture; (3) the organism must produce the same disease when the pure culture is injected into an experimental animal; and (4) the organism must be recovered from the inoculated animal. MacMahon and Pugh¹⁷ point out that the first of the postulates is tautological because it implies that the microorganism is the cause of an already manifest disease state, and thus the cause defines the disease. Nevertheless, Koch’s genius is apparent; before his discovery of the tubercle bacillus, tuberculosis was seldom considered to be a single disease entity—usually it was thought to be a collection of diseases.¹⁸

rearing practices, and other manifold influences that lead to marriage within the same social group (intermingling genetic and social processes), or that involve peer-group pressures on behavior. Thus, group factors are intertwined with biological and social factors influencing the host, personal behavior, and reciprocally, the environment. Particularly for mental illness, the role of the group is especially important at many stages in the life cycle, e.g., the child's learning in the family setting. Also, group processes largely define and label mental illness.

Ecological Concepts of Causation

Recently, David Hume's skepticism—causality is an instinctive desire to believe—has been revived. Stent²⁰ maintains that there are "limits to the scientific understanding of man," since the concept of self is transcendental. He points out that the concepts of time, space, and causality, as elaborated by Kant, may be aspects of the mental functions that have been selected for survival through evolution.

For the mental disorders the miasma theory of disease is being resuscitated, not just metaphorically. This classical theory held that disease was caused not only by polluted air (miasma), but also, by "the corrupted vapors" arising from squalor, deprivation, crowding, and adversity.

Ecology, now an everyday term, was originally defined by Haeckel a century ago as "the body of knowledge concerning the economy of nature—the investigation of the total relations of the animal to its inorganic and organic environment."²¹ In the early 1920s, Park and Burgess²² introduced the term "human ecology" to describe basic relationships among people (competition, conflict, cooperation, and assimilation). And in the 1970s, ecological medicine has emerged. Rogers²³ writes: "The fact that organism and environment are inseparable necessitated creation of the term 'ecosystem.' . . . [E]cosystem interrelates organism, population, community, and habitat in a dynamic set of flows, exchanges, and feedback regulations."

Bloom²⁴ notes that the Community Mental Health Movement's endeavors are based on the principles of the classical miasma theory of disease. He believes that the miasma theory provides a useful model. Mental disorder at our current level of understanding can be controlled only by modifying the environment and by improving "individuals' resistance to deleterious psychic forces around them. . . . Current concepts of primary prevention in the field of mental disorders appear to be designed to remove existing accumulations of psychic sewage and to develop improved techniques to prevent their further accretion, both in the individual and in the community."

Mental illness is more common in environments characterized by instability, turmoil, adversity, corruption, and, in Leighton's terms, "disin-

tegration.” One of the original goals of the Community Mental Health Movement was to provide primary as well as secondary and tertiary prevention, and primary prevention depends on community endeavors that promote health as well as alleviate mental disorders promptly.

In his discussion, “Is Social Environment a Cause of Psychiatric Disorder?,” Leighton¹ illustrates the utility of ecologic concepts by citing Rudolph Virchow’s investigation of a typhus epidemic in the middle part of the nineteenth century. Virchow reported that, although a definitive causal agent for typhus had not been defined, the disease could be eliminated by correcting hygienic and social factors—crowding, poor nutrition, and poverty. Leighton notes that Virchow singled out social factors as “the salient cause . . . one that is critical in terms of some particular orientation. In most of our concerns in preventive psychiatry this will be for the years to come the causes about which something can be done to improve health. Thus, social conditions may be the salient cause in one situation, a virus in another, diet in a third, birth traumata in another, and so on. Much of future research will concern mapping out the networks of causal factors, and then, further, identifying certain particular items as, in this sense, salient. Arguments about which cause is the most important will fade. We will know that the importance of one cause as compared to another depends on the purpose of the questioner. If the purpose is treatment or preventive action, the salient cause, from among all the causes in the complex, is the one about which we can do something.”

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7

Early History of Psychiatric Epidemiology

To judge rightly of the present we must oppose it to the past; for all judgment is comparative, and of the future nothing can be known. . . . If we act only for ourselves, to neglect the study of history is not prudent; if we are entrusted with the care of others, it is not just.

—SAMUEL JOHNSON¹

The purpose of this chapter is to present, in résumé form, the historical development of psychiatric epidemiology. We will summarize investigators' achievements that have supplied information and have contributed to the improved conditions for the care of the mentally ill. We will attempt to do more than offer a chronological account of the development of psychiatric epidemiology. The methods and purposes of studies have changed over time, not just as an evolution in science, but also in consonance with shifting attitudes toward mental illness, the accumulation of social facts, and varying ways of looking at the relationships between the social environment and the health of a society and its members. In this century, the shift in interest from "hereditary tainting" to current concerns about ecology and mental illness reflects the changes from Neo-Darwinian concepts of evolution and adaptation to general systems theories of man and the environment. Therefore, we will relate the description of investigators' efforts to the sociology of knowledge of the time.

The perspective offered by the sociology of knowledge enriches the historical method by relating events to the dominant concerns of an era and to the methodologies used to investigate those concerns. This phenomenological approach was outlined by the German sociologist Alfred Vierkant² in 1923. It seeks to discover "the essences of society, social behavior, and social relations" through phenomenological analysis of demonstrable facts and events. As Martindale³ explains: "Every type of social movement or structure has forms of knowledge particularly appropriate to it." The works of sociological phenomenologists, such as Alfred Vierkant, Max Scheler, and Karl Mannheim, are of special interest to social psychiatrists

because they emphasize that an understanding of groups is dependent upon studies of social relationships. The essence of Gestalt theory—the whole (group) is more than the sum of its parts (individuals)—is an outgrowth of this approach.

We credit the concept of “the sociology of knowledge” to Max Scheler,⁴ who maintained that there are a number of forms of knowledge. The most fundamental are the cultural axioms of a group which form “the climate of opinion,” and change at a much slower rate than do forms of technical knowledge. Furthermore, the more technical and more rational the form of knowledge becomes, the more rapid its rate of change.

From this perspective, we can see some relationships among dominant ideologies, societal concerns, and studies in psychiatric epidemiology at certain periods in history. For example, in the seventeenth and eighteenth centuries the simplest form of descriptive epidemiology developed as a method for comparing rates of admission to and discharge from asylums for administrative purposes as the states and nations in Western Europe became more centralized and bureaucratic. Later, at the end of the eighteenth and the beginning of the nineteenth centuries, more ambitious studies were aimed at determining whether the drastic sociopolitical events of the times were producing mental illness; Western societies were shaken by the political unrest stemming from the American and French revolutions and humanitarianism emerged as a social sentiment. The consciousness of the era included awareness of the wretched conditions in asylums and led to demands for reform. The work of investigators of that period was more sophisticated than that of their predecessors. Richard Powell, George Man Burrows, and, above all, Esquirol began to analyze systematically data about the mentally ill. Finally, late in the nineteenth century, with advances in science and the increasing complexity of modern society, psychiatric epidemiologists focused their efforts on the search for causes of mental illness. They looked at the relationships between society and man’s mental state to examine the age-old question: Does civilization produce mental illness?

During the latter part of the nineteenth century, few epidemiologic studies were undertaken, probably because psychiatry was involved with new developments. Kraepelin’s classification of the mental illnesses established a basis for the taxonomy necessary for the scientific development of psychiatry. His interests in the hereditary aspects of mental illness spurred some of his followers to undertake genealogical investigations of the mentally ill. (Kraepelin’s own concern with social psychiatry is a relatively neglected aspect of his work; see Chapter 1.) Microscopic studies of the central nervous system, epitomized by the work of Wernicke and Kleist, aroused vigorous interest in neuropathology and the hope of finding anatomical lesions of etiologic significance. Freud’s development of psychoanalysis successfully stimulated the growth of individual psychology.

Probably the earliest statement of interest in psychiatric epidemiology is John Graunt's⁵ often quoted *Observations on the Bills of Mortality*, London, 1662. After tabulating information from those early death certificates, Graunt, the originator of modern demography, wrote: "The Lunatics are also but few, viz. 158 in 229250, though I fear many more than are set down in our Bills. . . ." His simple observation presaged continuing difficulties—changes in nomenclature and both incompleteness and inaccuracies in death certificates that make it difficult to obtain estimates of prevalence over time that have even a reasonable degree of reliability (Graunt's law).

The groundwork for the epidemiology of mental disorders was laid in the middle of the seventeenth century with the introduction of methods of quantification in the social sciences. As Paul Lazarsfeld⁶ has pointed out, it is difficult for us to imagine the paucity of information available at that time and the difficulty of "obtaining numerical information on social topics." In the seventeenth century, enumeration and quantification became major concerns fundamental to the development of science and bureaucracy. In the 1620s, for example, Harvey's questions about the *amount* of blood that the heart pumped and his primitive calculation of the stroke volume led to the discovery of the circulation. William Petty⁷ (1623–1687) developed "political arithmetic," mathematical analyses of the characteristics of populations, needed by the expanding mercantile systems and the centralized governments that were emerging with the new nationalism. About the same time, Conring⁸ (1606–1682), in Germany, proceeded to enumerate the characteristics of the state—from which our word "statistics" is derived.

A very early example of the tabulation of admissions to and discharges from mental institutions for administrative purposes is supplied by John Strype's⁹ "Description of Bethlem Hospital." Between 1684 and 1703 there had been 1,294 admissions and 890 discharges; two patients in three had been cured and discharged—an enviable record. The proportion discharged as cured excited the English epidemiologist Burrows,¹⁰ who, in 1820, reported that the figures had been furnished by Dr. Tyson, that famous hospital's first physician. Burrows notes: "This evidence is the more important, since it is half a century anterior to any quoted, either of this or any other lunatic institution . . . the recoveries were in a ratio considering the then state of medical knowledge, surpassing perhaps that of most other diseases."

But a century later, William Black's¹¹ analysis of the "Table of Cases in Bedlam" showed that, of the 3,403 patients who had been treated from 1772 to 1787, only 924 had been cured. In view of the relapse rate, Black concluded that the proportion cured was only one out of three—strikingly similar to some present-day statistics.

In the seventeenth and eighteenth centuries, an increasing number of persons—the mentally ill, eccentrics, nonconformists, and paupers—were

confined to mental institutions. For example, 1,294 patients were admitted to Bethlem Hospital in the 19-year period 1684–1703, whereas 3,403 were admitted in the 15-year period 1772–1787. The early history of psychiatric epidemiology shows that a society may need to relegate a certain percentage of its population to special roles, for example, the sick role, if not to institutions, as a mechanism for maintaining social control. Evidence of society's seeming need to exclude a certain segment, the undesirable, for whatever reason, is supplied by Foucault¹² in his book *Madness and Civilization*. He points out that, as leprosy vanished in Western Europe at the end of the Middle Ages, mental illness increased. England and Scotland, with a population of 1,500,000, opened 220 leprosaria in the twelfth century; in the fourteenth and fifteenth centuries practically all of them were closed because of lack of patients. In France, 1,200 lazar houses existed at one time, but late in the seventeenth century only a few lepers could be found to be lodged in the houses reserved for that purpose. Foucault maintains that, although leprosy disappeared, the values and images attached to the leper and the social importance of his exclusion were transferred to witches, to the mentally ill, and later, to the poor. He states: "Madness was given a place in the hierarchy of vices [and was linked not] . . . to the world and its subterranean forms, but rather to man, to his weaknesses, dreams, and illusions."¹³

During the last five centuries, various means have been used to extrude, eliminate, or immure the disturbed and the undesirable. In the fifteenth century, the ship of fools transported the deranged away from the medieval cities. And in that century and the next, minimally hundreds of thousands of persons (mostly women) were burned at the stake. Kors and Peters¹⁴ recount: "No estate, no clan, no group, however conceived, was completely exempt from the pervasiveness of belief in witchcraft and even the more dangerous belief that anyone could be a witch and that witches could strike anywhere. The theological and judicial portrait of the witch responded to and inspired in its turn an ever-widening public consensus until scholar and peasant, jurist and artisan, priest and layman, king and merchant, all believed, and believing, feared and called for even more intensive persecution. . . . Accusations and prosecutions flourished until the 1650's."

But in the seventeenth century, with the decline of witchcraft, which had served as a dominant means of social control for more than 200 years, walled institutions were substituted for bonfires. A few years after the founding of the Hôpital Général in Paris in 1656, it held 6,000 persons, more than one percent of the population. By the end of the eighteenth century, there were 126 workhouses (bridewells) in England. An entire network of centers of confinement spread across Europe; these hospitals, houses of correction, and prisons contained the insane, the felons, the beggars, and other deviants who were thus excluded from society. The

confinement in the seventeenth century, according to Foucault, marked a decisive event in the history of unreason: "the moment when madness was perceived on the social horizon of poverty, of incapacity for work, of inability to integrate with the group."¹⁵

The confinement of increasing numbers of the mentally ill throughout Western society in the seventeenth and eighteenth centuries required record keeping for administrative purposes. By the end of the eighteenth century, concern about the wretched conditions of the asylums led to demands for governmental standards. With Western society racked by the sociopolitical turbulence of revolution and industrialization, epidemiologic methods began to be used to determine whether mental illness was increasing.

In 1810, Richard Powell reported his "Observations upon the comparative Prevalence of Insanity, at different Periods" to the Royal College of Physicians. Powell was one of the first to use the psychiatric case register established in 1775 by the British Parliament's 1774 *Act to Regulate Madhouses*. He undertook a 35-year examination of the Register: "For the purpose of trying how far the relative numbers contained in them would support the popular opinion respecting the rapid increase of that most difficult, delicate, and important disease, and also of trying whether any analogy or connection could be established upon more solid grounds, between the number of insane persons and the political circumstances of the times, or any known variations in the seasons of different years."¹⁶

Powell noted that it was necessary to compare the number of confined mentally ill with the population "of a country at exactly the same times, and to compare under the same dates the numbers of each."¹⁷ He presented the data as the number of admissions per year, beginning in 1775, but summed each five-year period to provide the "Total of each Lustrum" (e.g., 1,783 admissions during the years 1775–1779 and 2,271 admissions during the years 1805–1809). The word "lustrum," meaning census for a five-year period, is derived from the term for the Roman ritual performed every five years after the census was completed.

Powell concluded: "Insanity appears also to have been considerably upon the increase; for if we compare the sums of two distant lustra, the one beginning with 1775, and the other ending with 1809, the proportion of patients returned as having been received into lunatic houses during the latter period, is to that of the former nearly as 129 to 100."¹⁸ Also, Powell found that consistently more were admitted from London than from the rest of the country. He alluded to the "imperfections of the bills of mortality," the inaccuracies of the census, and the hazards of drawing deductions about the frequencies of mental illness in the population from such an epidemiologic study.

Fears that the complexity of civilization were too much for the capacity of man's nervous system prompted further studies. The senti-

ments of the time romanticized nature and the simple life and indicted civilization as the source of man's miseries. In his *Inquiry into Certain Errors Relative to Insanity* in 1820, Burrows stated: "That this malady prevails more at one time than another is indisputable; but this is no proof of its increment."¹⁹ After a detailed analysis of admissions to British asylums from 1775 through 1819, controlled for population growth, he reported that there had been only an apparent, not an actual increase in the number of insane. He concluded that the apparent increase was produced mainly by two factors: first, the excited interest in the subject, and second, the improved facilities with more accurate record keeping. These continue to influence our notions about the prevalence of mental disorders.

Burrow's analyses of the data in the Register were methodologically superior to Powell's. Burrows noted that there had not been a progressive increase in the number of mentally ill from 1775 to 1819. And he related increases within certain five-year time periods to various events. The increased rates in 1790-1794 could be attributed to deep sympathy about George III's mental illness, the high rates in 1800-1804 to the failure of the harvest of 1800 and the "extremity of distress and suffering," and the drastic increase in 1809 to a new parliamentary bill providing for better care that "incited fresh attention to the condition of the insane. . . ."²⁰ Also, Burrows found that the greatest increases in admissions occurred in an *inner city London parish with a large, rapidly growing population*: "as this district constitutes an integral part of this great metropolis, it naturally participates in all its vices, and consequent incentives to mental derangement."²¹

Burrows found an increase in only one of ten other institutions, the Cork Asylum in Ireland; he attributed that increase to the rebellious and unhappy conditions in Ireland. Thus, differences between nations, as well as differences between rural and urban areas within a nation, interested these investigators.

The attempts of humanitarians and philanthropists to improve conditions for the care of the mentally ill are illustrated by Sir Andrew Halliday's efforts for 25 years during the first part of the nineteenth century. He combined "social action" with scientific studies. Halliday notes that the *Act [of 1774] to Regulate Madhouses* did little more than provide for "the casual inspection of licensed establishments. . . ."²² His appeals to the public and to the British Parliament resulted in the erection of public asylums for the insane poor, beginning in 1809. (Burrows reported that there had been a drastic increase in the number of admissions during that year.) Halliday sought to obtain a complete enumeration of the mentally ill in various Western nations and to ascertain whether they were receiving treatment. He believed that two-thirds of the 8,000 persons confined to public and private asylums in England and Wales in 1826 were curable.

In Scotland, after finding that only 648 mentally ill were in institutions and ten in jails, Halliday polled the clergy in 900 parishes to obtain a more complete count. This method (the key-informant approach to prevalence discussed in Chapter 5, Part 1) yielded 800 replies and data indicating that there were about 3,700 “insane persons and idiots” in the nation: 146 in private asylums, 50 in public asylums, 60 in Edinburgh’s Bedlam, 387 in other public institutions and workhouses, 1,192 lodged with private individuals, and 21 in jails, totaling 1,861. Almost an equal number, more than 1,600, were “allowed to be at large, most of them wandering over the country, and subsisting by begging.”²³

Halliday reported that in France, Holland, and southern Europe the mentally ill were classed mainly with the sick and the infirm, but that in northern Europe “and in Great Britain” the mentally ill were “associated with thieves and murderers.” He believed that the care of the mentally ill in The Netherlands was superior to that provided in any other country, and stated that the conditions at Gheil were so excellent that “more patients are cured at this village than in all the hospitals of the kingdom put together.”²⁴ But, he lamented that an accurate register was not being kept at Gheil.

The work of these early investigators—Powell, Burrows, and Halliday—paralleled approbation of the moral treatment of the insane and the emergence of psychiatry as a medical discipline. The climate of opinion was favorable for these developments. The triumph of rationalism earlier in the eighteenth century had dispelled some of the dogma and superstitions of the past. The advance of knowledge carried with it the conviction that external reality was subject to natural laws which could be understood and explained, and that this would inevitably lead to progress. The social sciences started to become empirically based disciplines concerned with the nature of society, its culture and institutions, and their influence on man’s well-being. Politically, the social order was shaken by the American and French revolutions, heralding the decline of feudalism and the advent of democracy. And, significantly, the spirit of the Enlightenment embodied sentiments proclaiming the rights of man, equality, and humanitarianism. The sensibility of the age prized imagination and the emotions, fundamentals of the Romantic movement that flowered in poetry, music, and art. De Quincey²⁵ expressed the sentiments of the times: “The understanding heart is the interchangeable formula for man in his highest state of capacity for the infinite. Tragedy, romance, fairy tale . . . all alike restore to man’s mind the ideals of justice, of hope, of truth, of mercy, of retribution, which else (left to the support of daily life in its realities) would languish for want of sufficient illustration.” Thus, the intellectual, political, and emotional climate was favorable for changed attitudes toward the mentally ill, the development of new therapies, and the dawning of modern psychiatry.

As we have seen, at least since the end of the Middle Ages, the mentally ill in Western society have been stigmatized, ostracized, and later shielded from public view by confinement. In 1828, Halliday²⁶ wrote: "Through an unaccountable weakness in human nature . . . a feeling has hitherto obtained among all classes of society, that a something disgraceful, nay, almost amounting to criminality, became attached to the person, and even to the family of an unhappy Lunatic. The attack of the disease was, therefore, no sooner confirmed, than he was put under the charge of some heartless hireling, and hurried off to a place of concealment, where it became the interest of his keeper to have his disease made permanent." But within a few years, at the end of the eighteenth century, in three countries—Italy, France, and England—inmates were unchained, and humane therapies were advocated and accepted.

The critical importance of the sociocultural climate for the acceptance of movements, such as the promulgation of moral treatment, can be illustrated. When Valsalva²⁷ freed the inmates in Bologna in the early 1700s, almost a century before Chiarugi and Pinel, his actions had little or no impact and did not lead to the development of moral therapies. Although he was the most esteemed physician in Italy, and "made himself spokesman for the gentle and humane handling of the insane, for 'no-restraint,' instead of the heavy chain and the whip . . ." his deeds went relatively unnoticed.²⁸ They did not disturb the tranquil stability of the feudal order in central Italy, and were disregarded by the wider society which was socially and ideologically unprepared for a changed view of the human being. The influence of the social climate can extend beyond the significance attached to events at a particular time to include the record of history; even today, we do not recognize Valsalva's contributions to psychiatry—as the first to oppose Celsus' 1500-year-old prescription of chains for the treatment of insanity—although we teach about his classic maneuver in physiology.

The unchaining of the mentally deranged in the 1790s necessitated the development of therapies as substitutes for physical restraints. Moral treatment, educational and occupational therapies, and supportive measures were espoused by the leading psychiatrists of the nineteenth century. Guided by the sentiments of the Enlightenment, the new humanitarianism, and the ideals of the French Revolution, Pinel²⁹ outlined the principles of moral therapy. "Attention to these principles alone will, frequently, not only lay the foundation of, but complete a cure: while neglect of them may exasperate each succeeding paroxysm, til, at length, the disease becomes established, continued in its form, and incurable. *The successful application of moral regimen exclusively, gives great weight to the supposition, that, in a majority of instances, there is no organic lesion of the brain nor of the cranium*" (Italics ours).

Pinel followed in Hippocrates' footsteps. In *A Treatise on Insanity*, Pinel tells that, when he was given charge of Asylum de Bicêtre in 1790:

. . . every thing presented to me the appearance of chaos and confusion. Some of my unfortunate patients laboured under the horrors of a most gloomy and desponding melancholy. Others were furious, and subject to the influence of a perpetual delirium. . . . Symptoms so different, and all comprehended under the general title of insanity, required, on my part, much study and discrimination; . . . I, therefore, resolved to adopt that method of investigation which has invariably succeeded in all the departments of natural history, viz. to notice successively every fact, without any other object than that of collecting materials for future use; . . . With this view, I first of all took a general statement of the symptoms of my patients. To ascertain their characteristic peculiarities, the above survey was followed by cautious and repeated examinations into the condition of individuals. All our new cases were entered at great length upon the journals of the house. Due attention was paid to the changes of the seasons and the weather, and their respective influences upon the patients were minutely noticed.³⁰

He compiled a detailed list (Table 3) of the "Cases of Insanity Cured at the Asylum de Bicêtre, in the Second Year of the Republic, by Regimen and Exercise Exclusively"³¹ that is much more explicit and precise than most early records.

From the perspective of the sociology of knowledge, we can see that the intellectual character of the age, and the acceptance of emotions were conducive to changing attitudes toward the mentally ill and the introduction of new therapies that propelled the development of psychiatry as a medical specialty. Karl Mannheim³² explains: "The sociology of knowledge should seek to investigate the conditions under which problems and disciplines come into being and pass away. . . . [They] must be viewed and understood against the structure of the society in which they occur . . . comprehended in the ever present, but constantly changing configuration of experience in which they actually are lived. Only in such a context do they acquire meaning."

The word "psychiatry," first used by Feuchtersleben in the 1840s, was derived from "psychiaterie" coined by Reil in 1808 and from the term "psychiatrie" used by Heinroth in 1818.³³ The first psychiatric journals were published in the early 1800s, and the first Chair in Psychological Medicine was established in Leipzig in 1812 for Heinroth, who had studied with Pinel. Jean Etienne Esquirol, Pinel's most famous pupil, is credited as being the first to introduce psychiatry into the medical curriculum in 1817.

From a surprisingly modern sociocultural frame of reference, Esquirol maintained that "The prevailing sentiments of every age, exercise a powerful influence, over both the frequency and character of insanity. . . . The frequency of insanity, is always in relation with conditions in life, which render man more dependent upon social vicissitudes."³⁴ He systematically collected data about mental illness in France over a number of

Table 3. A General Table of Cases of Insanity Cured at the Asylum de Bicêtre, in the Second Year of the Republic, by Regimen and Exercise Exclusively

Periods of admission	English calendar, days inclusive	Age	Trade or profession	Cause	Species	Relapses where they occurred
November,1790		45,	Gardener	Disappointment in love	Periodical mania with delirium	Two relapses on seeing the beloved object
July,1792		22,	Mason's Labourer			
November,1790		22,	Soldier	Consequence of acute fever	Accidental dementia	
Frimaire,year 2	Nov. 22,Dec. 21	21,	Do			
Pluviose,2	Jan. 21,Feb. 19	24,	Do	Terror	Periodical mania with delirium	Relapsed for a fortnight
Ventose,1	Feb. 20,March 21	30,	Do			
Do	Do	24,	Do	Excessive ambition	Do	Three relapses
Germinal,1	Mar. 22,April 20	36,	Tailor			
Do	Do	24,	Do	Loss of property	Do	One relapse from premature dismissal
Do	Do	36,	Tailor			
Do	Do	28,	Waterman	Jealousy	Do	Relapsed after his dismissal
Floreal,1	April 21,May 20	36,	Tailor			
Messidor,1	June 20,July 19	44,	Labourer	Heat of the sun	Periodical mania with delirium	Relapsed three times before his dismissal
Vendemaire,2	Sep. 23,Oct. 22	46,	Shopkeeper			
Do	Do	64,	Labourer	Distress of mind	Periodical mania with delirium	
Messidor,2	Do	25,	Tanner			
Thermidor,2	July 20,Aug. 18	46,	Do	Terror	Do	
Do	Do	56,	Hairdresser			
Thermidor,2	Do	25,	Soldier	Excessive ambition	Do	
Do	Do	22,	Do			
Do	Do	22,	Do	Terror excited by the discharge of artillery	Periodical mania with delirium	

Adapted from Pinel.³¹

decades in the early nineteenth century, and compared his findings with reports from elsewhere in Europe and the United States. He analyzed records of admissions to the Bicêtre and the Salpêtrière, and presented the data according to months and years, age, sex, professions, modes of life, and physical causes. He believed that insanity was more common in the temperate than in the cold climates and reported that admissions increased during the months of May through August and decreased during the autumn and winter.

Esquirol was particularly interested in relationships between mental illness and age and sex. He found that mental illness was more frequent among men in the age group 30–40 years and among women in the age group 50–60 years than in other age-sex groups. As shown in Table 4, the “Table of the Sex. No. III,”³⁵ he gathered data from numerous sources to determine sex ratios. He summarized: “the disparity in numbers between men and women, is much less considerable than is usually supposed. . . . [and that the difference is nearly] the proportion which exists between the two sexes, in the general condition of the population.”

Esquirol also noted that admissions to mental hospitals in Paris had doubled in 30 years, and studied the question: “Is there now more insanity than existed previous to the [French] Revolution?” Comparative analyses of rates of admission to mental hospitals in various cities in France showed “that this increase is no where taken place except where the erection of buildings and the improvements in their treatment have begun.” He concluded “that if the number of the insane has increased since the Revolution, that this augmentation is more apparent than real.”³⁶ However, Esquirol did think that political commotions produced insanity “by changing the circumstances of all men”—either through misfortune or the sudden acquisition of wealth.

Esquirol carried the epidemiologic method forward in his attempts to specify relationships between sociodemographic factors and mental illness as precisely as possible despite the crudeness of the data. Throughout his

Table 4. Table of the Sex. No. III

1756.—Raymond at Marseilles,	50 men to	49 women.
1786.—Tenon at Paris,	500 "	509 "
1786 to 1794.—At Bedlam,	4992 "	4882 "
1807.—At St. Luke's,	110 "	153 "
Bicêtre and Salpêtrière (mean year),	120 "	279 "
Vienna,	117 "	94 "
At the Retreat near York,	67 "	82 "
1807 to 1812.—Several Hospitals of France,	488 "	700 "
1802 to 1814.—My Establishment,	191 "	144 "
Total	6635	6892

Adapted from Esquirol.³⁵

life he influenced other investigators; for example, Burrows made a special visit to learn from him. Esquirol also established procedures for descriptive epidemiology that were not improved significantly during the nineteenth century. During his lifetime he witnessed major social changes dating from the storms of the French Revolution to the dominance of French society by the bourgeoisie commencing in the 1820s and 1830s. His interest in the influence of changing customs and mores on the frequency of mental illness pervades his writings. "Not only do climates, seasons, age, sex, temperament, profession and mode of life, have an influence upon the frequency, character, duration, crises and treatment of insanity; but this malady is still modified by laws, civilization, morals, and the political condition of people. It is, also, produced by causes whose influence is more immediate and easily appreciated."³⁷

Other psychiatrists noted the inadequacy of the available data. For example, Wilhelm Griesinger,³⁸ who wrote the first German textbook, *Pathology and Therapy of Psychiatric Illness*, in 1845, declared: "Of scarcely any country in the world do we possess quite trustworthy statistics. . . . Our knowledge is limited to an average calculation of the *number of the insane in asylums*, so various in different countries."

Nineteenth-century investigators' interest in the prevalence of mental illness in different nations and locales was prompted by more than intellectual curiosity; rather, they hoped that such knowledge would lead to a greater understanding of the causes of mental disorder. Consistently, they observed that mental illness was not randomly distributed in populations, and they were impressed by the apparent influence of social and cultural forces on its frequency and distribution. Moreover, sociocultural approaches were the only available avenues for research; other scientific methods, even Mendelian genetics, had not been developed.

Investigators such as Griesinger believed that mental illness was the result of both general predisposing and immediate causes. Griesinger's views were remarkably similar to social psychiatry's present concerns. He maintained that the study of the causes of mental illness includes both "*those more distant relations which influence whole communities*, and can only be shown by statistics . . . [and] the *individual predisposition congenital and acquired*, such as hereditary disposition, education, constitution, peculiarities of character, bad habits, etc."³⁹ From the available data, he concluded that insanity was more common in cities than in rural areas, that there was no significant difference in frequency between the sexes and that, although the influence of "social position" was difficult to determine, it seemed that both the rich and the poor "are equally subject to insanity."⁴⁰

Griesinger emphasized that the intriguing question—Does civilization produce mental illness?—was too complex to be answered. His comments presage our current opinion that we need to limit our dependent variables

in psychiatric epidemiology. He said: "The question of the influence of modern civilisation ought . . . to resolve itself into a series of isolated problems, such as the influence of the increasing growth of the population in large towns, the influence of the manufacturing industries peculiar to many country places. . . ." ⁴¹

In the United States, the first major attempt to determine the prevalence of mental illness was the 1812 key-informant survey in Connecticut that found that there were 1,000 mentally ill persons in that state, a ratio of 1 to 262 inhabitants. This ratio excited Amariah Brigham, founder and editor of the *American Journal of Insanity*, who noted that it was much higher than the ratio reported in various European nations. Brigham maintained that this high ratio in America was produced mainly by "moral causes." He stated: "Thus we find that insanity prevails most in those countries where people enjoy civil and religious freedom, where every person has liberty to engage in the strife for the highest honors and stations in society, and where the road to wealth and distinction of every kind, is equally open to all. There is but little insanity in those countries where the government is despotic." ⁴²

Questions about the influence of the nature and structure of a society on its members' mental health were dominant concerns for the psychiatrists and other investigators during that particular time. The power of government, political liberty, and the "rights of man" were vital issues that pervaded the climate of opinion throughout Western society. The era was characterized by political struggles and revolutionary movements that succeeded in limiting the power of rulers in the Western world; constitutional monarchies and more democratic governments emerged, particularly after the revolutions of 1848.

Perhaps the most comprehensive epidemiologic investigation during the nineteenth century was Edward Jarvis' ⁴³*Report on Insanity and Idiocy in Massachusetts* in 1855. The Massachusetts legislature established a Commission in 1854 charged to determine the number of the insane and the idiots, evaluate their conditions and the hospitals, and make recommendations for improvements.

Jarvis noted that the census takers in 1850 had attempted to count the mentally ill and mentally retarded by questioning directly a member of every household in the state. But response bias, such as "to confess these painful and disagreeable facts and circumstances in their domestic relations, to a stranger" and fear about public disclosure, were responsible for underreporting. The census reported only 1,680 insane persons and 791 idiots—a total of 2,471 persons. Therefore, the Commission sent letters and a list of questions to the 1,556 physicians in the state and to an additional 146 clergy, overseers of the poor, hospital superintendents, etc.—a total of 1,702 inquiries. The list of questions (schedule) sent to each key informant asked for 15 discrete items of information. Provisions were made for

Table 5. Number of Lunatics and Idiots in
Massachusetts in 1854

<i>Of the Lunatics,</i>	
1,522	were paupers—693 State, and 829 Town, paupers.
1,110	were supported by their own property or by their friends.
—	2,632
2,007	were natives.
625	were foreigners.
—	2,632
435	were curable.
2,018	were incurable.
179	not stated.
—	2,632
1,284	were at their homes or in town or city poorhouses.
1,141	were in Hospitals.
207	were in receptacles for the insane, in Houses of Correction, Jails, and State Almshouses.
—	2,632
<i>Of the Idiots,</i>	
670	are supported by friends.
417	are supported by public treasury.
—	1,087
1,043	are natives.
44	are foreigners.
—	1,087

Adapted from Jarvis.”

confidentiality, and follow-up inquiries were sent to the few who did not respond quickly.

The Commission found that there were 2,632 lunatics and 1,087 idiots, a total of 3,719 who needed care or custody, or 0.33% of the 1,124,676 persons in Massachusetts. As shown in Table 5,⁴⁴ Jarvis and his co-workers were particularly interested in the number of lunatics and idiots who were paupers and who were foreigners, the number deemed curable, and the number in various institutions. Jarvis found that there were 64 times as many cases of insanity among paupers as among the independent class. He concluded that pauperism was extensively and intimately associated with lunacy:

In this connection it is worth while to look somewhat at the nature of poverty, its origin, and its relation to man and to society. It is usually considered as a single outward circumstance—the absence of worldly goods; but this want is a mere incident in this condition—only one of its manifestations. Poverty is an inward principle, enrooted deeply within the man, and running through all his elements; it reaches his body, his health, his intellect, and his moral powers, as well as his estate. In one or other of these elements it may predominate, and in that alone he may seem to be poor; but it usually involves more than one of the elements, often the whole. Hence we find that, among those whom the world calls poor, there is less vital force, a lower tone of life, more ill health, more

weakness, more early death, a diminished longevity. There are also less self-respect, ambition and hope, more idocy [*sic*] and insanity, and more crime, than among the independent.⁴⁵

Insanity was more frequent among the immigrants to the state; the ratio was 1:445 for the native-born, compared with 1:368 for the immigrants. Jarvis' analyses showed, however, that many of the "foreign lunatics" were paupers.

Jarvis' data on prognosis are particularly interesting. He stated that 75-90% of those who received proper treatment within a year after the first manifestation of mental illness could be cured, but that when treatment was delayed and the illness had been present two to three years the cure rate was 50% less. Jarvis cited the records of the McLean Asylum since 1840, which showed that the average time of recovery for those whose mental illnesses were of less than one year's duration was five months and 19 days. In view of the "very great probability of recovery in the early stages of insanity,"⁴⁶ Jarvis expressed concern about the 840 mentally ill persons in the state who had never received treatment. He pointed out that not providing adequate care for the mentally ill would eventually place a heavy economic burden on the state. His recommendations emphasized the need for improving conditions in many of the crowded institutions and the necessity to build more state hospitals, each limited to 250 inmates.

Isaac Ray's⁴⁷ 1849 article, "The Statistics of Insane Hospitals," points out that the reports of discharges from mental hospitals and cure rates were unreliable. He mentions that statistics "has become a favorite instrument for developing truth. . . . But statistics implies something more than a process in arithmetic." Particularly, he was concerned that epidemiologists were disregarding the high mortality rate in mental hospitals and also had no scientific criteria for "recovery." Finally, "It is very obvious too that these tables often reflect the peculiar views of their respective framers."

One of the last major epidemiologic attempts to explore relationships between social processes and mental illness in the nineteenth century was carried out by Daniel H. Tuke.⁴⁸ In 1857, to study the question: "Does civilization favor the generation of mental illness?" he compared the mental illness rates in various agricultural and manufacturing counties in England. Tuke found that the "proportion of pauper lunatics to the pauper population is greatest in the manufacturing counties, the excess being 8.03 per thousand." He mentioned that other European psychiatrists also reported a larger number of mentally ill in the cities than in the agrarian districts; in France, for example, Guislain stated that two-thirds of the residents of asylums were made up of the inhabitants of towns, while only about one-fourth came from the countryside.

Tuke attributed the higher rate of mental illness in the manufacturing and the urban districts to increased stimulation of the mind and to

intemperance. His thoughts about the accelerated tempo of city life and its many stresses echo the romantic refrains of the early nineteenth century which idealized the simple pastoral life, and deplored that of the cities. In "The Prelude," Wordsworth⁴⁹ described urban life with the words: "Among the close and overcrowded haunts of cities where the human heart is sick." Tuke's early writings on this subject were contemporaneous with Marx's analysis of the horrible conditions of the poor in London, as presented in *Das Kapital*, and with Dickens' grim descriptions of the crowded slums of the industrialized British cities.

Continued concern about a possible increase in the number of the mentally ill prompted Tuke to compare the records of admissions to institutions for the years 1857–1877. In England these records showed that the proportion of the mentally ill in the general population had climbed from 1:577 in 1857 to 1:370 in 1877. He commented that life in England was full of "psychological germs calculated to infect the nervous system with disease, whether arising from the commercial, political, or the religious world."⁵⁰

Also, Tuke found marked social class differences—an insanity:general population ratio of 1:353 in the lower class in contrast to 1:484 in the upper class. He believed that insanity was increasing in the lower social class because of the lack of rational employment "so that debasing habits and indulgences abound." And he emphasized that, as a general rule, poverty was associated with insanity because the malnutrition and manifold miseries "attendant upon want favour the development of mental disease."⁵¹ These data and evidence gleaned from historical sources and reports from missionaries and explorers were published in his major study, *Insanity in Ancient and Modern Life*, 1878 (see Chapter 16).

Thus, early psychiatric epidemiology developed as descriptive epidemiology. With few exceptions, early workers had access to only crude and often inaccurate data. Statistical methods were not developed until almost the middle of the nineteenth century with the work of the Belgian statistician Quetelet, Pierre Louis' "Numerical Method," and William Farr's "Vital Statistics." More sophisticated analytic techniques were not used until the next century. During the latter part of the nineteenth century, epidemiologists were involved almost exclusively with the exciting discoveries of the microorganisms responsible for many infectious diseases and with the achievements that led to disease control. Also, those interested in the epidemiology of the mental disorders were handicapped by psychiatry's slow development as a medical discipline, particularly the absence of a taxonomic foundation which left them with little to study other than rates of "lunacy or idiocy." Nevertheless, early studies in psychiatric epidemiology did yield some facts that still are meaningful:

1. Death certificates do not provide adequate or accurate information about mental illness (Graunt).

2. Increased admissions to mental hospitals at times can be related to economic distress (Burrows).
3. Attitudes toward the mentally ill and mental illness influence, if not handicap, scientific investigations (Andrew Halliday).
4. Many of the untreated mentally ill are at large in the community (Andrew Halliday, Jarvis).
5. Improvements in facilities and services are associated with their increased use (Esquirol).
6. Records from mental hospitals are of variable quality, often inaccurate, and even misleading (Griesinger).
7. Accurate estimates of the prevalence of mental illness cannot be obtained from records of admissions to mental hospitals; observed increases in the number of mentally ill may be more apparent than real (Esquirol).
8. Repeatedly, relationships between poverty and mental illness have been found (Jarvis, Tuke).
9. Early treatment is associated with a favorable outcome (Jarvis).
10. Immigrants have higher mental illness rates than the native-born (Jarvis).
11. Not providing treatment eventually increases costs (Jarvis).
12. Sociocultural processes involving the sentiments of an age, laws, changing customs and mores, and the conditions of life influence the frequency, character, and treatment of mental illness (Esquirol, Tuke).

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8

The Problem: Concepts and Definitions of Mental Illness

Who can tell when health ends and disease begins? When disease is found to have shed its blighting influence over the system, is it possible, after establishing this fact, to decide what amount or kind is necessary to occasion aberration of mind, and when this amount and quality is developed? When developed, does it at once manifest its baleful influence upon the brain, by producing insanity; or does it not rather brood over the delicate organ of the mind, and gradually fulfill its dread commission? When again the mind begins to totter, and reason to sit insecurely upon her throne, do the friends and acquaintances of the unhappy sufferer recognize these first monitions? Or do they not rather behold,—if indeed they observe any thing,—a simple change of habit, slightly perverted moral feelings, or trifling eccentricities of character?

—ESQUIROL¹

Early studies, as we have seen, made some basic contributions to psychiatric epidemiology. But around the turn of the nineteenth century further advances were halted by methodologic limitations. These were: (1) inadequate and inaccurate data that seldom were collected uniformly or according to a research design; (2) the absence of a satisfactory nosology; and (3) the lack of prevalence estimates controlled for life expectancy. Of these, the problems with the conceptualization, definition, and classification of mental illness were fundamental. Moreover, they endure hampering investigators' case-finding efforts and clouding research in this field with imprecision.

The early psychiatrists in the first decades of the nineteenth century did not inherit satisfactory definitions and a system of classification of mental illnesses from the great physicians of the past. Since antiquity, physicians had used the simple Greek classification—mania, melancholia, or phrenitis—or, more commonly, developed their individual and often idiosyncratic nomenclature. In the Introduction to his 1806 translation of

Pinel's *A Treatise on Insanity*, Davis² wrote "in regard to nosological distribution and nice delineation of specific and individual cases of insanity, the best writers of antiquity have by no means distinguished themselves."

The penchant to develop new and different classifications continued throughout the nineteenth century. Epidemiologists were compelled to work with "the numbers of lunatics," since there was no agreed upon nomenclature or system of classification. The first systematic classification, based on symptomatology and, especially, prognosis, was developed by Emile Kraepelin in the successive editions (1883–1923) of his famous textbook of psychiatry. But even in 1960, Stengel,³ who had been commissioned by the World Health Organization (WHO) to study the problem of classification, found 38 systems in use. The problem—the definition of mental illness—is still unresolved even though systems of classification, such as the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM) and the *International Classifications of Disease* (ICD), are providing greater uniformity and consensus than in the past.

In this chapter, first, we will present two basic problems hindering the development of satisfactory definitions of mental illness, and then discuss the three major models of mental illness that have been used. The limitations of the medical, social-statistical, and normative models will lead us to look at concepts of impairment that have some research utility and also at current trends in psychiatry that are leading to the elaboration of a scientific basis for diagnosis and classification.

The problems of definition and classification of the mental disorders are complicated initially by the absence of a meaningful definition of mental health and by the myth of mental illness controversy. A definition of mental illness should possess both conceptual clarity and sufficient precision so that illness can be measured scientifically and thus have utility for research and patient care.

Definitions of Health

The ancient Greeks, in accord with their aesthetic sensibilities and views of man's place in the cosmos, thought of health as an ideal—the harmoniously balanced mixture of the four humors. Disease was the manifestation of disproportions among the humors. Although their doctrine of the four humors appears archaic, the concept of health as an ideal state still influences our thinking.

Some examples of current definitions of health are: (1) the World Health Organization's (WHO) statement that "Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease and infirmity"⁴; (2) Laughlin's Law of Relativity in Emotional

Health, “the ‘normal’ imperceptibly merges into the borderline, and the borderline into the neurotic. . . . Everyone has problems . . . at least at times. The difference between people in this area more often is one of quantity than of quality”⁵; and (3) the age-old view of health as the absence of disease.

The WHO definition is considered to have little or no utility, since it lacks both specificity and precision. Laughlin’s definition has face validity, but merges with clinico-statistical concepts of both health and mental illness that, as we shall see, have certain theoretical limitations. The definition of health as the converse of illness is imprecise and dependent upon definitions of and judgments about disease and illness. Moreover, as Susser⁶ explains, the terms “disease, illness, and sickness are not synonymous.” Disease is a process that produces physiological and psychological disorder. Illness is a state of distress expressed as symptoms. And sickness is “thought of as a state of social dysfunction.” The consequences of disease, illness, and sickness are impairment, disability, and handicap, respectively. Thus, a person may have a disease, yet not be ill, or a person may be ill although no disease process can be identified.

The lack of a satisfactory and scientifically useful definition of health leaves us with unknowns on one side of the equation as we examine concepts and definitions of mental illness. But, before we look at various mental illness models, we shall consider the major question—Does mental illness exist?

The Myth of Mental Illness

Although Thomas Szasz⁷ has popularized “The Myth of Mental Illness,” Andrew Halliday,⁸ as early as 1828 remarked that “philosophers, by deviating from the known path of common sense and accurate observation, have occasionally been so bewildered in the mazes of metaphysics, as even to doubt of the existence of the matter [mental illness] altogether.” Halliday also accused physicians of wandering “in the shewy but deceitful regions of hypothesis” instead of traveling the “plain road of demonstration and experience.” As a consequence, medical science had seemingly excluded the mental disorders from its legitimate fields of inquiry and activity. But, as he explains, historical and theological considerations were fundamentally responsible for this development. During the late Middle Ages, when the hegemony of the Church in Western society was threatened by heresy and nationalism, mental illness officially became a theological rather than a medical concern. The handling of the mentally ill thus became a social control concern and the problem of mental illness, a metaphysical one.

The concept of “the mind diseased” jeopardized the doctrine of the immortality of the soul. Halliday explains, if physicians “once admitted that the mind could become diseased, it would follow, as a matter of course, that the mind might die. They, therefore, wisely refrained from

meeting a question which involved such dangerous consequences, while they were unable either to refute or explain it."⁹ Furthermore, pejorative, dehumanizing attitudes toward the mentally ill dictated that they should be placed in custody or otherwise removed from society; physicians who attempted to treat them would be considered "knaves."

In its new garb and in the fashion of our times, doubt about the existence of mental illness as an entity is based not on theological doctrines but on the knowledge that sociocultural processes influence the appearance and manifestations of the mental disorders. Szasz states that living "is an arduous process" and that mental illness is considered to be the cause of much "human disharmony." Thus, the term "mental illness" is an illogical one because it denotes simultaneously a cause and a condition. He believes that bodily illness implies "*deviation from some clearly defined norm*," but that mental illnesses are considered to be deviations from a norm established from "*psycho-social, ethical, and legal concepts*." He distinguishes between diseases of the brain and mental illness, but insists that, although mental illness is considered to be a deviation from psychosocial and ethical norms, treatment involves medical measures. Thus, he declares that the definition of mental illness and the mode of treatment are "at serious odds with one another."

Szasz asks: "Who defines the norms and who defines illness?" He thinks that there are two basic answers: (1) the patient may define himself as deviating from the norm, or (2) relatives or others may do so. Szasz summarizes: "It is customary to define psychiatry as a medical specialty concerned with study, diagnosis, and treatment of mental illness. . . . Mental illness is a myth. Psychiatrists are not concerned with mental illness in their treatment. In actual practice, they deal with personal, social, and ethical problems of living."¹⁰ Szasz's propositions have stimulated vigorous controversy and heightened already present concerns about the cultural relativity of mental illness and the social factors involved in the labeling process.

Others have entered the fray. In 1959 Clausen¹¹ insisted that "cultural definitions of the special problems involved [in mental illness] vary tremendously and bear little resemblance to psychiatric definitions. . . . Psychiatric knowledge and the mental health movement are social products, certainly subject to study."

Talcott Parsons views concerns about definitions of health and illness from a historical perspective. The nationwide development of our industrialized society in the latter part of the nineteenth century produced institutional and role changes, and concomitantly prepared our society for greater social responsibilities, e.g., improved health care. At a lesser level of societal responsibility there would be little concern about the definition of illness. For example, in the earlier preindustrial stage, Parsons thinks that there were fewer stresses in everyday life, and, also, that the mentally troubled might have been less visible. He tends to indict both the rapid rate

of social change and societal needs for social control mechanisms as important factors producing mental illness as well as concern about defining it. (His role model is discussed in Chapter 18.)

Parsons emphasizes the influence of social processes on the definition of mental illness. He thinks that in the United States “we are more likely to interpret a difficulty in an individual’s fulfilling social role expectations as a disturbance in capacity, i.e., as illness, than is true in other types of societies with other types of value systems.”¹²

The English psychiatrist R. D. Laing¹³ presents a radical but related view of this subject. He proposes that the disturbed persons’s behavior may be appropriate because he is living in an irrational world and one in which social, political, economic, and ethical processes produce behavioral changes. Laing emphasizes that many psychiatrists function as social control agents and thus attempt to adjust “disturbed” persons to patterns of living deemed necessary by society whether or not those patterns are salutary for the individual. For Laing, therefore, irrationality may be the best if not the only means for maintaining one’s individuality in a world that is mad. In short, for individuals, concepts and definitions of mental illness can be seen as irrelevant because society is not sane.

These points of view are important social psychiatric concerns. Unfortunately, in a simplistic form, the controversy about the “myth of mental illness” has expanded to obscure its more profound elements. The controversy has entered into rivalries among professionals from various mental health disciplines striving to achieve status. And in so doing, the “myth of mental illness” thesis has, at least for a while, increased divisiveness among different professional groups. The extreme partisanship and the resulting loss of energies have had a deleterious effect on the community mental health movement. But it is hoped that the controversy will eventually focus on certain essential points: the cultural relativity of definitions of mental illness, social factors influencing the definition of mental illness and responsible for labeling processes, and, very importantly, social control questions that are now largely ignored.

*Definitions of Mental Illness**

The Medical

The medical model of illness has evolved over the last 2500 years, although undoubtedly it existed in some form much earlier. Its essence is

* In 1928 J. J. B. Morgan¹⁴ categorized definitions of abnormality as: (1) the normative—based on the psychiatric view of an integrated personality from which wide deviations would be termed “abnormal,” (2) the pathological—organic brain diseases, and (3) the statistical—deviations from the norm. Wolff,¹⁵ in 1950, grouped the definitions according to deviation from: (1) the statistical average, (2) the normative or ideal, and (3) the clinical standard (ability to function adequately). For any of these or other categorizations, some mental illnesses will fit a specified subcategory; others will overlap two or more subcategories; a few others will fit any poorly.

that disease is a noxious process producing illness—a disturbing condition of the organism that can be removed at times or palliated by the care of physicians whose special rights entail serious obligations. Thus, the medical model embodies: (1) prevailing concepts of disease, (2) societal attitudes about the sickness role, and (3) the physician's rights and responsibilities that are determined by a culture's legal, ethical, and other standards. Our current concepts of health and disease are derived from Darwinian principles of adaptation and maladaptation; in other historical periods they reflected dominant modes of thought such as an excess or paucity of one of the four humors, punishment, possession, etc. Physicians' special rights and obligations have been codified through the centuries, e.g., by ancient Babylonian laws, the Hippocratic Oath, and licensure.

In his essay "Health as a Social Concept," Aubrey Lewis¹⁶ specifies that the medical model consists of three traditional types of data: (1) the subjective—the patient's complaints, (2) the objective—some disorder of behavior or function that is apparent to an observer, and (3) the typological—the conformity of the symptoms and signs to a recognizable clinical pattern. Lewis points out that social disapproval cannot be considered as a criterion of mental disorders, because disapproval is a function of the values of both the group and those who make the judgments. Also, he dismisses nonconformity as a criterion of illness, since it is usually expressed in terms of social role and is influenced by conflict, culture lag, and social change.

Implicitly, Lewis analogizes from a disease of an organ, such as the heart, to a disorder of the psyche and disturbed behavior. He emphasizes, however, that an evaluation of the patient's total performance is a requisite for the diagnosis of mental illness. He concludes: "the criteria of health are not primarily social: it is misconceived to equate ill-health with social deviation or maladjustment."¹⁷

Thus, Lewis discounts social and cultural criteria for defining mental illness largely because they change, are often value judgments, and are relativistic. To account for cultural influences on symptoms, he states that behavior must be described in terms that "specify the social situation in time and place." Lewis views mental illness as an abnormal state of the organism, whereas mental health, which is even more difficult to define, is the absence of morbid characteristics, subjective or objective. However, at our present state of knowledge, Lewis asserts that: "The terms health and illness are useful fictions which refer to uplands and lowlands in a continuously graded and terraced country."¹⁸

Whybrow¹⁹ views mental health and illness as relative conditions. He defines health as the "ability in the human animal to adapt, organize, and respond to a constantly changing social, psychological and biological, environment. . . . Disease, therefore, on a continuum with health, may be seen to correspond with a compromising or a failure of these functions." Thus, mental illness is related to, but is not different from, mental health.

This point of view is in accord with our clinical concepts; few, if any, patients are completely ill and few, if any, "normal" persons, as Laughlin indicates, are completely free from the symptoms of emotional distress. Whybrow implies that mental health and illness are processual in character, a perspective that is developed by Offer and Sabshin²⁰ in their discussion of normality as a process.

The medical model is more comprehensive than Lewis indicated. It includes a consideration of both the physician's and the patient's roles, and, also, as Whybrow states: "the place in psychiatry of professional responsibility and the concept of care." The physician is in an authoritarian role; he has been given the right to explore the recesses of the patient's psyche as well as the bodily orifices. This right carries with it the obligation to benefit the patient (within the limits of medical knowledge). The patient is defined as a sick person under the care of a physician and, thus, in a role characterized by dependency and lack of responsibility for fulfilling his accustomed role functions.

But the psychiatrist's role often is not similar to the physician's role as set forth in the traditional medical model. The psychiatrist has medical responsibility for the patient, but generally an authoritarian stance is antitherapeutic. The mentally ill patient's dependency and inability to fulfill expected and customary role performances can be integral aspects of the illness toward which therapy is directed.

One of the major theoretical limitations of the medical model is that it is derived from the Darwinian concept of adaptation: health is viewed as successful biological and social adaptation, and illness as failure in these respects. Such a viewpoint can be considered tautological because it implies that health and successful adaptation are synonymous. Lewis observes insightfully: "mental health cannot be equated with good social adaptation, as many have proposed, without risk of tautology: the valued and desired state which adaptation is to attain or maintain may itself turn out to be health."²¹ Or, as critics of Darwinian theory asserted: the fit survive and survivors fit.¹⁹ Moreover, Clyde Kluckhohn²² cautions us about limiting our thoughts too closely to concepts of adaptation: "We require a way of thinking that takes account of the pull of expectancies as well as the push of tension, that recognizes that growth and creativity come as much or more from instability as from stability, and that emphasizes culturally created values as well as the immediately observable external environment."

Another logical inconsistency with the medical model of health and illness is that it presupposes norms, at least implicitly—each patient supplies his individual norms which are then evaluated by the physician in terms of the more general norms established by the medical profession. Although illness is set forth as an entity, such problems with norms and the variability of the social setting imply relativity.

As a basis for defining mental illness, the medical model has had limited utility because mental illness is considered to be the expression of a disease process caused by specific agents. However, in precise scientific terms, the etiology of most mental illnesses is unknown. Thus, the medical model can be used for diagnosing and classifying only some of the more clear-cut psychiatric syndromes. Furthermore, impairments, which may be the main manifestations of mental illness and are also measured as indices of mental illness, are seen logically as the results of the disease processes about which little is known.

A number of practical considerations also complicate the use of the medical model in psychiatry. It is difficult to characterize many conflicts, interpersonal difficulties, and problems in living according to the medical model. Furthermore, until recently, most physicians were not trained to work with their patients' interpersonal dilemmas or emotional distress. And their time and energies could be consumed by attention to patients with the more tangible and understandable physical illnesses.

Disillusionment with the medical model increased rapidly during the 1950s as a result of: difficulties with the applicability of the model, the failure of modern science to discover the "causes" of mental illness, and the heightened societal concern about the "problem of mental illness." Consequently, as we saw in the discussion of the "myth of mental illness," there has been controversy about mental illness as a medical or as a social problem, and also during this time, the social model has been further conceptualized.

The controversy about "medical versus social model" of mental illness developed in a distinctive sociocultural context during the 1950s. The emerging social consciousness in the nation included heightened concern about mental health. The Community Mental Health Movement was catapulted by the passage of federal legislation in 1963 and 1965 at a time when there were not enough mental health professionals, especially psychiatrists, to staff the centers and provide demanded services. A social model of mental illness began to replace the medical model. The social model provided a rationale for training allied mental health professionals to work with the large numbers of persons clamoring for services. Also, the adoption of a social model allowed mental health professionals, such as psychologists and social workers, to work more independently than previously, often outside medical settings where they could attain higher professional status.

The Social-Statistical

The social model of mental illness is built upon the following premises: (1) primarily, mental disorders are disturbances in functioning, (2) such disturbances appear mainly as an inability to fulfill role expectations or to

carry out customary role performances, (3) such inabilities are manifested by behaviors variously labeled by self and others as abnormal, and (4) impairment, rather than illness, is the focus of concern.

Nagi²³ states that it is taken for granted that disease involving “active pathology” obviously produces impairments, but the distinction between disease and impairment becomes much less meaningful when impairment does not involve recognizable brain disease. He affirms that “every disease involves an impairment, but not every impairment involves a disease.” An implicit assumption is that some impairments have their roots in sociocultural, not organic causes.

From this perspective, impairment is often defined in terms of deviance, inability to function, deficiency in role performance, or the incapacity to meet expectations of social roles. Consequently, impairment can be socially and culturally defined.

The caregivers, therefore, can come from a number of disciplines with somewhat different educational backgrounds. They counsel with the “client” who is not considered, by definition, to be in as subordinate or dependent a role as a “patient.” Also, indigenous workers and mental health technicians work with the mental health professionals to supply material support as needed. The caregivers’ level of responsibility for clients and their accountability are somewhat more limited than that of physicians.

The tenets of the social model are derived from learning theory, behaviorism, social psychology, and sociologic concepts of deviance. Thus, a disturbance in adult life could be the result of faulty learning about expected role performances and healthy behaviors during the developmental years; or, deprivation or adverse interpersonal and group relationships could have limited the ability to function. And, theoretically, mental disorders and disturbances in function can be prevented by raising the quality of life in the community. (See the miasma theory of disease and the Community Mental Health Movement in Chapter 6.)

But the fundamental difficulty in conceptualizing and defining mental illness according to a social mode pivots on the basic question: Is it a psychopathological state, an entity, or is it a statistical variation? The current importance of this question reflects major shifts in attitudes toward mental illness and changes in the health delivery system that are the result of extensive, complicated social processes. To grasp the significance of this basic question about the nature of mental illness, we can look at the development of statistical and social models of illness.

In his classic work *Suicide*, Emile Durkheim²⁴ showed that sociocultural factors, as well as intrapsychic processes, were determinants of behavior, and he laid the groundwork for conceptualizing impairment from a larger social and cultural frame of reference rather than from solely the medical view of individual pathology. He recognized that health had been

defined traditionally as the adaptation of an organism to its environment and morbidity as a disturbance of this adaptation, but he sought to establish more objective criteria.

In *The Rules of Sociological Method*, Durkheim formulated principles for distinguishing between normal and pathological states. He maintained: "The state of health, as defined by science, cannot fit exactly any individual subject, since it can be established only with relation to average circumstances, from which everyone deviates more or less."²⁵ And he presented an early criticism of the concept of health as perfect adaptation by pointing out that it has not been proved "that every state of the organism corresponds to some external state of the environment."²⁶ He questioned whether health could be related to the increased probability of survival, and logically asked: since death rates are higher in babies and in the elderly, should we regard infancy and old age as morbid periods in the life cycle?

Durkheim tackled the problem of the definition of health and illness. He began, for example, by pointing out that pain is usually considered to be a symptom of illness, but the relationship between pain and illness is not exact. Minor illnesses may be very painful, whereas some serious illnesses may not be painful; a few individuals are insensible to pain, which, in itself, is pathological; pain may accompany normal physiological states such as hunger or fatigue; and, masochists may enjoy pain. Furthermore, carefully controlled chronic illness can be compatible with a long life, and disease does not always leave us "in a state of irremediable maladaptation; it only constrains us to adapt ourselves differently."²⁷ Durkheim emphasized that designations such as healthy and morbid are, in the last analysis, judgmentally derived.

Durkheim believed that such criticisms of common definitions of health and illness were so valid that it was necessary to establish empirical criteria for distinguishing between the normal and the abnormal. He asserted: "We shall call 'normal' these social conditions that are the most generally distributed, and the others 'morbid' or 'pathological.' If we designate as 'average type' that hypothetical being that is constructed by assembling in the same individual the most frequent forms, one may say that the normal type merges with the average type and that every deviation from this standard of health is a morbid phenomenon. . . . The healthy constitutes the norm par excellence and can consequently be in no way abnormal."²⁸ Thus, Durkheim developed the foundation for social models of health and illness: they are empirically derived, statistically determined, and always relative to the sociocultural milieu.

Durkheim's views are basic to Parson's thesis that mental illness must be defined in reference to an individual's social role performance. Parsons maintains that role structure is the point at which "the principal direct interpenetration of social systems and personalities come to focus; it is as

an incapacity to meet the expectations of social roles, that mental illness becomes a problem in social relationships and that criteria of its presence or absence should be formulated'' (Italics ours).²⁹ According to Parsons, health and illness are evaluated states that are institutionally recognized by various societies' cultural and social structures. Thus, sociologic concepts of disturbed behavior, in the absence of organic brain disease, are based primarily on distance from the norm and the inability to perform in institutionalized roles. This statistical and social model freed researchers from certain constraints; health and illness were no longer qualitatively different conditions, but, instead, could be viewed as points on a continuum that were meaningful only in their social context. The most generally distributed traits and conditions (a statistical norm) constitute health, whereas deviations in one direction constitute illness, and in the other, super-normal.

The applicability of the social-statistical model is limited. It does not account for the serious mental illnesses and it is reductionist because it disregards the influence of biological factors in the etiology of mental illness. Also, the social model is extremely relativistic, dependent on shifting norms and values. Furthermore, inasmuch as social processes define illness and are assumed to produce it, the model is tautological and imprecise. Thus, the social-statistical model is restricted by its excessive relativity, its tendency to deny the existence of illness as an entity, an inadequate regard for etiology, and a mechanistic emphasis on norms or frequencies.

Concepts of health and illness, based on a statistical model, are derived from theories of probability, variation, and error, developed by the great German scientist Carl Friedrich Gauss (1777–1855) to explain the random movement of molecules.³⁰ In 1835 the Belgian astronomer and mathematician Quetelet charted soldiers' chest measurements and heights and showed that they fitted probability curves.³¹ Almost symmetrical curves depict measurements of human characteristics—height, appetite, or personality traits (in the physical sciences the upper end of the curve tends toward infinity but the limits of the curve describing human characteristics can be established).

Statistical concepts reflect the doctrine of relativity that has pervaded twentieth-century thought and are fundamental to our scientific conceptions of reality. The majority of the population constitutes the norm or average. These persons, and possibly an unknown larger percentage, possess the personality characteristics and manifest the behaviors most commonly distributed on the bell-shaped curve; thus they are arbitrarily considered to be healthy.

The Super-normal: In the latter part of the nineteenth century, Sir Francis Galton³² used these "human statistics" to study variations of intelligence. He found that only 250 out of one million men are "eminent"

and that they are more likely than ordinary men to have "eminent relatives." Galton's work laid the foundation for Binet and Simon's development of the first intelligence (IQ) test. From those (mechanistic) roots, and possibly Nietzsche's discarded thesis of the "superman," psychologists and other social scientists became involved with the concept of the "super-healthy" that is implicit in a statistical model of mental health and illness: If the average is health and the below average is abnormality, how should we label and describe those above the average? Goldstein³³ designates such persons "self-actualizers"; Maslow³⁴ terms them "super-normal"; and Rogers³⁵ describes them as "fully functioning persons." Maslow and Mittelmann³⁶ list the qualities of the super-normal:

1. adequate feeling of security
2. adequate spontaneity and emotionality
3. efficient contact with reality
4. adequate bodily desires and ability to gratify them
5. adequate self-knowledge
6. integration and consistency of personality
7. adequate life goals
8. ability to learn from experience
9. ability to satisfy requirements of the group
10. adequate emancipation from group or culture

Offer and Sabshin³⁷ note that these attributes are "difficult to assess" and are ideals. To us, they appear to be value judgments and would have to be gauged as such. Reaching for the ideal, however, is a human quality that should not be discounted; moreover, anthropologists, such as Kardiner and DuBois, indicate that distance from the ideal character type is the basis for defining mental illness in various cultures.

In her *Current Concepts of Positive Mental Health*, Jahoda³⁸ lists six approaches to this concept of greater than average mental health:

1. "Attitudes of an individual toward his own self" (high self-esteem)
2. The individual's "style and degree of growth, development, or self-actualization"
3. Degree of integration
4. Degree of autonomy; "degree of independence from social influences"
5. "The adequacy of an individual's perception of reality"
6. "Environmental mastery "

No one can deny that these are desirable and laudable characteristics, but whether they contribute to needed conceptualizations and definitions of mental health and illness is questionable. Many of the writers on the subject of the "super-normal" tend to overlook the ancient Greek view that genius and madness are closely related, if not intertwined. Often, great persons such as Lincoln and Beethoven are mentioned as examples of self-actualizers. Both had manifest symptoms of mental illness at times; whether their emotional distress contributed to their achievements or possibly precluded even greater achievements is a subject for speculation.

The concept of the “super-normal” that is postulated to account for the total distribution on the bell-shaped curve can only be debated; we have few criteria other than our individual value judgments for measuring or even describing them. Finally, the term “*positive mental health*” (Italics ours) is meaningless unless we substitute the term *negative mental health* for illness. At our present limited level of knowledge about mental health and illness, it does not appear to be either meaningful or helpful to begin substituting one relatively undefined term for another.

From the medical and statistical points of view, the basic theoretical difference between definitions of health and illness centers on the question: Are they qualitatively or quantitatively different? Is mental illness a psychopathological entity, or is it merely the possession of *more* symptoms and aberrant behaviors than are considered to be normal, as statistically determined in a particular social context?

Sjöbring’s Pathologic and Normal Variations

In the early decades of this century, the Swedish psychiatrist Henrik Sjöbring³⁹ developed a mental health and illness model that included both quantitative and qualitative concepts. Based on neurophysiologic concepts of central nervous system energy and studies of common personality types (e.g., hysteric, cyclothymic), he postulated that three independent personality dimensions—validity, solidity, and stability—in addition to capacity (intelligence) were normally distributed, like intelligence, in the general population. These four personality dimensions (in a sense, characteristics or traits) are the *normal variants* (Sjöbring’s terminology). They are:

1. Capacity—intelligence or intellectual ability.
2. Validity—the amount of energy functioning in the central nervous system (cautiousness and insecurity versus forcefulness and confidence).
3. Solidity—the inertia functioning in the central nervous system (flexibility and subjectivity versus steadiness and objectivity).
4. Stability—the level of habituation of which the central nervous system is capable, e.g., greater or lesser degrees of abstraction, precision of thought, and emotional involvement (abstract, clever, cool versus concrete, heavy, warm).

Validity, solidity, and stability, as well as intelligence, were normal personality characteristics; not even the extremes of each were conceptualized as illness. To account for mental illnesses, which he thought were qualitatively different, genetically produced entities, Sjöbring postulated the existence of *pathologic variants* that were independent of the *normal variants*. For example, as shown in Fig. 4,⁴⁰ the distribution for capacity (intelligence) approximates a bell-shaped curve, but the extreme lower end (shaded block) represents the pathologic variant, mental deficiency or oligophrenia.

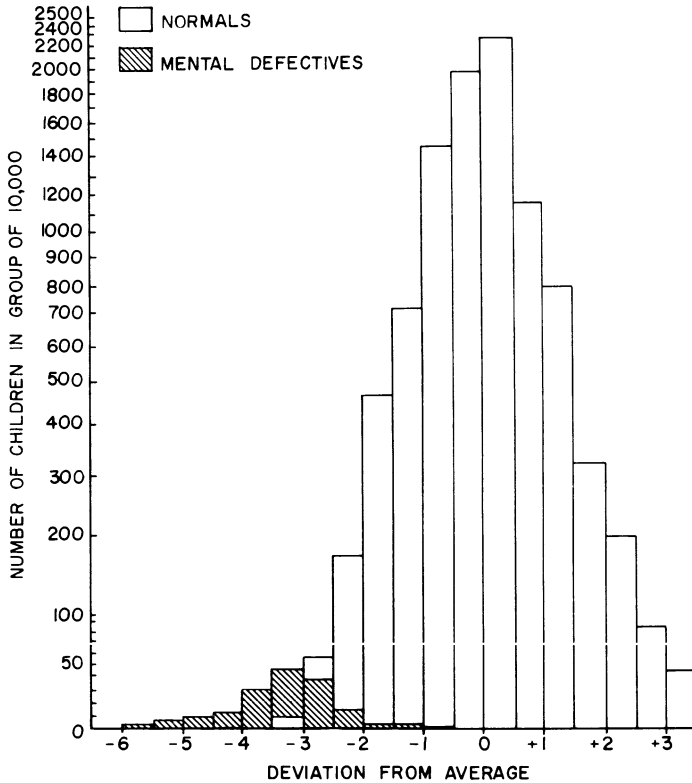


Figure 4. Distribution of school children according to general intelligence (adapted from Slater and Cowie⁴⁰).

Sjöbring's work is relatively unknown in American psychiatry, even though it was tested by Essen-Möller and Hagnell (see Chapter 12). In his 1947 study of the entire population of 2,550 adults and children in Lundby, Sweden, Sjöbring's student, Erik Essen-Möller, and his colleagues scored each subject on a 1-9-point scale (5 = average) for each of the four normal personality variations. The four were largely independent of each other and each followed the normal variation. Figure 5⁴¹ shows the frequency distribution.

The mean for capacity was 5.19 (S.D. 0.16). Those with intelligence scores of less than 70 (0.98% of the population) were oligophrenics who are omitted in the diagram; therefore, only the distribution from 0.3 to 0.8 is shown in the solid line (the dotted line represents the theoretical distribution).

The mean for validity was 5.0 (S.D. 1.02), for solidity 4.8 (S.D. 0.78), and for stability 4.89 (S.D. 1.11). The distributions of these three normal

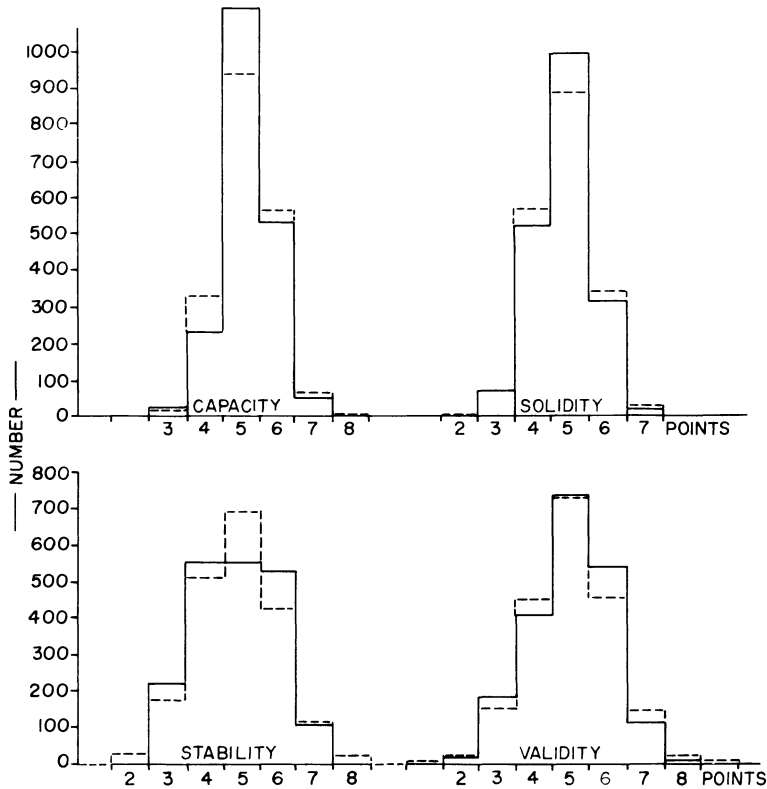


Figure 5. Distribution of Sjöbring variants (adapted from Essen-Möller⁴¹).

personality variations do not include the 12.7% of the population that Essen-Möller found had pathologic variants (mental illnesses).

In 1957 Hagnell⁴² restudied the Lundby population (see pp. 208–212). The mental illness rates for men (according to Essen-Möller's 1947 classification) were about the same as would be expected; however, a somewhat higher percentage of women than expected had mental illnesses. Generally, the 1957 restudy of the frequency and distribution of the pathologic variants (mental illnesses) confirmed the 1947 findings.

Hagnell also examined the subjects' 1947 ratings on the four normal variations to determine how they were correlated with mental illness ratings ten years later. His conclusions are:

1. For the C (intelligence) Factor—neurotics did not tend to be more intelligent than others in the population.
2. For the V (validity) Factor—there was a slight tendency for more of the Subvalid (retiring, cautious, scrupulous) to have mental illnesses than expected.

3. For the S (solidity) Factor—there was a tendency for more of the Subsolid (agile, subjective, suggestible) to have mental illness ($p < .10$) than the Mediosolid or the Supersolid.

4. For the St (stability) Factor—no significant associations were observed between the Sub-, Medio-, or Superstable groups and expected frequencies for mental illness.

This interesting and much neglected work has possibilities for yielding a greater understanding of the etiology of mental disorders, particularly when such studies include investigations of stressful and other factors. Furthermore, Sjöbring's method is an intriguing way to conceptualize personality characteristics as well as mental health and illness. Results of comparative studies, particularly in the United States, with its rapid rate of social change, would be valuable for social psychiatry since they might distinguish some of the personality and life-stress variables and thus identify loci for therapeutic interventions.

The Normative and Cultural

Some confusion exists about the use of the term "normative" in discussions of mental health and illness. It has been applied to statistical concepts (the norm is the average) and also used to denote the normal in contradistinction to the abnormal. In this section we will use "normative" to designate the normal as opposed to the abnormal. This discussion will include some views of the normative as the "ideal" that have been developed by cultural anthropologists.

Cultural anthropologists have supplied evidence that mental illness is an entity. Also, to some extent it is regarded as the "distance" from the ideal or basic character type in a given society. But generally, they emphasize qualitative rather than quantitative distinctions between mental health and illness.

Wallace⁴³ has summarized these points of view: "What is recognized as pathological in behavior is usually a matter of common consensus in a society. But the standards of consensus vary from one society to another." He maintains that "just as cultures differ in technology, kinship practices, and religious beliefs, so they differ in the behavior classified as normal and abnormal." He adds: "Anthropological definitions (of mental illness), consequently, generally center about some notion of behavioral deviance or abnormality as the universal sign of mental illness."⁴⁴ Wallace concludes that the problem of mental illness "is a universal one."⁴⁵ Since ethnographic and cross-cultural studies of various groups probably provide the strongest available scientific proof of the existence of mental illness as an entity, we shall look at some of the background for this proof that mental illness is not a myth.

Anthropologists usually describe behaviors as normal or abnormal in specific cultures according to the culture's standards including folk criteria.

Behavior is seen as adaptive; both normal and neurotic behaviors are conceptualized as accommodations to a social situation.

Kardiner,⁴⁶ for example, stresses that each culture has an "ideal character" or "basic character type"; neurosis is determined by assessing behavior in the light of this "ideal type" as defined by the culture or social group. Thus, the abnormal are those who least approximate the "basic type." DuBois,⁴⁷ using a more functional approach, suggests that each culture prescribes a range of functions for its members. Although she emphasizes the concept of a "modal personality," abnormality is measured by the inability to perform societally prescribed functions.

In "A Critique of Cultural and Statistical Concepts of Abnormality," Wegrocki⁴⁸ traces the development of anthropologists' views and furnishes us with an incisive analysis of the issues. He mentions that achieving the "realization that the categories of social structure and function are ever plastic and dynamic, that they differ with varying cultures and that one culture cannot be interpreted or evaluated in terms of the categories of another, represents as tremendous an advance in the study of social behavior as did the brilliant insight of Freud in the field of depth psychology."

Wegrocki classified Ruth Benedict's evidence for mental illness as a clinical entity under three headings.

1. Behavior considered abnormal in our culture but normal in others. Examples are a Northwest Coast Indian Chief's ceremoniously giving away his possessions after being bested in competition ("Potlatch"), the Plains Indians' religious hallucinations, or the Yogi's trance.

2. The existence of exotic syndromes or ethnic psychoses (see Chapter 16) which have been considered by some to be forms of mental illness specific to particular cultural groups. Examples are latah and amok in Southeast Asia and Arctic hysteria.

3. Behavior considered normal in our culture and abnormal in other cultures. An example is the "drive for success" in the dominant American society that would be considered as evidence of witchcraft by the Zunis.

Wegrocki also thinks that the presence of delusions is a controversial issue in the debate about the cultural relativity of syndromes. Ruth Benedict described the Northwest Coast Indians as institutionalizing paranoia but, in itself, this is not evidence of the cultural relativity of psychosis because the Indians could "unlearn" or modify such views. Wegrocki maintains that a psychotic person's delusions cannot be equated with institutionalized cultural states. He quotes Macfie Campbell: "The delusions of the ill-balanced and the beliefs of the orthodox are more closely akin than is usually recognized," "but the patient's delusion represents the individual's attempts to deal with conflict. The crucial determinant of the difference is the symptom's *'function in the total economy of the personality.'*"⁴⁹ In other societies, Wegrocki insists, a person is considered mentally ill "not because he adheres to a different standard but because he violates

the group standards *which are also his own*” (Italics ours). The presence of mental illness in diverse cultures can be identified by probing into the meaning of the behavior and by judging it in terms of the “functioning of the total personality.”⁵⁰

Wegrocki believes that mental illness can be found in all societies when abnormality is seen as “*the tendency to choose a type of reaction which represents an escape from a conflict-producing situation instead of a facing of the problem.*” He adds: “The ‘abnormal’ behavior of the Indian is analogous to the behavior of the [Western] psychotic but not homologous.”⁵¹ And he concludes that abnormality exists in all cultures when the function of the behavior is used as the criterion for making judgments. Thus, anthropologists emphasize the importance of the cultural relativity of disturbed behavior, but they affirm that mental illness can be found in all societies, and that there are some universal criteria for determining it.

In their excellent volume *Normality*, Offer and Sabshin²⁰ summarize four perspectives on normality: (1) normality as health, (2) normality as Utopia, (3) normality as average, and (4) normality as a process. Normality as health is the traditional medical viewpoint and has historical, genetic, and broad societal bases for its validity. Normality as Utopia is an ideal, represented as such in societies that predicate an “ideal character type,” and in our society as Maslow’s “supernormal” and Rogers’ “fully functioning” persons. But these concepts are either abstractions or are applicable to a very few people. Eaton and Weil⁵² found “no mental health utopia” when they studied the supposedly healthy and relatively stress-free Hutterites (see Chapter 11). Normality as average has been discussed; the statistical model is intriguing but can be misleading: Is the person with *more* delusions and hallucinations necessarily more mentally ill than a person with fewer delusions and hallucinations?

Normality as process is an interesting new viewpoint: “normal behavior is the end result of interacting systems that change over time.”⁵³ The emphasis on systems and on time as a variable is in accordance with current views of relations among the different orders in the natural world (cell, organ, person, society, etc.) and social systems. Also, as Offer and Sabshin note, this perspective encompasses a developmental component—some maladaptive behavior is a stage in development, and enhances our understanding of an individual’s transient personality disturbances that may eventuate in his becoming more resilient and achieving emotional well-being. Erik Erikson’s popular concept of epigenesis, or the unfolding of the personality as a process during the critical life stages, is a central feature of this view of normality as a process.⁵⁴

Impairment

Because of the limitations of the various concepts of mental health and illness, many psychiatric epidemiologists have used operational definitions

of morbidity and have measured impairments. For example, the Stirling County Study rated respondents primarily for mental illness (according to the criteria in *DSM-I*) and secondarily for degree of impairment (limitation of function). The impairment ratings, however, were found to be very meaningful. The Midtown Manhattan Study emphasized impairment, using seven ratings ranging from 0 for no evidence of symptom formation to 6, which was defined as being seriously incapacitated, unable to function (these ratings encompassed both symptom formation and adequacy of function in daily living).

Impairment, or limitation of function, is usually easier to measure than the presence or absence of illness. By definition, "impairment" denotes being diminished in quantity, value, or strength; it suggests deterioration. In medicine, "impairment" is a functional incapacity produced by disease or injury that interferes with a person's social and occupational adjustment. An AMA committee provides ratings of impairment based on the person's inability to function and, particularly, "loss of working or earning capacity."⁵⁵ Evaluating impairment involves assessing perception, learning, thinking, remembering, feeling, emotion, and motivation. Impairment is rated specifically in terms of the percentage of loss of function affecting the "whole man."

The AMA committee states that "because the aim of the psychiatric evaluation is to delineate the loss of function resulting from mental illness, there is need for a frame of reference which has universal application. . . . A loss of function in mental illness is manifested by varying degrees of deterioration in *one or more* of the specific aspects of an individual's adjustment, i.e., regressive changes which are physiological, psychological, personal, and/or social." This view of impairment is close to the concept of the abnormal presented by Wegrocki in his analysis of mental illness behaviors in differing societies. Also, it supplies an essential unifying concept that is necessary because we evaluate not only "dysfunction . . . which the patient may or may not appreciate, but also social, cultural, and even philosophical factors and considerations." The concept of regression—functioning at a more direct, simpler, and more immature level of adjustment—supplies both a unifying construct for assessing limitations at various functional levels and a universal frame for evaluating impairment.

Assessing degree of impairment in epidemiologic studies can be seen as an attempt to compensate for the limitations inherent in our concepts and definitions of mental illness. The investigator is not bound by the constraints of various models and can measure observable phenomena. Such phenomena are, fundamentally, evaluations of role expectations and role performance which in turn are socioculturally established. Primarily, impairment hinges on the crucial point—capacity to work, whether that be gainful employment, the homemaker's tasks, or the student's ability to

study. In discussing “The Measurement of Levels of Mental Morbidity” in his 1960 WHO report, Reid⁵⁶ states that “one may have to accept an operational definition of the onset of mental disorder as a disturbance of feeling or behavior which is disabling enough to cause admission to hospital or *an inability to work effectively*” (Italics ours).

But we have found difficulties in applying concepts of impairment to certain subcultural groups. Our Florida Health Study revealed that certain subcultural groups do not adhere to the wider society’s standards. For example, many blacks in one small community seldom went to work on Mondays. For that group, this represented no failure in role performance, yet working only four rather than five days per week could be considered as evidence of some degree of impairment, according to the widely accepted and operationalized criteria that we were using.⁵⁷

Srole⁵⁸ presents a diagram that displays many of the problems confronting the investigator assessing mental health and illness (Fig. 6).

		+	-
+	Interpersonal malfunction	A	B
-		C	D

Figure 6. Relationships among symptoms and malfunctions (adapted from L. Srole⁵⁸).

The populations in Cells A and D can be recognized by most criteria for measuring mental health or illness. Those in Group C suffer from intrapsychic distress only, but manage to function at a level which is not considered abnormal or pathological; they are not identified when only impairment is used as the operational criterion. (It is possible that they might be much more effective in their interpersonal and other role performances if they were not suffering from intrapsychic distress.) Those in Cell B constitute many of the deviants who can easily be identified as having difficulty in role performance, but who do not satisfy one of the essential criteria of the medical model—symptomatic distress. Also, most of them never seek psychiatric treatment, and when some do they are usually considered to be refractory cases; as a consequence, they do not come to attention until they commit offenses that warrant their removal from society.

Thus, impairment bridges various concepts of mental illness and can usually be measured in epidemiologic studies. But assessing impairment is a compromise solution to the problem—defining mental health and illness—and has some limitations that need to be recognized. Particularly, it involves some value judgments and thus may not be applicable to some subcultural groups.

Some Current Trends

Despite striking advances in the medical and behavioral sciences in the first part of the twentieth century, the psychiatric epidemiologist's difficulties with the definition of mental illness have increased. Particularly, the rapid rate of social change has produced shifts in roles and patterns of behavior that make it exceedingly difficult to utilize even normative models. In the United States, the 1960s were marked by a degree of social unrest which has been termed revolutionary; ethical, social, and behavioral norms changed rapidly. Some behaviors which other cultures sanctioned or institutionalized, but which in the United States were previously considered by the wider society to be symptomatic of illness, are not viewed as evidence of a mental disorder in the 1970s. Examples are not "striving" toward success, the Yogi's trance, and the ceremonial use of hallucinogens.

As early as 1963, Grinker⁵⁹ insisted that mental health would depend on an individual's flexibility. Offer and Sabshin note that this involves the ability "to adopt a number of different environments in our fast-growing and changing world." One of our studies⁶⁰ showed that the healthy were those who were able to keep pace with the rapid rate of social change. The impaired were out of step, either not keeping up with the pace or exceeding it. Hence, we may have to include a dynamic-rate-of-change-axis in our conceptualization of the parameters of mental health and illness.

The current trend in psychiatric epidemiology is to develop and work with the more finite indicators of mental illness. The emphasis is on phenomenology. For example, Kurt Schneider's⁶¹ descriptions of the first-rank symptoms of schizophrenia are now recognized as diagnostically valuable. They include major symptoms of mental illness, such as hearing one's voice spoken aloud, auditory hallucinations involving comments about one's behavior, the experience of having one's thoughts controlled or broadcast, somatic or other delusions, and feeling that one's actions are controlled or otherwise influenced.

Feighner and his colleagues⁶² have outlined diagnostic criteria for 14 mental illnesses that can be used clinically and in research. For example, to diagnose depression, the person must exhibit: A. dysphoric mood; B. at least five of the following: (1) poor appetite, (2) sleep difficulties, (3) loss of energy, (4) agitation or retardation, (5) loss of interest in customary activities, (6) feelings of self-reproach, (7) difficulty in thinking or concentrating, (8) or recurrent thoughts of wishing to die or commit suicide; and C. a psychiatric illness lasting at least one month with no history of other psychiatric disorders such as schizophrenia. These explicit diagnostic criteria are being used by researchers at Washington University School of Medicine, especially to study the epidemiologic aspects of the affective disorders, and by Winokur and his colleagues in their important longitudi-

nal study of The Iowa 500 (see Chapter 13). In England, Wing *et al.*'s⁶³ Present Status Examination is used extensively in multinational studies of schizophrenia and other disorders.

This trend toward developing and using stringent criteria for diagnosing mental illness should have both clinical and research value. It represents a major step toward achieving greater diagnostic uniformity and should help overcome the basic handicap confronting psychiatric epidemiologists—difficulties with establishing “caseness” and problems with case-definition. Also, the use of standardized criteria for diagnosing mental illness has a potential for supplying more precise concepts and definitions of some mental illnesses.

At the present, Karl Jaspers'⁶⁴ concept of three categories of mental illness is still meaningful. The first is a somatic process—mental illness produced by a known pathological brain process (e.g., organic brain syndrome). The second constitutes the major psychoses of unknown etiology. Jaspers states that, to some extent, these are the psychoses in the hereditary groupings (e.g., schizophrenia and manic-depressive illness), but that, until the somatic process producing them is demonstrated conclusively, we are compelled to regard them as serious events that break into and disrupt a healthy life. The third category consists of “unwanted” variations of human nature (e.g., neuroses). Jaspers believes that: “If we get a concrete knowledge of the third group some light is thrown in its turn on the psychic disorders of organic origin. Human life as such is involved at every point, the concepts of natural science are indispensable but here do not suffice and everywhere we find a gulf between man and beast.”

Esquirol asked: “Who can tell when health ends and disease begins?” And many years later, Freud⁶⁵ wrote that “normality in general [is] an ideal fiction,” and that it was impossible to define health “except in terms of metapsychology” (which he thought were conjectural). Our discussion has presented various aspects of “The Problem” that have hindered progress in psychiatric epidemiology. The scope of our understanding of mental health and illness is limited by the adequacy of our definitions. But, as we shall see, a review of the more modern studies in psychiatric epidemiology reveals that, despite their limitations, they have contributed to our understanding of the mental disorders in their sociocultural as well as their clinical context.

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9

The Quest for Prevalence: Twentieth-Century Studies—1900–1950

[I]t must be of interest to the governors of society to know how large a fraction of the population is mentally so disabled that assistance from society—continuously or at intervals—will be required. The increasing social consciousness of nations will tend to direct more and more attention towards these problems.

—STRÖMGREN¹

Scientific interest in the prevalence of mental illness in populations waned in the latter decades of the nineteenth and early decades of the twentieth centuries for many reasons. As we discussed in Chapter 7, investigators realized that their methods for studying prevalence were extremely crude. (Andrew Halliday's work in Scotland in 1828 and Jarvis' work in Massachusetts in 1855 are exceptions.) And questions about the possible relationship between civilization and insanity were so global and imprecise that they could not be evaluated scientifically. Subsequent contributions would be dependent upon advances along three fronts: (1) developing more sophisticated methodology, especially sampling procedures for community and family surveys and analytic techniques for working with data; (2) conducting field studies of general populations to learn about the undiagnosed and untreated; and (3) utilizing healthy controls to provide meaningful comparisons. The lack of a standard system for diagnosis and classification of the mental disorders hampered the evolution of psychiatric epidemiology.

Although social psychiatry and epidemiology were at a low ebb, clinical psychiatry surged forward with Kraepelin's development of a system of classification in the 1880s and 1890s. His work on dementia praecox and manic-depressive illness, in conjunction with Bleuler's formulation of the schizophrenias, gave birth to modern clinical psychiatry and stimulated clinicians' concern with phenomenology. Concurrently, Freud's

studies on hysteria and his discovery of psychoanalysis supplied a model for understanding the cause of neurosis, the psychodynamics involved, and a method of treatment.

Modern clinical psychiatry evolved along three routes: (1) the neuropsychiatric, which emphasized hereditary factors; (2) the psychoanalytic, which focused on the individual's mental conflicts and mechanisms of defense; and, later, (3) Adolf Meyer's psychobiology, which viewed mental illness as a reaction pattern and provided a new impetus for social psychiatry and further epidemiologic investigations of the relationships between social factors and mental illness. All of these fields developed within a specific sociocultural and scientific context. The era between 1871 and 1914 was a relatively stable and tranquil period in Western society, the lull before the calamitous events: World War I, the Great Depression, and World War II. The prevailing idea of the age was belief in progress based on faith in science and on trust in the decency of Western man. Magnificent scientific advances in cellular pathology and bacteriology gave rise to hopes that specific, visible causes could be found for all diseases. Organically minded investigators conducted exhaustive postmortem examinations of the mentally ill in attempts to find discernible lesions that might have etiologic significance.

The Neuropsychiatric

Darwinian principles that pervaded the biological sciences and spread later to involve the social sciences, stimulated some biologically oriented investigators to heed the age-old observation that heredity influenced mental health or illness. Sir Francis Galton,² Darwin's cousin, traced the genealogies of "men of genius" to uncover hereditary influences on the mental faculties. As the father of eugenics, he advocated restricting the birthrate of the unfit. Other investigators, spurred on by the emergence of the new science of genetics, began early case-control studies of the blood relatives of mental patients. The climate of opinion, at least in middle- and upper-class Western society, was favorable for such endeavors. Eugenics was a popular topic in an age of concern about "diluting the stock" and "hereditary tainting." Concurrently, Alfred Binet³ applied the statistical principles of the normal variation (developed by Quetelet's⁴ use of the Gaussian Curve in the social sciences half a century earlier) to the study of the range of human intelligence and developed the first standardized IQ test.

Even before the principles of Mendelian genetics were brought to light, Kraepelin's followers began genealogical studies of the ancestors and other relatives of mentally ill patients to ascertain hereditary patterns. In 1895, Koller⁵ carried out one of the first case-control studies in psychiatric epidemiology; mental illness was somewhat more prevalent in the relatives of hospitalized patients than in the relatives of hospital personnel. In 1896,

Jost⁶ found that 2% of the ancestors of 200 sane persons had been mentally ill; whereas, in 1898, Naecke⁷ found that 18% of 80 mental patients' relatives had been mentally ill. Diem,⁸ in 1905, used Koller's case-control method with a larger number of subjects and obtained similar results. In 1913, Jolly⁹ studied the relatives of psychiatric outpatients and of patients' "healthy" mates. Strömgren states: "Jolly's results did not differ very much from those of Koller and Diem."¹⁰

These studies have been criticized because of their methodological defects: (1) The sample size was quite small; (2) diagnostic criteria for inclusion of cases were imprecise—mental and neurological cases were lumped together; (3) the control groups were neither matched with the cases nor with random samples of the general population; they consisted largely of available persons who often were not adequately screened to rule out the presence of illness and who were unlikely to be representative of the general population because of their occupational and marital statuses; and (4) the results were not standardized. Failure to standardize for age theoretically limits the validity of group comparisons, since it does *not* remove the effect of age differences in the two populations. It is possible that one group would have a higher rate simply because it contained more subjects who were at an age when mental-neurological diseases are more common. Also, the findings were not adjusted to account for degree of relationship to either the index cases or to the controls, thus restricting conclusions about the hereditary aspects of mental illness. The deficiencies of such early studies prompted investigators to develop better methodologies for evaluating hereditary aspects of mental illness. They needed baseline data on the incidence and prevalence of mental illness in the general population and data on healthy populations for control purposes.

Rüdin¹¹ and his colleagues in the Munich school, such as Luxenburger and Schulz, used more exact methodologies in the 1920s and 1930s. Unfortunately, some of the findings published in the 1930s reflect the influence of Hitler's belief in "Aryan Superiority." These studies on "hereditary tainting," however, were the proving ground for methodologic advances and stimulated other investigators to develop methods for measuring the prevalence of mental illness in the general population.

Because of the methodologic defects in the early studies and the small sample size in the later ones, these investigations contributed little to our knowledge about the hereditary aspects of mental illness. But Strömgren was able to combine the data from 18 studies and compute the expectancy rates shown in Table 6¹² for the incidence of the major mental illnesses in Central and Northern Europe in the 1930s.

The Psychoanalytic

Freud's theory of the unconscious represented the scientific and clinical application of an already popular concept. In *The Unconscious*

Table 6. *Expectancy Rates for Mental Illness in Europe*

Schizophrenia	0.72%
Manic-depressive insanity	0.20%
General paresis	0.33%
Mental defect	2.07%
Epilepsy	0.36%
Psychopathy	0.53%

Adapted from Strömgen.¹²

Before Freud, Whyte¹³ documents the widespread use of the term during the latter decades of the nineteenth century and calls attention to Hartman's 1880 volume on the unconscious. Following Einstein's famous publication in 1904, theoretical scientists turned their attention toward relativity and entropy. The concept of irrationality in human behavior, as explained by Freudian theories of the unconscious, paralleled and, to some extent, followed the uncertainty principle in the physical sciences which was supplanting the tenets of a predictable Newtonian science.

The influence of psychoanalysis on the development of psychiatric epidemiology has been indirect because psychoanalysis has been concerned primarily with the individual's mental processes. However, in "Group Psychology and the Analysis of the Ego," Freud offered a psychoanalytic explanation for group behavior and leadership; viz., the group's libidinal energy is invested in the leader. Freud analogized between the mental processes of the individual and the mind of the group, conceptualized as an organism, not as a collection of healthy and sick individuals. Thus, his notions interested anthropologists who were eager to research the social and symbolic manifestations of his psychodynamic formulations in other cultures. In this pursuit, social anthropologists have gleaned information about the frequency and rarity of various syndromes in different cultures, their differing cultural manifestations, and relationships between child-rearing practices and personality characteristics that has enriched the entire field of psychiatry.

The Psychobiologic

Adolf Meyer's psychobiology—the third major development in clinical psychiatry—is an American contribution that appeared several decades later. Its acceptance and influence in American psychiatry coincided with renewed interest in social psychology, and reflected concern about the social processes that impinged on patients' lives. Meyer's demand that attention must be given to every detail of the mentally ill patient's life and to his habits and reactions expressed American culture's values—rugged individualism and a flexible social structure.

Renewed interest in social psychiatry can be traced to Meyerian psychobiology. Meyer's concept of mental illnesses as reactions to life events, his concern with problems of social adjustment, and his personal involvement in social work and the National Committee for Mental Hygiene aroused his colleagues' and students' interests in the public health aspects of psychiatry. Many prominent American psychiatric epidemiologists studied under him.

Early Twentieth-Century Studies of Prevalence and the Need for Facilities

Developments in neuropsychiatry, psychoanalysis, and psychobiology provided a more solid basis for epidemiologic studies. The majority of the newer studies were designed to determine the prevalence of mental illness and the adequacy of treatment services or to uncover genetic and sociocultural factors that might have etiologic significance.

Strömngren explained that both "social authorities" and psychiatric researchers were interested in ascertaining the number of mentally ill in the general population. Health administrators needed accurate information to plan for the delivery and cost of services. Psychiatrists were concerned about obtaining accurate prevalence estimates to: (1) compare morbidity rates in the relatives of the mentally ill with rates in the general population; (2) learn whether rates varied among different social classes; (3) ascertain differences in rates in various nations and cultures; and (4) evaluate possible changes in rates over time.¹⁴

Sociopolitical and economic factors as well as advances in clinical psychiatry provided an impetus for a resurgence of activity in epidemiology, particularly prevalence studies. Fears of a possible increase in mental illness had prompted a flurry of epidemiologic investigations following the French and American revolutions and the sociopolitical turmoil of the early nineteenth century. Likewise, about one hundred years later, it appears that the strains in the social fabric following the first World War—the fall of established monarchies, the end of a century of bourgeois stability, the specter of Communism, and the economic vicissitudes culminating in the Great Depression—produced doubts about the efficacy and responsiveness of Western societies' political systems. The turbulent economic conditions in Western society in the late 1920s and 1930s created a need for methods for assessing employment, housing, population shifts, etc., as well as disease. Social problems became a dominant concern during the Great Depression. Public health methods were employed to ascertain needs for health care and to evaluate the adequacy of public service organizations, with the expectation that governmental policies could rectify deficiencies and improve the quality of life. In this sociocultural context, the already demonstrated value of public health measures for the control of many of

the infectious diseases offered a model for the potential benefits of epidemiologic investigations of the mental illnesses.

The ensuing review of the major studies in psychiatric epidemiology will be grouped according to their contributions—the information obtained about prevalence and implications for the treatment of mental disorders. Also, they will be presented generally in chronological order and discussed in terms of their epidemiologic and social psychiatric significance.

Nassau County—1916

In this first major survey in the United States, Rosanoff¹⁵ found that the prevalence rate of mental disorder was 36.4 per 1,000 in the small districts studied (known to be “bad” areas), and estimated that it was 16.4 per 1,000 for the entire county. This effort to relate psychiatric illness and social maladjustment anticipated future considerations of the comparative definitions of illness and of deviance and the interrelationships between mental illness and social factors (see Chapter 5, Part 2).

Switzerland—1931

In St. Gallen, Switzerland, Graemiger,¹⁶ the district’s local physician for 25 years, evaluated 66 families—1,357 individuals from four generations. He reported that mental abnormality was present in about 12%, schizophrenia in 4% (unusually high), manic-depressive psychosis in only 0.8%, and epilepsy in 0.3%. These findings suggest that the population was unusual—we wonder about the extent of consanguinity. However, Ström-gren states that: “His material was supposed to be representative of the Swiss population in general.”

Thuringia, Germany—1929–1933

Brugger¹⁷ carried out a survey in a large rural area and reported that the prevalence rate for all mental disorders was 13.1 per 1,000. More than one-half of the psychotics were in the community, not hospitalized. He also conducted genealogical studies by gathering family histories on all patients admitted to institutions during a two-year period; the prevalence of schizophrenia in the patients’ siblings was 9.8 per 1,000 and in the parents, 5.5 per 1,000, in contrast to a rate of 1.0 per 1,000 for the entire population. Later, in another rural area in Bavaria, Brugger attempted to count the mentally ill among all 6,000 persons and reported a total rate of 75 per 1,000 (see Chapter 5, Part 2).

Eastern Health District, Baltimore—1933

B. M. Cohen and his colleagues¹⁸ tabulated all cases receiving care in hospitals and from agencies and reported a total one-year prevalence rate

of 44.5 per 1,000; the rate for psychoses (age 15+) was 8.18 per 1,000, and for neuroses, 2.0. The chunk sampling method used (two wards in the district) precluded generalizations about rates in the city (see Chapter 5, Part 1).

Eastern Health District, Baltimore—1936

Beginning in 1936, Lemkau and his co-workers¹⁹ restudied this district in Baltimore over a number of years by gathering data from hospitals, clinics, agencies, etc. The total mental illness rate was 60.5 per 1,000 (25% higher than in 1933), for psychosis 6.6 (age 10+), for neurosis in adults 3.1, for neurotic traits in children 2.9, and for conduct problems in children 34.9 per 1,000. Again, since they studied only one district, the findings could not be generalized to larger populations (see Chapter 5, Part 1).

Bornholm, Denmark—1933–1936

These intensive studies of an entire small Danish island by Strömngren²⁰ in 1935 and by Fremming in 1947 laid the foundation for a series of investigations carried out by various Scandinavian epidemiologists. Strömngren attempted to identify all persons who were or had been mentally ill and reported a lifetime prevalence rate for total mental abnormality of about 120 per 1,000, for psychosis 28.0, and for oligophrenia 4.2 per 1,000. About 25% of the psychotics were in hospitals, about 35% were not in hospitals, and almost 40% had recovered. Extrapolations from these findings indicated that there should have been 11,500 hospitalized patients in Bornholm; 11,000 were found. Therefore, Strömngren believed that his results could be generalized to the population of Denmark.

Strömngren also took a census of 1,000 persons in a small district in Bornholm. He reported that 12% of those above the age of 20 were or had been "mentally abnormal." The lifetime prevalence rate for psychosis was 28 per 1,000 and for mental deficiency, 30 per 1,000. Strömngren's evaluation of the inhabitants' "social state" revealed that only 60% of those with mental disorders manifested evidence of impairment (see Chapter 5, Part 2).

Finland—1936

The findings from two surveys in Finland were reported by Kaila²¹ in 1942. For the first, information was gathered from hospital records and key informants in 72 arbitrarily chosen boroughs containing 12% of the country's population. All persons reported to be mentally abnormal were then examined by psychiatrists. The rate of total mental disorder was 11.6 per 1,000, of psychosis 6.5, and of mental deficiency 4.4 per 1,000; but these findings cannot be generalized to the population of the country because the

survey was basically a rates-under-treatment study. For the second survey, all persons with mental disorders in Finland were asked to report for registration. The prevalence of psychosis was 7.2 per 1,000 and for mental deficiency 4.4 per 1,000. Kaila reported that the prevalence was higher in the areas where more persons were on welfare rolls and where there had been more extensive emigration.

Williamson County, Tennessee—1935–1943

Roth and Luton²² studied the prevalence of mental disorders in Williamson County, Tennessee, in an effort to “define the mental health problem in a representative rural community.” They used two methods for case-finding: (1) referrals from key informants, agencies, and particularly the County Health Department, plus data on institutionalized patients; and (2) psychiatric examinations of all residents in three small rural districts. The prevalence rate for mental illness, as determined from referrals and institutions, was 69.4 per 1,000; however, the case rate in the three intensively studied districts was 123.7 per 1,000 and for psychosis 6.3. They found that only about 56% of those needing treatment had been brought into the mental health care delivery system. Moreover, only about one-half of the psychotics and one-tenth of the mental retardates were in hospitals or other institutions.

Roth and Luton also supplied ratings (mild, moderate, severe) for social and personal maladjustment. They emphasized that it was necessary to evaluate the impairments resulting from mental illness rather than merely to consider diagnosis, and that measuring impairments might be a particularly “workable” public health approach.

Roth and Luton’s efforts to assess the prevalence of mental illness were hampered by a number of methodologic difficulties. First, their intensive sampling of three discrete rural areas cannot be assumed to be representative of the entire county which includes one historic small city; it is possible that the farm and city dwellers could be different populations. Second, they selected a census date (September 1, 1938) for their one-day prevalence rates, but used lifetime diagnoses in their presentation of the results. Thus, persons who had had mental illnesses at any time in their lives were included with those who were actually suffering from mental disorder on the designated census date. Third, the results were incompletely presented and some rates were not standardized.

Despite these limitations, the Williamson County Study is important. Roth and Luton found a large discrepancy between the numbers of those needing psychiatric treatment and those actually receiving some care. Second, they compared their rates for utilization of mental health services with rates in other areas and in the United States as a whole; the utilization rate in Williamson County, with its sparse facilities and services, was

particularly low. Third, comparisons with Brugger's studies¹⁷ showed that in rural Williamson County, as in a rural area of Thuringia, Germany, one-half of the psychotics were not hospitalized. In contrast, the 1936 Eastern Health District Study in Baltimore reported that only one-fourth of the psychotics in that urban area were not hospitalized. These comparisons point out important rural-urban differences in utilization of treatment facilities and possibly community factors affecting tolerance of disturbed behavior.

Japan—1940–1942

Lin and Standley²³ report that three groups of Japanese investigators conducted prevalence studies by reviewing medical records, obtaining reports from key informants, and, in some instances, examining patients and making home visits in selected areas. Uchimura *et al.* found in 1940 that the total rate for mental disorders in a rural area (an island with a population of 8,000) was 6.8 per 1,000, and for psychosis 6.2. Strömngren thinks that the population of the island was not representative of that of Japan.²⁴ In 1942 Akimoto *et al.*²⁵ found in a small town that the total prevalence rate was 26.5 per 1,000 and for psychosis 8.5. And in an urban area Tsuwaga²⁶ found that the total prevalence rate was 30.8 per 1,000 and for psychosis, 9.2.

Norwegian Coastal Village—1939–1945

One of the most intensive investigations of an entire community is Bremer's five-year study of a remote Norwegian Arctic village during World War II (1939–1945). He undertook to "determine the appearance and frequency of psychiatric abnormalities, and, partly, to elucidate the distribution of other manifestations important to mental hygiene . . . within a specified and, geographically, fairly well limited and surveyable section of a population of reasonable size."²⁷ The isolated village is located on the bleak coast of northern Norway; the only means of travel to and from it is by sea. The Arctic climate, "nine months winter and three months cold," a poor economy dependent upon fishing and quite primitive farming, and the "monotony of dull grey houses" gives it the impression of being "a depressing and God-forsaken country." In 1930, the domiciled population was 1,566, the same as on the census day, March 31, 1944.²⁸

The impact of World War II was both diverse and pervasive. During the first few months, in mid-1940, a depressive mood was predominant; then the work provided by the Germans' war activities stimulated the economy. But the Germans occupied the village in late 1941, and, by the autumn of 1942, it was in the midst of the war. The Germans built an airstrip to protect their convoys, and Russian planes attacked the coast and

the village. The war brought political unrest and divisiveness; some inhabitants became Quislings while others joined the resistance movement. Thus, this study was conducted during an unusually stressful period.

Bremer had come to the village in 1939 and was its only physician until the end of the war. By the census date he had collected information on almost all of the inhabitants, including data from hospitals and other public records. During the years, he had personal contact with almost all of the inhabitants and had compiled index cards (that could be used for the census) on each person. Table 7²⁹ shows the frequencies of mental disorders in the 1,080 inhabitants over ten years of age.

Bremer concluded that, during the five-year observation period ending on census day, March 31, 1944, “almost every fifth person aged over ten in this community had, in one way or another, shown signs of being *chronic* ‘psychic exceptional’—either in the form of psychic diseases (in about half the cases), or in the form of intellectual or characterologic ‘minus variations’ ” (abnormal or pathological).²⁹ Although the village was subjected to wartime stresses, Bremer believes that the wartime conditions were responsible for only about 2% of the “transient nervous cases,” and that there was no increase in the frequency of the more chronic mentally disturbed as a result of the war. He thinks that interrelated biological and social factors produced the high rates (25% had been mentally ill at some time during the five years) that were disclosed by his intensive case-finding methods.

He then grouped the population as socially secure (employed regularly) or socially insecure (dependent on relief or emergency employment). The frequency of psychosis and neurosis was the same in the two groups, although psychopathy (sociopathy) and oligophrenia (mental retardation) were much more frequent in the socially insecure group. The total frequency of chronic psychic affections (psychoses, neuroses, and psychopathies) was about 10%—higher in the women, 14.4%, than in the men, 6.4%, and increased with advancing age from 4% of those aged 15–29 years to 18% in those aged 60+ years.

Table 7. Percentages of Persons with Mental Illnesses

Total mental abnormality	19.50%
Psychosis, total	3.59%
Chronic neurosis (and neurasthenia)	2.31%
Neurosis, including transient, partly lighter neurasthenic-hypochondriac cases	5.56%
War neurosis	2.04%
Psychopathy	9.35%
Oligophrenia	5.56%

Adapted from Bremer.²⁹

To determine associations between parental and environmental factors and the frequency of childhood disturbance, he classified the children's and adolescents': (1) social level—secure or insecure, (2) home conditions—comparatively good or bad (marital turmoil, divorce, fighting, neglect of home), and (3) parents' mental states. Childhood disturbances were found in 46.7% of those whose parents were mentally ill and who also lived in bad home conditions in contrast to 14.3% of those whose parents were mentally healthy and who lived in comparatively good home situations.

Bremer was concerned about a fundamental question: Had the adverse social environment produced or contributed to the high rates of mental disorder, or had the inhabitants (handicapped by illness and deviation) created deleterious socioenvironmental conditions? He refers to the 1923 work of Grotjahn, "the pioneer of social pathology," who emphasized the close interrelatedness of the socioenvironment and the mental health of its members. Today, we are used to thinking of the ways in which an environment may potentially influence the mental life of persons in it. However, Bremer, and Grotjahn before him, raised an equally important and perhaps more complex question concerning the role of the mental disorders in exerting a "shaping influence on the environment."³⁰

Swedish Island—1948

Sjögren³¹ began an extensive study of two small Swedish islands, A:bo and B:bo, in the early 1940s and reported preliminary findings from his work on A:bo (population 8,736) in 1948. He attempted to make a "statistical and hereditary-biological analysis of psychoses and oligophrenia as well as a genealogical survey." Sjögren reviewed records from parish registers, hospitals, and other sources to identify probands—all cases of psychosis, psychopathy, or oligophrenia 1900–1944. He also carried out genealogical studies and interviewed families; altogether, about 9,000 persons were studied. He controlled for migration to and from the island and for consanguinity.

The total frequency of mental disease on December 31, 1944, was 44.5 per 1,000 population, for psychosis 24.2, and for oligophrenia 10.2. The corrected (for excess mortality) expectancy rate for psychosis was 3.5%, for oligophrenia 1%, for schizophrenia 1%, for manic-depressive psychosis (risk period 20–60 years of age) about 0.80%, and for senile and presenile plus involuntional psychoses, about 1%. Sixty percent of the schizophrenics were hospitalized, in contrast to only 8% of the manic-depressives. The average life expectancy for a schizophrenic person was found to be only three-fourths that of normals in the same age group.

Some of Sjögren's genealogical findings related to prevalence and expectancy were: (1) an increased expectancy, 12% for psychoses and 6% for schizophrenia, in the siblings of schizophrenic probands (parents

healthy)—much higher than for the general population, 2.4% for psychoses and 1% for schizophrenia, (2) an increased expectancy of manic-depressive psychosis in both parents and siblings of manic-depressive probands; (3) an increased expectancy of senile and presenile plus involuntional psychoses for the siblings of probands (parents healthy) with these disorders.³² (See Chapter 13 for his other genealogical findings.)

Taiwan—1946–1948

Lin and Standley's³³ prevalence survey studied 19,931 Taiwanese of Chinese descent in three sample areas—a rural district, a small town, and a section of a large city. They collected information about suspected mentally ill persons from records and key informants, gathered demographic information on family size, age, sex, occupation, etc., obtained the personal histories of suspect cases, and attempted to uncover unreported cases. Finally, small psychiatric teams interviewed every inhabitant, examined suspect cases, and referred the mentally ill to the chief investigator for reevaluation. The total mental disorder prevalence rate was 10.8 per 1,000, for psychosis 3.8 (schizophrenia, 2.1 and manic-depressive illness, 0.7), mental deficiency 3.4, psychoneurosis 1.2, and epilepsy 1.3 per 1,000. Rates for alcoholism and psychopathy were "very low." The rate for senile psychosis in those over the age of 60 was 10.7 per 1,000. There was little variation in the total rate among the rural, small town, and city groups; however, there were more schizophrenics and neurotics in areas of high population density and more epileptics and mentally defectives in the peripheral and rural areas. According to Lin, the findings "challenged the prevailing conception that Chinese society was free of mental illness and showed the problem to be of the same order of magnitude as in other societies."³⁴

Bornholm—1947

A little more than ten years after Strömgren had studied the Danish island Bornholm, Fremming³⁵ conducted a longitudinal cohort investigation. He traced 92% of the 5,500 persons born in Bornholm between 1883 and 1887 and gathered information from records and interviews with about 2,000 persons. The frequency of mental abnormality was 12%, almost identical with that found earlier by Strömgren. The frequency of psychoses was 8.1%, for females 5.3%, and for males 3%. The expectancy rate for schizophrenia was 0.9%, in agreement with other investigators' findings. Fremming found, however, that the frequency of manic-depressive psychosis was 1.6%, higher than usually reported. Importantly, many of the manic-depressives had never been hospitalized. The incidence of sociopathy (criminality) was 2.8% for males and 0.6% for females. Of all the

deaths, 1.5% were due to suicide; of this group, 75% had been mentally ill, but there was no evidence of mental illness in the life histories of the remaining 25%. Fremming also evaluated impairment, specifically, inability to work; 38% of the psychotics and expsychotics were unable to work as were 27% of those with other types of mental disorders (see Chapter 5, Part 2).

Scotland—1948

Mayer-Gross³⁶ studied a poor rural area in Scotland that contained 56,000 inhabitants—a “residual population” in view of the extensive emigration from the area. He collected data from the hospital, school system, and other sources, including results of intelligence tests administered to all children at age 11. About 9% of the total population was found to be abnormal: dull and backward (IQ 70–80) 2.85%; mentally defective 1.65%; neurosis or psychopathy 1.9%; schizophrenia 0.42%; affective psychoses 0.35%; senile or arteriosclerotic psychoses 0.6%; alcoholism 0.39%; and epilepsy 0.17%.

Discussion and Summary

In reviewing these studies conducted in the first half of the twentieth century, we have seen problems arising from imprecise definitions, from the unavailability of modern sampling theory and techniques, and from limitations imposed by the level of technology for data processing. Despite such conceptual and methodologic handicaps, which were often unavoidable in such early efforts, these studies yielded some important findings.

Some of the studies originated from the conviction that public health approaches could be usefully applied to the study and control of the mental disorders. Importantly, several investigations revealed that large numbers of the mentally ill had never received any form of treatment; indeed, more than 50% of the psychotics in Williamson County, Tennessee, had not been brought into the existing, albeit inadequate, mental health care system. Other studies were more concerned with determining prevalence rates, a logical first step in determining the magnitude of the public health problem and for establishing a needed baseline against which new findings could be compared scientifically and evaluated meaningfully.

Investigators were naturally interested in comparing results from different areas. As previously mentioned, the rates varied widely, ranging from a low of 7.2 per 1,000 (Kaila in Finland) to as high as 195.5 per 1,000 (Bremer in Norway). In 1950, however, Strömngren concluded that the more intensive prevalence studies in Western Europe yielded fairly consistent results. The expectancy rates for mental abnormality were about 12%: “This figure seems to have a general significance for civilized countries

with white populations.”³⁷ Strömberg believed also that the expectancy rate of 1% for schizophrenia was “a rather general phenomenon.”

But some of the widely discrepant findings might be attributable to real differences in the populations. The various studies had been conducted in diverse parts of Europe, North America, and Asia, raising the possibility that the different rates are the results of particular sociocultural and/or genetic processes. Such speculation led naturally to the hope that appropriately designed studies would uncover specific correlates of the mental disorders and provide the tenets for a coherent and testable theory of the etiology and treatment of mental illness. As will be pointed out, the next group of studies did take up these issues; investigations became increasingly concerned with testing hypotheses involving sociocultural and genetic variables.

In addition to the conjecture that rates of mental illness truly differ according to the population studied, it appears that methodologic variability accounted for observed differences in rates. At all levels of investigation—definition of mental illness, case-finding, research design, and data analysis—possibilities exist for methodologic differences between studies that preclude comparability. Clinical psychiatry was in its infancy, a stage at which there was little agreement about diagnostic criteria and nosology.

Problems with case-definition hampered investigators' efforts and are still obstacles impeding progress in psychiatric epidemiology. Many of the studies that we have reviewed were subject to the limitations of rates-under-treatment investigations, since they used records to designate probands, at least as an initial effort. But also, many of them relied heavily on information from key informants to identify mentally ill persons. We are now aware that the key-informant approach can be both limited and biased, affecting the results, particularly in cross-cultural studies and in studies of populations composed of several subcultural groups. A key-informant's view of what constitutes normal or abnormal behavior is determined in large part by his cultural background. For numerous reasons—personal, familial involvement, and subcultural pride—key informants might be biased in a direction that leads to underreporting; or, for other reasons, they might tend to overreport.

Lin and Standley graded a group of the prevalence studies in various nations on a three-point “intensity” scale. Low intensity refers to those studies relying solely on records; high intensity involves interviews and examinations of samples from the general population. As can be seen in Table 8,³⁸ high-intensity studies in different countries tended to yield higher rates than low-intensity studies.

Some of the early studies did not use currently accepted methods (e.g., age-standardization) in presenting their results. Since often there were no adjustments to account for differences in the demographic composition of the study populations, it was difficult to compare findings except in terms of total (crude) rates.

Table 8. Summary of Psychiatric Data in Various Countries

	Investigator	Date of investigation	Type of area	Intensity of investigation ^a	Population studied	Mental disorders		Psychoses	
						Total number of cases	Rate per 1,000	Total number of cases	Rate per 1,000
China	Lin (1953)	1946-48	Rural	III	19,931	214	10.8	76	3.8
Germany			Small town						
Thuringia	Brugger (1931)	1929	Rural	II	37,561	479	12.8	143	3.8
Bavaria	Brugger (1933)	1930-31	Rural	III	8,628	517	59.9	48	5.6
Denmark									
Bornholm	Strömgen (1938)	1935	Rural	II(III) ^b	45,930	716	15.6	409	10.9
Sweden	Sjögren (1948)	1944	Rural	II	8,736	397	45.4	84	9.8
Norway									
West coast village	Bremer (1951)	1944	Rural	III	1,325	259	195.5	19	14.3
Finland	Kaila (1942)	1936	Rural	II	418,472	3,026	7.2	2,510	6.0
USA									
Baltimore	Lemkau <i>et al.</i> (1941)	1936	Urban	I	55,129	3,337	60.5	171	6.7
Tennessee	Roth and Lutton (1943)	1938	Rural	II	24,804	1,721	69.4	156	6.3
Japan									
Hachijo Island	Uchimura <i>et al.</i> (1940)	1940	Rural	II	8,330	65	6.8	52	6.2
Komoro	Akimoto <i>et al.</i> (1942)	1941	Small town	III	5,207	138	26.5	44	8.5
Tokyo	Tsuwaga (1942)	1941	Urban	III	2,712	82	30.8	25	9.2

After Lin [1953]; adapted from Lin and Standley.³⁸

^a The investigations have been divided into three classes of intensity: I. The method of investigation consists of perusal of written records from institutions and agencies. II. The method consists of perusal of written records, reports from the people, and psychiatric interviews of the mental cases. III. This method, the most intensive, consists of I and II, plus census investigation of the whole population.

^b In this study, one of the villages was investigated intensively by home visits.

But toward the middle of this century, some investigators had begun to use analytic methods to provide more fruitful results. For example, Lemkau suggested that “local population movements” might be responsible for higher mental illness rates among whites who still lived in areas that were becoming predominantly black (see Chapter 5, Part 1). And Bremer’s small classic study pointed out the adverse influence of parents’ mental disorders on the mental health of their young children who still resided with them.

The two studies of Bornholm, first by Strömgren in the 1930s and later by Fremming in 1947, although their methodologies differed, showed that follow-up studies could yield consistent findings. In 1950 Strömgren emphasized that more follow-up studies were needed, particularly to obtain accurate estimates of prevalence in various societies that could be used for comparisons.

Sjögren’s genealogical investigation of the Swedish island of Åbo was sufficiently thorough to demonstrate the increased expectancy for psychoses (including schizophrenia) among siblings of schizophrenic probands whose parents were healthy. Thus, although the very early twentieth-century studies concerned with “hereditary tainting” were so methodologically imprecise that the studies are known only for their historic value, this later genealogical investigation was significant. Sjögren’s finding that the frequency of manic-depressive illness was significantly high *in both the siblings and parents* of manic-depressive patients strengthened the foundation for current important studies on genetic factors in the affective disorders that are being conducted by Winokur and others. (See The Iowa 500, Chapter 13.)

And, as we shall see in the next chapter, imagination can be the vital ingredient in research. Using simple methodology, Faris and Dunham carried out an investigation in Chicago in the 1930s that continues to stimulate psychiatric epidemiologists throughout the world. Their results showed that human ecology is related to higher and lower frequencies of mental disorders—a finding that offers clues about etiology, but which still requires explanation.

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10

Social Correlates and Questions of Etiology: Twentieth-Century Studies—Since 1940

Mental health can only be achieved in an environment which provides opportunities for self-expression, social usefulness, and the attainment of human satisfactions.

—T. A. C. RENNIE AND L. E. WOODWARD¹

The findings from earlier twentieth-century studies provided data about the prevalence of mental illness and the need for extensive services but little new information about the genetic, familial, or social correlates of mental illness. Furthermore, the widely discrepant results showed that future investigations would require methodologic refinements, especially for identification of cases. Psychiatric epidemiology needed a catalyst to generate questions about etiology that could be formulated as hypotheses and tested scientifically.

Chicago—1939 (“Mental Disorders in Urban Areas”)

Faris and Dunham’s² pioneer study in Chicago in the mid-1930s was the first to provide the kinds of results needed to initiate this process. The investigators looked at admissions to Elgin State Hospital for the years 1922–1931 and found that the great majority of the schizophrenic patients and those with alcoholic psychosis or neurosyphilis had come from the inner city, “Hobohemia.” In contrast, manic-depressive patients had been more randomly distributed throughout the city and its suburbs. The collection of data from private sanatoria (17.5% of the total sample) did not change the observed patterns. They concluded that “in terms of chances, a person living near the center of the city is about 15 times more likely to be committed to a mental hospital than a person living on the outskirts.”³

Undoubtedly, the findings presented by Faris and Dunham had been observed, at least impressionistically, for many years. In fact, Dunham has mentioned that in 1908 W. R. McDermott discussed "The Topographical Distribution of Insanity," and asked "'why it was if there was a specific diathesis governing insanity that there should be such vast differences in its geographical distribution?'"⁴ Why then did Faris and Dunham's study immediately become so significant? We can only suggest that its recognition and importance is related to the broader societal problems and the sociology of knowledge of its time. The Great Depression and the sociopolitical problems that wracked Western nations in the two decades between World War I and World War II aroused deep concern about existing governments' abilities to respond to the grievous social challenges and to rectify inequities and hardships. As we have seen, in the United States in the late 1920s social indicators were developed to measure fluctuations in the nation's economy and, later, other aspects of the quality of life. For several decades social psychology had flowered, particularly in Chicago with the work of W. I. Thomas, George Herbert Mead, Charles H. Cooley, and the sociologists Robert Ezra Park, Ernest Burgess, William Ogburn, and others. Their intellectual vitality stimulated interest and work on the premise that has been basic to social psychology—"society and culture form human nature." Also, the advances in clinical psychiatry made by Kraepelin, Bleuler, and others earlier in the century were giving investigators greater confidence that the field would become a more feasibly researchable area.

The basic propositions for Faris and Dunham's study were:

1. Symbolic communication is essential for normal development, and lack of communication leads to mental breakdown.
2. In an urban community, certain areas have a greater degree of disorganization than other areas.
3. Disorganization is characterized by excessive mobility, ethnic conflict, breaks in communication, and lack of consensus.
4. Seclusiveness is a key trait in schizophrenia.
5. Persons who develop seclusive traits do so as a result of social isolation caused by severe social disorganization.
6. Areas of disorganization and impaired communication will therefore have the highest rates of schizophrenia.⁵

After finishing this initial study, Dunham offered a socioenvironmental explanation for the findings. In living areas characterized by "social life which is terrifically harsh, intensely individualistic, highly competitive, extremely crude, and often violently brutal . . . one's chances of growing up and developing a personality which can adjust in some fashion to our cultural life are less than in those communities at the periphery of the city. . . . [In the inner city] life is hard, the struggle is sharper, and consequently more personalities have difficulty in coping with it and

finding acceptable social economic niches in contrast to the other communities of the city.’’⁶

These findings stimulated investigators’ interests along several lines. First, could the results be replicated? Using Faris and Dunham’s methodology, within a few years similar investigations were conducted in Providence by Faris and Dunham, in Cleveland by Green,⁷ and in seven other cities in the United States. By 1942, in his summary, “Mental Disorders in Cities,” Shroeder⁸ stated that the evidence showed “insanity areas” in cities.

But how to interpret these replicated findings was another question. The demonstration of a correlation between higher rates of mental illness and life in the slum areas of cities provoked controversy and laid the foundation for one of the major, continuing debates in social psychiatry—the social causation hypothesis versus social selection theories of the etiology of mental illness. In contrast to Dunham’s early views that the adverse character of life and conditions of distress in the slum areas—social causation—accounted for the high rates of mental illness in the inner cities, other explanations were suggested.³ As early as 1940, Myerson advanced the *drift hypothesis*⁹ which holds that the large numbers of mentally ill found in the lower social strata include many from higher social classes whose incipient, if not overt, mental illnesses and consequent impairments led them to drift down the social scale. There they would be enumerated as victims of mental illness produced by the “social disorganization” of lower-class conditions rather than as persons who had been mentally ill when they were in higher social strata. If this could be proved, the social causation hypothesis would be considerably weakened. The drift hypothesis provided a nucleus for the more intricate theory of social selection, developed by researchers during the last two decades.

Bristol, England—1956

In 1956 Hare¹⁰ reported that a study in Bristol, England, showed that the rates for schizophrenia followed the geographic distribution found by Faris and Dunham. The geographic distributions for manic-depressive psychosis, neurosis, and senile dementia were quite random. However, the socioeconomic conditions and housing patterns in the two cities were not parallel. The higher rates in Bristol’s central areas could not imply a correlation with low socioeconomic class because the inner city contained both upper- and lower-class dwellings (no “necrotic hub”), and the outlying neighborhoods contained a number of housing developments for the poor. In Bristol’s central areas, however, a large number of people lived alone, many in some degree of isolation. Hare advanced the thesis that the uneven distribution of schizophrenics in large cities could be explained in part by “voluntary segregation,” i.e., the schizophrenic’s

actively self-locating (not merely drifting) in areas where there were fewer manifest pressures to conform to the expectations of the social group, particularly the middle class.

In a later study, Hare¹¹ examined the "breeder" hypothesis (adverse social processes in the central city produce schizophrenia as a result of "social isolation") and the "attraction" hypothesis (disorganization or anonymity attracts schizoid persons who are compelled to or who wish to avoid family life). Hare's interest was evoked in part by Gerard and Houston's¹² report in 1953 that, although schizophrenic cases in Worcester, Massachusetts, were distributed like those in Chicago, those living with their families were randomly distributed, whereas those living alone or away from their families were concentrated in the central city and also were residentially mobile. Gerard and Houston hypothesized that many schizophrenic patients shielded themselves from the pressures of family life both by living in lodging houses and by moving frequently.

Hare studied schizophrenic patients' family relationships; his results confirmed Gerard and Houston's findings. The nonrandom distribution of schizophrenia was accounted for mainly by those cases who did not live in a family setting. About one-half of the schizophrenics who were living alone had been compelled to move away from their families because of interpersonal frictions attributable to their personality disorders; about one-fourth had been separated from their families by circumstances; and only one-sixth had chosen freely to move. Hare concluded that for those with existing personality difficulties who had moved to boarding houses "the transition from personality disorder to schizophrenia . . . tended to occur gradually over a number of years"; for those compelled by force of circumstance to live in boarding houses, "isolation from family life was a probable . . . factor in their illness"; but that for those who had moved away from their families by choice, "the resulting isolation [did not] appear to be a significant factor in their illness."¹³ The "breeder" hypothesis, therefore, seemed to account for more cases than the "attraction" hypothesis.

Hagerstown—1955

In the early 1950s, Clausen and Kohn¹⁴ used Faris and Dunham's methodology in the study of a small city, Hagerstown, Maryland. They reported: "No apparent relationship between the socio-economic levels of areas of the city and the rates of hospitalization for schizophrenia from these areas. Patients hospitalized for manic-depressive psychoses, on the other hand, tend to come disproportionately from higher status neighborhoods."¹⁵ Clausen and Kohn offered the following explanation: Hagerstown is a small city (population 36,000); the average annual increase in population (1920-1955) was only one percent per year; and the city is

considered to be undergoing a relatively slow rate of social change. Moreover, “the small-city hypothesis” includes awareness that such semi-urban areas do not contain many “collecting areas”—boarding homes and comparable residences in which the covertly or overtly mentally ill can accumulate.

Changing Patterns

Faris and Dunham postulated in their early work that, as a general proposition: “Symbolic communication is essential for normal development and lack of communication leads to mental breakdown.”⁵ The critical importance of communication has been emphasized by Ruesch and Bateson¹⁶: “psychopathology is defined in terms of disturbances of communication.”

Living in rooming houses, old hotels, and dwellings for transients places the schizoid or schizophrenic person in a relatively isolated position. Those who drift into or seek such kinds of housing can obtain a measure of anonymity, with consequent lessening of communication and reduction of needs for active socializing. The resulting social isolation may be conducive to the development (in those with schizoid personality disturbances) of a manifest schizophrenic syndrome. Also, living in a socially isolated situation has been found by Sainsbury¹⁷ to be associated with high suicide rates in London. In Syracuse, Gruenberg¹⁸ found that those living in tenements had high rates of senile and arteriosclerotic dementia.

Much later attempts to replicate Faris and Dunham’s work, such as Rowitz and Levy’s¹⁹ study in Chicago in the 1960s and Dunham’s²⁰ studies in Detroit in the late 1960s, did not demonstrate the patterns found 30 years earlier. The previously skewed geographic distribution for schizophrenic rates were shown by Rowitz and Levy to have changed in Chicago so that the distribution in the 1960s approximated a normal curve. Dunham states that high residential mobility and changes in the character and structure of America’s metropolises between the late 1930s and the late 1960s could account for changing patterns. He concludes: “It can be inferred that if the rate patterns of the various mental diseases shift over time, a selective process is at work which distributes persons who have schizophrenia in certain definite ways within the social system.”²¹

Faris and Dunham’s initial study supplied a tremendous impetus for the investigation of the social correlates of mental illness. Their original method, mapping the residential distribution of hospitalized mental patients, was superseded by more refined investigations of the relationship between lower socioeconomic status (SES) and higher rates of mental disorder. These researches were designed to evaluate the possible influence of social, occupational, and intergenerational mobility on the production of mental disorders. American studies showed a relationship between

lower SES and higher rates of mental disorder, but a few studies from other nations with different social and health care systems did not demonstrate this relationship.

New Haven—1958 (“Social Class and Mental Illness”)

In an effort to “bridge the gap between the theoretical positions represented by sociologists and psychiatrists,” Hollingshead and Redlich²² undertook a comprehensive study of mental patients who were receiving treatment in the Greater New Haven area. Their two major research questions were: “(1) Is mental illness related to class in our society? (2) Does a psychiatric patient’s position in the status system affect how he is treated for his illness?”

A patient was defined as any person receiving inpatient or outpatient psychiatric treatment from private practitioners, agencies, and hospitals between May 31 and December 1, 1950. Class status was determined by using Hollingshead’s index of social position, which provided a composite class rating (I = high, V = low) for subjects based on their rankings on three subscales: (1) ecological area of residence, (2) occupation, and (3) education. To obtain social data about the community, the investigators interviewed a stratified random sample of 3,559 households.

The first major finding was a definite inverse relationship between social-class status and being a psychiatric patient. Table 9²³ shows the total prevalence rates for mental disorders per 100,000. Especially the prevalence, but also the incidence of mental disorder (as measured by rates-under-treatment) was much higher in the lower than in the upper social classes. And, the greatest difference was between the two lowest classes, IV and V.

The second major finding was that types of mental illness vary with class position. Figure 7²⁴ shows that in Classes I and II about 35% of the cases were diagnosed psychotic and 65% neurotic in contrast to Class V in which about 90% were diagnosed psychotic and 10% neurotic.

Third, Hollingshead and Redlich found “real differences in *where*, *how*, and *how long* persons in [different social] classes have been cared for

Table 9. Mental Disorder and Social Class (Prevalence) Rates per 100,000

Class I-II	553
Class III	528
Class IV	665
Class V	1,668

Adapted from *Social Class and Mental Illness: A Community Study* by Hollingshead and Redlich.²³ Copyright © 1958 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

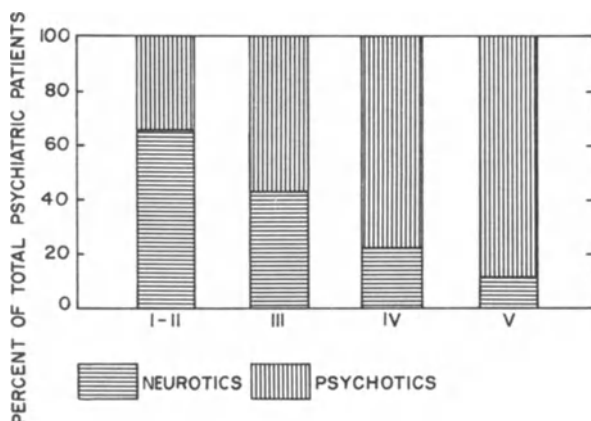
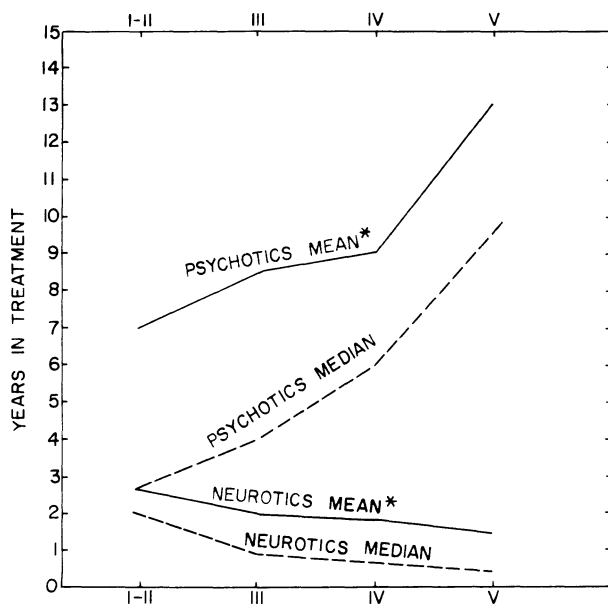


Figure 7. Percentage of neurotics and psychotics among total psychiatric patients—by class (age and sex adjusted). (From *Social Class and Mental Illness: A Community Study* by Hollingshead and Redlich.²⁴ Copyright © 1958 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.)

by psychiatrists.”²⁵ Almost all Class I-II patients with neuroses were treated by private practitioners or were in private hospitals, whereas almost all Class V patients with neuroses were treated in public clinics, military, Veterans Administration Hospitals, or state hospitals.²⁶ Similar relationships were found for *where* the psychotic patients received care; about 90% of those in Classes I-II received care from private practitioners or in private hospitals, and few were in state hospitals. In contrast, the great majority of psychotic patients in Classes IV and V were treated in state hospitals. *How* patients were treated also followed class lines. Many Class I-II patients, both neurotics and psychotics, received psychotherapies; in contrast, many Class IV and V patients received organic therapies or custodial care. Figure 8²⁷ shows that *how long* patients were treated varied with social-class status. The median length of treatment for neurotic patients in Classes I-II was almost 3 years, but for Class V neurotics it was about 18 months. But 50% of psychotic patients (the median) in Classes I and II received treatment for less than 3 years, while the median length of treatment for Class V psychotics was about 10 years.

Hollingshead and Redlich’s *Social Class and Mental Illness* received international attention. It focused concern on relationships between social class and the prevalence of mental disorder at a time in history when our society was ready to receive such information. But the investigation had one serious limitation that other researchers were overcoming. The data were obtained from identified patients and, thus, it was hazardous to generalize the findings to the population at large. Earlier studies had already demonstrated that significant numbers of the mentally ill never received treatment and were not included as cases. Therefore, Hollingshead and Redlich could not draw any scientific conclusions about the



*MEAN YEARS IN TREATMENT ARE SIGNIFICANT, $p < 0.001$.

Figure 8. Mean and median number of years neurotic and psychotic patients have been in their present course of treatment—by class. (From *Social Class and Mental Illness: A Community Study*, by Hollingshead and Redlich.²⁷ Copyright © 1958 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.)

influence of social forces on the production of mental disorder. But no one could question their finding that “where, how, and how long” patients received care was correlated with social-class position. This result pointed to the inadequacies of services and facilities for the poor and prompted governmental measures to increase the number of professional caregivers by providing stipends for education in the mental health disciplines and later to establish Community Mental Health Centers.

Midtown Manhattan—1950–1963

This extensive study of mental health in New York City is one of the largest and most ambitious investigations undertaken in the United States.^{28–30} Srole’s³¹ recent report of a 20-year follow-up, which will be discussed later, increases this study’s importance tremendously. The research reflects the investigators’ social psychiatric orientation and their efforts to examine the basic concerns in this field. According to Thomas A. C. Rennie, who conceived the study but died while it was in progress, the major issues were related to: (1) the public’s lack of understanding about mental illness; (2) the determination of resources needed for treating

mental health problems in the community; (3) the development of preventive psychiatry, and (4) "an evaluation of forces within the social environment which contribute to the personal dilemma."³²

The study was planned as a cross-sectional investigation to ascertain the prevalence of mental illness on May 1, 1953 (point prevalence) and to estimate incidence for the year May 2, 1953, through May 1, 1954. Because of the enormous diversity of America's greatest metropolis, the investigators selected a discrete area which Srole states "fits the specifications of heterogeneous high density residential areas that sociologists have designated as 'gold coast and slum' . . . adjoining the central business section in other metropolitan cities."³³

From the Census reports, the investigators found that there were 110,000 persons aged 20–59 in the study area. They decided upon a probability sampling procedure, and first drew a systematic sample of blocks in the area, then a sample of the dwellings in those blocks, and finally a sample of the adults (respondents) living in those dwellings. Each respondent was interviewed in his home by a trained interviewer using a structured interview schedule designed to elicit essential demographic data, sociocultural information, facts about parents and childhood, and responses to items about mental and physical health.

The interview data were summarized and then rated by two psychiatrists for degree of symptom formation and interference with social functioning. For Mental Health Rating I, the psychiatrists had access to information about "psychiatric symptoms and mental and emotional attitudes to society and health," as well as age and marital status.³⁴ For the more holistic Mental Health Rating II, the psychiatrists had all the information used in the first rating plus information about "social functioning." The two ratings differed slightly; in Mental Health Rating II, 23.4% were rated impaired—5% more than in Mental Health Rating I. The differences can be noted by comparing the percentages rated "mild symptoms" in Ratings I and II; the percentages rated "well" were about the same. Langner and Michael state that they are "fairly confident that at least 23.4 percent exhibit some impairment in life functioning, for all the evidence indicates that our methods tended to *underestimate* the level of psychopathology. Dr. Rennie felt that "the Impaired category . . . corresponded roughly to the impairment range of patients he had seen."³⁵ Table 10³⁵ shows the results of the two ratings. The report that only 18.5% of the respondents were "well" and that 23.4% were "impaired" received national attention and was viewed with concern, if not alarm.

The distribution by diagnostic types (Gross Typology) was probable psychotic 8.3%, probable neurotic-psychosomatic 5.7%, probable neurotic trait 16.0%, probable personality trait 9.8%, and probable organic 1.7%. Only 18.0% were "well" according to this rating.

Table 10. Distribution of 1660 Respondents According to Severity of Symptoms and Associated Impairment

Category	Mental health ratings	Percent rating I	Percent rating II
Well	0-1	18.8	18.5
Mild symptoms	2-3	41.6	36.3
Moderate symptoms	4-5	21.3	21.8
Impaired	6-12	18.3	23.4
Marked symptoms	6-7	10.7	13.2
Severe symptoms	8-9	6.2	7.5
Incapacitated	10-12	1.4	2.7
Total number of cases (N = 100%)		1660	1660

Adapted with permission of Macmillan Publishing Co., Inc. from *Life Stress and Mental Health: The Midtown Manhattan Study*, Vol. 2 by Langner and Michael.³⁵ Copyright © 1963 by The Free Press of Glencoe, a Division of The Macmillan Company.

Four diagnostic types were significantly associated with low SES (probable: organic, psychotic, personality trait, and neurotic trait). One type, the probable neurotic, was associated with high SES. And two types, probable psychosomatic and probable neurotic-psychosomatic, were not associated with SES levels. Being rated "well" was significantly associated with high SES.³⁶

Thus, one of the most significant findings, and one that is consistent with other American investigators' reports, was the inverse relationship between the respondents' SES and impairment: 12.5% of those in the highest of the six SES groups were rated impaired in contrast to 47.3% of those in the lowest SES group. Because mental illness can produce impairment of social functioning, a respondent's SES could be the result of his illness and not an independent variable. Therefore, the investigators looked at the SES of the respondents' fathers, since it is unlikely that a father's SES would be affected by a respondent's illness. The percentage impaired increased as the fathers' SES decreased; for example, in the group whose fathers were in the highest status, 17.5% were impaired, whereas in the group whose fathers were in the lowest status, 32.7% were impaired.³⁷

Other major findings were:

1. Impairment rates increased with advancing age.
2. No sex differences were found in the overall impairment ratings, but more women than men reported psychoneurotic and psychophysiologic symptoms.
3. Divorced and separated men and women had higher impairment rates than those with other marital statuses, and single men had higher rates than did single women when age was held constant.

4. Male respondents who showed upward occupational mobility, compared with their fathers, were the healthiest; the nonmobile were less healthy; and the downwardly mobile were the most impaired.

5. Those respondents who were immigrants or first-generation Americans had higher rates of impairment than did second-, third-, or fourth-generation Americans (a direct relationship between closeness to immigrant status and impairment rates).

6. Protestants and Catholics had similar impairment rates, and Jews had a somewhat lower rate but no major differences were found.

7. Differences that were observed for the various ethnic groups tended to disappear when rates were standardized for parental SES.

Although the investigators did not present the results of their patient census based upon records from hospitals, clinics, and private therapists, they stated that “the treated ill are in many respects radically different from the untreated ill in Midtown. The treated ill are wealthier, of later generations, have more positive attitudes toward doctors and psychiatrists, are better educated, and are probably of very different diagnostic composition.”³⁸ The investigators note, for example, that both paranoid schizophrenics and psychopaths are not likely to get into treatment unless they cause social disturbances, since some degree of withdrawal or even dissociation is tolerated in certain social strata.

Conceptual Basis: The investigators proposed a framework for thinking about “*how* the social environment affects or is related to mental health.” They explain that the social environment “contains both pathogenic (noxious) and eugenic factors,” but that the much more elusive nature of the eugenic factors has led to explanations primarily concerned with the noxious.³⁹

Their stress-strain model was derived from Selye’s General Theory of Adaptation. Using a metaphor from our technological era, the investigators suggest an essentially mechanical relationship between man and environment. They call the noxious or potentially noxious environmental factors “stress”; the reaction to *stress* is termed *strain*. They analogize to a situation in engineering, in which a structure is tested by subjecting it to induced stress (e.g., compression). Stress may deform the object; this reaction is strain. Then, in reference to humans, they say: “We know that personality, the sum of a person’s relatively reliable ways of acting and reacting, can become deformed because of stress. That deformation, that strain, we may call mental disorder.”⁴⁰ Langner and Michael recognize the limitations of this model: “People are not wooden beams or iron bars.”⁴¹ Instead, humans are unpredictable; they symbolize, attach meanings to objects, situations, etc., and react to these meanings or ideas. “It is primarily this capacity of man to symbolize that turns a similar event into a catastrophe for one and a blessing for the other. If ‘one man’s meat is another man’s poison,’ how can we define stress in terms of the stimulus

rather than the reaction?"⁴² Also, many factors mediate stress and strain—constitutional and cumulative physical, emotional, and social experiences, and the age at which the stress is experienced (stresses accumulate with advancing age)—and determine whether the outcome for a given individual will be health or illness. For example, SES can be viewed either as a potentially stressful factor (e.g., the constraints of poverty), or as one that mediates other types of stress and strain (e.g., the options of affluence).

Within these limitations, the model was developed. The investigators recognized the difficulties to be faced in determining which variables are independent, component or explanatory, or dependent. Demographic variables were divided into two major classes: (1) the independent or unidirectional (age, sex, parents' characteristics such as their SES and ethnic background, etc.), and (2) the reciprocal or two-directional (marital status, subject's SES and religious affiliation). Component or explanatory variables also were divided into: (1) independent or unidirectional (parents' poor physical or mental health, childhood poor physical health, broken homes, disagreements with parents, etc.), and (2) reciprocal or two-directional (adult poor physical health, worries about work or SES, etc.). The dependent variables were the Mental Health Ratings, the Gross Typology, and Symptom Group classification.⁴³

Thus, in terms of the stress-strain model, mental illness or, more simply, symptoms and impairments are seen as reactions to noxious environmental forces. This is a useful frame of reference, especially for the study of fairly large populations, i.e., symptoms would be most common in the groups that are under the most stress, subject, of course, to elaborate mediating factors.

Stress and Impairment: To evaluate the stress-strain model, the investigators compiled a stress score that could be compared with impairment ratings to predict mental health risk. The stress score consisted of ten childhood and adult factors, such as childhood economic deprivation, childhood broken homes, parents' characters negatively perceived, adult poor physical health, socioeconomic worries, poor interpersonal affiliations, etc. The degree of association between the stress factors and the Mental Health Rating was measured by the ridity (\bar{R}) and termed the mental health risk. As Langner explains succinctly, "the ridity transforms the mental health classification into a number ranging from zero to one. This allows a direct interpretation in terms of probability. The average Midtowner had a ridity of .50, because 50% of the population was better off with respect to mental health than he was, and 50% was worse off. The larger the ridity, then, the worse the average mental health risk of the subgroup involved."⁴⁴ The association between stress scores and ratings, as measured by the ridity, applies to groups, not to individuals.

The investigators found that the "*sheer number of [stress] factors reported is the most efficient method of predicting mental health risk*"

(Italics ours).⁴⁵ No one stress factor by itself was particularly significant, but a hypothetical person reporting three factors had a higher risk (greater risk) than a person reporting one or two factors. Furthermore, the number of stress factors was more important than the particular combinations of factors. As Langner explains, “the risk of impairment seems to bear a linear, or straight line, relationship to the number of stresses. There is no point, no particular number of stresses, at which the slope of the line suddenly becomes very steep. . . . On the average, we can say the greater the life stress, the greater the deformation or disturbance of the human material being put to the test”⁴⁶ (see Fig. 9⁴⁷).

The investigators then sought to determine the relationships among risk, stress, and SES. The risk varied significantly among the three SES groups: Low SES had a mental health risk of .59, middle SES .50, and high SES .41. But the average child-adult combined stress score (range zero to 18) varied little among the SES groups—low 5.7, mid 5.3, high 4.7. Analyses of stress scores and risk within each SES group showed, however, that when the life experiences (stresses) were held constant the risk was highest for the low SES group, e.g., the risks for those with stress scores of 10 to 18 were .68 for the high SES group, .67 for the middle, and .83 for the low SES group. When the stress score was zero, the risk was

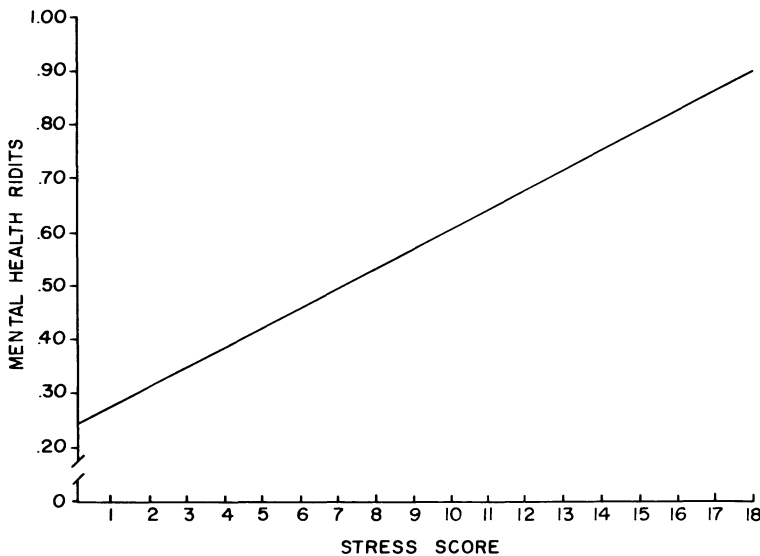


Figure 9. Average mental health (MH I) of respondents, according to childhood-adult combined stress score. (Adapted with permission of Macmillan Publishing Co., Inc. from *Life Stress and Mental Health: The Midtown Manhattan Study*, Vol. 2 by T. S. Langner and S. T. Michael. Copyright © 1963 by The Free Press of Glencoe, a Division of The Macmillan Company⁴⁷).

almost identical in the three SES groups, but as the stress score increased, the risk increased much more sharply for the low SES group than for the other two groups.⁴⁸ However, Langner concludes: "There is a residual mental health variation between the socioeconomic groups which cannot be accounted for by the stress factors alone."⁴⁹

Langner lists five possibilities that might account for the unexplained variance shown by their analyses of stress scores, impairment risks, and SES. It is possible that: (1) residual stress existed that was not evaluated; (2) there were unknown problems with measuring stress; (3) low SES respondents have less resistant personalities, suffer more from the impact of stress, and are less able to recover from it than are higher SES respondents; (4) high SES respondents may be "cushioned by wealth, education, and other favorable circumstances"; and (5) low SES respondents "may employ more impairing adaptive devices," such as the psychotic adaptations, than do the high SES respondents who tend to utilize neurotic adaptations.⁵⁰ Thus, the results obtained from analyzing the risk, stress, and SES relationships indicate that the association between lower socioeconomic status and higher rates for mental illness have not been completely explained and thus sharpens the debate—social causation versus social selection.

Discussion: The major criticisms of the Midtown Manhattan Study concern the methodology; for example, it is possible, as Crandell and Dohrenwend⁵¹ point out, that there was lack of discrimination between the symptoms of physical and mental illnesses. Some who were rated impaired might have been suffering primarily from physical illnesses, not mental disorders. Other questions relate to possible inaccuracies in the self-report of physical and mental symptomatology, the extent of both response bias of several types and interviewer bias, and doubts about the reliability of the rating process.

Despite some limitations, the Midtown Manhattan Study made significant contributions to psychiatric epidemiology. The high impairment rates and the frequency of symptomatic distress (only 18.5% were rated "well") heightened public concern about the "pace of modern life," particularly in the cities, reminiscent of Daniel H. Tuke's⁵² comments a century earlier. Governmental planners and other leaders responsible for the nation's health programs viewed the findings as evidence that improved and increased services were a necessity. Psychiatric epidemiologists shared these concerns and were stimulated to evaluate the results as thoroughly as possible by further research. They have attempted to use refined procedures for examining issues that were not clarified, particularly the associations between lower SES and higher rates of mental illness.

From this study, Langner's 22-item scale was developed; through the years it has been tested for validity and reliability and has been used in numerous epidemiologic investigations and transcultural studies. Also, the

work with stressful life experiences provided a foundation for continued research on the role of stressful life events and their influence on health and illness, a subject of growing importance in social psychiatry in the 1970s. "Life Events" scales are now being used extensively to predict risk of physical and psychosomatic illnesses as well as of the mental disorders (see Chapter 14).

Finally, this important study is being continued. In the past few years, Leo Srole³¹ has conducted an intensive 20-year follow-up. It is anticipated that this work will make a genuine contribution to our knowledge of social processes and mental illness during the past two decades in our history, when urban America has struggled with the turbulence of accelerated social change. (See Chapter 12 for a discussion of some of the preliminary results of the Midtown Restudy.)

Low SES and High Rates of Mental Disorder

The magnitude of the association between lower SES and higher rates of mental disorder was demonstrated by Hollingshead and Redlich's *Social Class and Mental Illness* as well as by the *Midtown Manhattan Study*. Although these two major investigations examined different populations and used different methodologies, no one could doubt that low SES was a social correlate of mental illness in the United States. In their 1969 review of 44 prevalence studies, Dohrenwend and Dohrenwend⁵³ state that in psychiatric epidemiology "the most consistent result is an inverse relationship between social class and reported rates of psychological disorder." However, this association lacks a scientific explanation. Such an explanation might also shed light on the nature of mental illness, regardless of SES. Possible explanations are:

1. That the increased frequency of mental illness in lower social-class groups is a consequence of living in poverty and deprivation, particularly in disintegrated communities where stress, social isolation, and impaired communication are commonplace, and coping resources are limited for personal and other reasons (social causation);

2. That the association is, to a significant extent, an artifact produced by complex social processes involving social election: downward drift, the more active self-segregation into low socioeconomic environments, and the pervasive dynamism in American society—social mobility—that is influenced by familial interactions, values, and aspirations (social selection theory);

3. That genetic factors explain the association between low SES and high rates of mental illness in view of the tendency for persons to marry within their same social class (assortative mating). Thus, many low SES persons could be handicapped by a hereditary predisposition—the necessary but not always the sufficient cause of illness—which increases an

individual's vulnerability to mental disorder when he is battered by socioeconomic deprivation and/or stressful life events.

Social Causation and Social Selection

As we have seen, Faris and Dunham's² findings in Chicago shortly before World War II provoked the social causation-social selection controversy. At first, they used a social causation thesis to explain their findings; the deprivations of poverty and living in disorganized areas are conducive to seclusion, social isolation, and impaired communication, thus leading to mental disorder. Hare's^{10,11} work in Bristol, England, tended to support a similar "breeder hypothesis" (see pp. 160-161). Later, the Midtown Manhattan Study²⁸⁻³¹ reported that low SES respondents were more vulnerable to stress and had fewer coping devices than the middle or upper SES groups. Recently, Kohn⁵⁴ has asserted that the social causation hypothesis is the most straightforward explanation of the finding that schizophrenia is most common in the lower social class (see Chapter 14).

But earlier, Myerson⁹ raised the possibility that the impairments of mental illness led schizophrenics to *drift* down the social scale. Hare also^{10, 11} believed that many individuals with schizoid personality disorders or incipient schizophrenic illnesses *segregated* themselves in lodging houses in the poor sections of cities to secure some degree of social isolation—a factor in the development of schizophrenia. Owen⁵⁵ in 1941 and Buck *et al.*,⁵⁶ in 1955 suggested the "differential tolerance" hypothesis, which postulates that various communities have different levels of tolerance for schizophrenics. Many schizophrenics, therefore, move into areas that are more tolerant of idiosyncratic behavior and conducive to isolation. Owen points out that "a kind of behavior which would be indefinitely tolerated in an area of social isolation could well be thought insane in an area of family dwelling and neighborhood participation." Clausen and Kohn's¹⁴ "small city" hypothesis suggested that geographic schizophrenic rate differentials could be found only after a city attained a certain size, since small cities simply did not contain "collecting areas" in which the mentally ill could find suitable lodgings. Also, there is less isolation in small, stable cities—"everybody knows everybody." The components of the theory of social selection developed from studies of the geographic distribution of schizophrenics. A more functional component was added by Clark's⁵⁷ 1948 finding that the rate for schizophrenia diminished as occupational status increased. Other studies, such as "Social Class and Mental Illness" and "Midtown Manhattan," were confirmatory. To Warren Dunham's credit as a scientist, for 35 years since the results of the original Chicago studies were published, he has investigated variables that might explain his original findings more satisfactorily than the social causation hypothesis first offered. The scientist's initial task, after he has

observed a significant relationship, is to disprove it; therefore, he replicates the study. His second task is to look for further explanatory variables that might reveal the nature of the original findings more precisely and more completely. Dunham's²⁰ later work in Detroit showed that both geographic and social (intergenerational) mobility were significant factors requiring evaluation before the high rates of schizophrenia-low SES association could be explained.

Thus, the theory of social selection evolved. Social mobility, the movement of persons and/or groups up and down the social ladder between generations and during one's lifetime is at the heart of the theory. The theory of social selection is analogous to the Darwinian theory of natural selection. The fittest, genetically endowed or favored by circumstance, rise while the less fit slide down the social scale. This mobility is associated with mental illness in various ways. On one hand, downward mobility (drift, voluntary segregation, etc.) may be the result of mental illness or may allow for life styles (e.g., social isolation and lack of support systems) that potentiate mental illness. On the other hand, upward mobility—an aspect of the "American Dream"—with its attendant stresses, possible disappointments, and elusive goals, is associated with mental illness to a lesser extent. But some psychoneuroses, e.g., obsessive-compulsive and depressive, and the psychosomatic illnesses, can be the "price of success."

Drift: Hollingshead and Redlich could not find evidence that a significant number of those in the lower social strata had come from higher social classes. These investigators⁵⁸ used four approaches to evaluate the drift hypothesis and relationships between social mobility and mental illness.

First, based on others' findings that immigrants had higher rates of schizophrenia than the native-born, they compared the nativity of their patients and that of the population of the community. Rates for the foreign-born were not significantly higher than the rates for the native-born—the results did not show a linkage between international migration and a greater prevalence of schizophrenia.

Second, they examined geographic mobility by ascertaining the number of patients who had been born and reared outside the New Haven area but within the United States. A smaller percentage of Class I-II (high) than Class V (low) patients had been lifelong residents of New Haven—evidence against "drift" which hypothesizes that a significant proportion of the many lower-class patients lead lives characterized by frequent moves, fragile social support systems, and relative isolation.

Third, they looked closely at the residential histories of the patients who had lived in New Haven all their lives. Most Class I-II patients had always lived in the better residential areas and most Class V patients had always lived in the slums—another result that contradicts the drift hypothesis.

The fourth approach evaluated possible class differences between the patient's family of orientation (family during childhood and adolescence) and his present class position. Of 847 patients, only 1.3% were in lower and 4.4% were in higher class positions than their families of orientation; in 91% the social-class position was the same for both the patient and his family of orientation. Hollingshead and Redlich conclude that "neither geographic transiency nor downward social mobility can account for the sharp differences in the distribution of schizophrenic patients from one class to another."⁵⁹

In 1963 Goldberg and Morrison⁶⁰ conducted a major study of the "drift" hypothesis. First, they obtained data on 509 males, aged 25–34 years, admitted to mental hospitals in England and Wales. A disproportionately high percentage of patients were in the lowest social class. The investigators then compared the social-class distribution of the patients' fathers (based on occupation at the time of the patient's birth) with 1931 census data on employed men aged 29–44. The social-class distribution of the patients' fathers was much like that of the general population; thus, it appeared that the schizophrenic sons had at some time drifted down the social scale.

To complement that documentary work, Goldberg and Morrison then evaluated the work histories of 94 male schizophrenic patients and their relatives. The results showed a decline in social class for the patients compared with their fathers. Furthermore, the investigators showed that "occupational drift" had occurred within the patients' own educational and work careers; often the deterioration began in adolescence. "Drift" was most apparent in those patients who were at one time in either the highest or the lowest classes, whereas those who had been in Class III jobs, which require "some degree of repetitive skill," showed less evidence of either intergenerational or personal drift. Goldberg and Morrison conclude: "These findings suggest that gross socioeconomic deprivation is unlikely to be a major aetiological significance in schizophrenia. On the other hand, occupational factors, yet to be defined clearly, appear to exert some influence on the course of the disease."

Goldberg and Morrison discuss some possible reasons why their results conflict with those of Hollingshead and Redlich's New Haven Study in which 91% of the schizophrenic patients were found to be in the same social class as their families. Goldberg and Morrison emphasize that they used occupation as the index of social-class status, whereas Hollingshead and Redlich included place of residence and educational level as well. Schizophrenic patients living in their parents' homes might have been rated as belonging to higher social classes—closer to those of their parents—than if judged by occupation alone. Further, there were some other differences in the social-class distributions of the two populations.

Goldberg and Morrison's findings offer provocative evidence in favor

of the drift hypothesis; however, it is difficult to generalize about such a major issue on the basis of results from a limited number of male patients. The authors noted the need for retrospective and prospective studies of the occupational histories of young people in the general population and of young schizophrenic students with high occupational potential. Their finding that patients in the skilled and semiskilled trades were better able to maintain their jobs than were those of higher or lower social classes has practical importance for occupational placement in the rehabilitation of schizophrenic patients.

The Midtown Manhattan Study looked at aspects of the social selection theory to find an explanation for the strong association between high rates of impairment and low SES. Srole and Langner view the status system as "an apparatus that differentially sows, reaps, sifts, and redistributes the community's crops of mental morbidity and of sound personalities."⁶¹ To determine intergenerational social mobility, the investigators compared the father's socioeconomic status (based on occupation and education when the respondent was a child) with the respondent's present status (based on present occupation, education, rent, and family income). Fifty-five percent of the respondents were nonmobile; of the remainder, equal percentages were upwardly and downwardly mobile. Impairment rates were 13.6% for the upwardly mobile, 23.6% for the nonmobile, and 30.1% for the downwardly mobile. Certain *types* of mental disturbances, as well as rates, were associated with social mobility. For example, 12.8% of the downwardly mobile were rated "probable psychotic," in contrast to 7.3% of the nonmobile and only 5.9% of the upward mobile. And 26.1% of the downwardly mobile were rated "probable neurotic," in contrast to 36.6% of the nonmobile, and 37.3% of the upwardly mobile. The mental health hazards of downward mobility are emphasized by the detailed analyses which show, in summary, that the downwardly mobile are prone to character disorders and alcoholism, whereas the upwardly mobile are prone to be obsessive-compulsive.⁶² Thus, the Midtown Manhattan Study did not provide support for the drift hypothesis, at least in regard to intergenerational mobility. Generally, impairment rates were a function of the respondents' *present* SES, regardless of intergenerational mobility.

In a study using the Monroe County register, Turner and Wagenfeld⁶³ reported in 1967 that rates of first admissions for schizophrenia were disproportionately high for both low occupational status patients and for those whose fathers had low occupational status. But these were not necessarily the same patients, since some (35%) had achieved higher status than their fathers, and others (36%) had lower statuses. As a group, the patients had only a small net decline on the seven-point occupational scale, whereas indices showed that the level for the general population had risen. Thus, the schizophrenics had lagged behind the general population—not rising above their fathers' levels—instead of drifting down. Kohn⁶⁴ believes

that the impairments of incipient schizophrenia were possibly responsible for the patients' failures to surpass their fathers' occupational levels. Earlier generations might not have achieved as high occupational statuses as possible and might have been genetically disposed groups, but this possibility is difficult to evaluate.

Thus, some studies provided evidence for the drift hypothesis, while others discounted its significance as a process that substantially influenced the high frequency of mental disorders in lower SES groups. In a 1946 article, Dunham dismissed the explanatory importance of the drift hypothesis: "when we have a sounder knowledge of both ecological processes and schizophrenic etiology, we shall see the 'drift' hypothesis for what it really is, namely, an attempt to annihilate the significance of the ecological findings in much the same fashion that certain persons during the thirties tried to dismiss the depression by explaining the loss of a job on the basis of a person's neurotic makeup or emotional instability."⁶⁵ Studies by (1) Morris Schwartz⁶⁶ in Chicago in 1946, (2) Lystad⁶⁷ in New Orleans (who reported that 45.7% of schizophrenics were downwardly mobile), (3) Turner and Wagenfeld's⁶³ 1967 analysis of the Rochester register, (4) Hare^{10, 11} in Bristol in 1956, and (5) Goldberg and Morrison⁶⁰ in 1963 in Great Britain provide some direct and indirect evidence for the drift hypothesis, but no support for the hypothesis could be found by (1) Clausen and Kohn's¹⁴ work in Hagerstown in the 1950s, (2) the Midtown Manhattan Study^{28, 30, 61} in the 1950s, (3) Hollingshead and Redlich's⁵⁸ New Haven Study in the 1950s, and (4) Dunham's²⁰ 1964 Detroit Study. Recently, Kohn⁶⁸ has stated: "the weight of evidence lies against the drift hypothesis providing a sufficient explanation of the class-schizophrenic relationship."

In summary, the theory of social selection contains a number of complex and perhaps interacting factors that explain, in part, the association between higher rates of schizophrenia and lower SES. These include drift, voluntary segregation, differential tolerance, size of city, intergenerational social mobility, the increasing tendency toward geographic mobility, and migration. Moreover, since 1950 Western society has been in a period of rapid social change as indicated, for example, by occupational redistribution. And both federal power and technological achievements (particularly communications) have exerted pervasive influences on the social structure and the character of modern life.

The theory of social selection does not preclude the possibility of social causation, but attempts to weave it and other variables (causal, distorting, suppressing, and confounding) into a chain of events and conditions that explain why some mental disorders are inversely related to social-class status. The social causation hypothesis holds that the strong associations found between lower SES and higher rates of mental illness indicate that being disadvantaged, socially and economically, leads to

mental disorder. But advocates of broader social selection theories point out that correlation is not synonymous with causation and maintain that the correlations are largely the result of elaborate sifting and sorting processes within society.

Labeling

Another explanation for the relationship between low SES and mental disorders involves the possibility that psychiatrists are more likely to label lower- than middle- or upper-class persons as “schizophrenics” and to hospitalize them. Many psychiatrists and other mental health professionals derive from or achieve middle-class status with its orientations that influence their evaluations of lower-class patients. Furthermore, the social distance between the psychiatrist and the lower-class patient may be so great that the psychiatrist has difficulty interpreting the patient’s symptoms and behavior; consequently, the patient may be labeled “schizophrenic,” thus increasing the number of lower-class patients counted as being mentally ill. Labeling can continue to exert a deleterious effect on the person since he incorporates the sense of illness and deficiency into his self-concept. And his behavior may then reflect both the flawed self-concept and the expectations of those who labeled him.

Migration and Mental Illness

A modern social selection theory of the distribution of mental illness includes the influence of migration. The extensive movement of peoples has been a prominent feature of twentieth-century life. Zwingmann and Pfister-Ammende⁶⁹ state: “During the first half of the 20th century more than 100 million people of the Northern hemisphere left their homeland or were forcefully separated from it; they migrated and they were displaced or deported, they fled from persecution.” And, since World War II, widespread migration within one’s country and emigration have occurred throughout the world.

Until immigration was restricted by the *Acts* of 1921 and 1924, about 40 million immigrants entered the United States. In 1855 Jarvis⁷⁰ noted that the foreign population in Massachusetts was increasing rapidly; it represented 20% of the total population of the state. The ratio of the mentally ill was higher in the foreign population than in the native population, but mental deficiency was much less common among the foreign- than the native-born. In 1935 Malzberg⁷¹ reported that rates of admission to New York institutions were higher for immigrants than for the native-born. Later, in 1956, he and Lee⁷² found that migrants living in “non-metropolitan zones,” like those living in metropolitan areas, had higher age-standardized admission rates than nonmigrants.

Minnesota-Norway—1932: An early study of the mental health of immigrants that used sophisticated procedures, particularly control groups, was conducted by Ödegaard.⁷³ In 1932 he compared the first-admission rates of three groups: (1) Norwegian-born immigrants in Minnesota, (2) native-born Minnesotans, and (3) Norwegians of Norway. The first-admission rates of the immigrants were substantially higher than those of either the native Minnesotans or the Norwegians. Rates were standardized to exclude errors caused by differences in age and sex distributions.

Ödegaard concluded that the higher frequency of mental illness among the immigrants could be the result of either the mental and physical hardships of immigration or of the immigrants' inherently greater susceptibility—those who left Norway were more likely to have had difficulty with social adjustment in their home country than those who had not emigrated. He attributed the extremely higher rates of senile and arteriosclerotic conditions among the immigrants than among the Norwegians (a ratio of 7:1) to the stress of immigrant life, the more rapid pace in America, and the relative absence of protective social systems. Finding that arteriosclerotic and senile psychoses occurred at a much younger age among the immigrants than among the Norwegians was considered to be evidence of the influential role of stressful factors associated with immigration.

But Ödegaard believed that the immigrants' much higher rate of schizophrenia (twice that of the Norwegians) was attributable to constitutional factors, rather than to the hardships of immigrant life. Reviews of the life histories of immigrant schizophrenic patients revealed that often social difficulties (or incipient psychosis) were the impetus for emigration. Thus, this comparative study showed that environmental factors—"the physical and mental strain of immigrant life"—were responsible for the higher frequency of certain types of mental illness, such as cerebral arteriosclerosis, but that constitutional factors were probably responsible for the higher rates of schizophrenia in the immigrant population in Minnesota. Ödegaard's later work disclosed that reemigrants to Norway also had a very high first-admission rate—1,938 per million compared with 603 per million for the native population.^{74, 75}

Mental Illness in Immigrants: In his reappraisal of "Migration and the Major Mental Disorders," H. B. M. Murphy⁷⁶ presents three postulates:

1. That persons with incipient mental disorders who are unable to adjust to conditions of life in their homeland tend to migrate.
2. That the hardships of migration precipitate mental disorders.
3. That migration, as a unitary variable, is not related directly to increased mental illness rates, but that it is one of several factors (age, social class, and culture conflict) that combine to produce higher rates.

As we have seen, Jarvis,⁷⁰ Malzberg,⁷¹ and Ödegaard⁷³ found that admission rates to mental institutions were higher for immigrants to the United States than for the native-born. Studies on immigration to countries

other than the United States, however, supply inconsistent results. For example, Astrup and Ödegaard⁷⁷ found that Swedes and Danes moving into rural areas in Norway had lower first-admission hospital rates than did Norwegian nonmigrants in the same areas. In contrast, Daumezon, Champion, and Champion-Bassett⁷⁸ found that North African immigrants to Paris had higher rates for hospitalization than did the general population. Eitinger's⁷⁹ study of refugee immigrants to Norway after World War II and Murphy's⁸⁰ study of World War II refugees to Britain showed that they had high rates of mental hospitalization, but these findings should be interpreted cautiously since the refugees had been subject to the stress of persecution and deportation. Also, Kaila⁸¹ found that immigrant refugees in Finland did not have significantly higher mental illness rates than the general population.

With its birth as a nation after World War II, Israel opened its doors to all Jews. Murphy's⁷⁶ review of studies of these immigrants indicates that those from Asia and Africa had higher mental hospitalization rates than the local-born Jewish population. However, the Jewish immigrants from Europe (whose social status was generally about the same as that of the local Jewish population) did not have higher hospitalization rates than the native Israelis.

In "The Low Rate of Mental Hospitalization Shown by Immigrants to Canada" Murphy⁸² found that in the census years 1958 and 1961 the immigrants had lower rates of mental hospitalization than the native-born Canadians. But immigrants to Australia had higher hospitalization rates than native-born Australians. Murphy concludes that the data present conflicting results and that the mental health fate of an immigrant may be a function of group membership. Immigrants to the United States and Australia were brought into a "melting pot," whereas immigrants to Canada, for example, were able to maintain their ethnic identities. Moreover, Australia and the United States tend to emphasize "rugged individualism" to a much greater extent than does Canada. He states that the data "raise the question of whether or not some of the apparent associations between migration and mental disorder which researchers in the United States have found is a *product of the cultural setting within which the migration is taking place* [*Italics ours*]."⁸³

From a cultural perspective, finding that mental illness rates were lower for immigrants in Canada than for immigrants in the United States might be explained in part by the fact that immigrants to Canada after World War II had come mainly from urban settings in Europe and generally had moved to urban settings in Canada. (However, even immigrants to rural areas of Canada had lower rates than the native-born.) The size of the subculture to which immigrants belong may be another major factor influencing hospitalization rates. And in the United States the large

population, the dominance of the core culture, and the "melting pot" ethos may put greater pressures on immigrants.

Migration Within the United States: The movement of people within this country has been a major feature on the American scene. Increasing geographic mobility is associated with the rural-urban shift and the revolutionary developments in transportation and communications. In 1900, when the population of the United States was 76 million, 41% lived in standard metropolitan areas, and of this group 70% lived in the center cities. In 1960, when the population was almost 180 million, 63% lived in standard metropolitan areas and 51.4% lived in the center cities. Although the relative percentage of those living in the center cities has decreased, the absolute number has increased vastly. With little opportunity for growth except the "high rise," the increased population has meant greater density. At the same time, the growth of Suburbia has been amazing—from 13.5% of the standard metropolitan area population in 1900 to 36.8% in 1960.

Malzberg's⁷¹ early findings of high rates of mental disorder for migrants in New York State might be explained by the state's relative sufficiency of mental health services and the glamour of New York City, which attracted the unstable and the potentially mentally ill, as well as others. But Lazarus, Locke, and Thomas' study⁸⁴ that presented standardized total first-admission rates to state hospitals for migrants and nonmigrants in New York, Ohio, and California showed that both male and female migrants had higher rates than those born in the respective states. The findings could not be explained by factors such as education, occupation, or social class.

Ødegaard's Later Studies: After World War II, Ødegaard⁸⁵ continued his studies of geographic mobility and mental health. He used data gathered for over 30 years that consisted mainly of hospital admission statistics, supplemented by the findings from intensive studies of small groups. He believed that reliable studies of emigration, reemigration, and internal migration could be carried out in Norway for a number of reasons. The country had a total population of only 3.5 million in 1960, a small number of immigrants, just one major metropolitan area (Oslo, population 600,000), and its vital statistics are known for their accuracy.

Ødegaard studied internal migration within Norway by comparing first-admission rates to hospitals 1958–1963 with data from the 1960 census. Generally, first-admission rates were significantly lower for migrants—even those who had merely moved within a county in Norway—than for nonmigrants. However, there were several notable exceptions. Migrants from rural communities to Oslo had higher rates than Oslo's nonmigrant inhabitants, and migrants to Oslo from other cities and towns had very much higher rates than nonmigrants. But the migrants to suburban areas,

usually young married couples “with considerable drive and with a reasonably good income,” had much lower rates than did the nonmigrant population. Ödegaard points out the social selection process involved—just as he had emphasized earlier that unfavorable social selection processes were involved with immigration to America. The migrational patterns revealed few social-class relationships; an exception was that migrant owners and managers had higher mental illness rates than their nonmigrant counterparts. He concludes that overseas migration is associated with increased risk for mental illness, whereas, with the striking exception of migration to Oslo, migration within the country is associated with lower risk—“internal migration is related to mental health.”

How migration enters into and is tied up with the social selection processes that are responsible, at least in part, for the distribution of mental illness in populations is not known. Ödegaard believed that careful studies of emigration and migration can “help to unravel this knot, but we should keep in mind that a final solution is probably in principle impossible.”⁸⁶

Migration and Social Change: Kingsley Davis⁸⁷ states that the current worldwide urbanization is a relatively new historical phenomenon that “represents a revolutionary change in the whole pattern of social life. . . . It exercises its pervasive influence not only within the urban milieu strictly defined but also in the rural hinterland.” A history of “cultures,” however, e.g., Spengler’s⁸⁸ *Decline of the West*, shows that urbanization is a stage in almost every culture’s life cycle.

Until recently, cities have attracted large numbers of people for various reasons: economic opportunity, cultural richness, subcultural diversity, the stimulation provided by the tempo of life, or anonymity. During the last two decades, however, the center cities in the United States have become fearful, crowded, rapidly decaying “concrete jungles” as those with material and cultural resources move into the ever-expanding suburbs. The low rates that Ödegaard found for the migrants into Oslo suburbs are consistent with our finding that the relatively mobile, usually young or middle-aged, and more affluent persons lived in the suburbs, and seemingly were able to develop a way of life in which they felt at home in “Suburbia, U.S.A.,” North, South, East, or West. Higher percentages, either of those who had never moved or of those who were “hypermobile,” were impaired than those who had moved once every few years.⁸⁹

And in the United States, restlessness may be a fundamental aspect of the American character. In 1837 De Tocqueville stated: “In the United States a man builds a house in which to spend his old age, and he sells it before the roof is on; . . . he settles in a place, which he soon afterwards leaves to carry his changeable longings elsewhere [Italics ours].”⁹⁰

Murphy⁷⁶ believes that migration within one’s country or emigration to another country is “a special case of social change,” and that investiga-

tions of migrants provide researchers with opportunities to study social change. Six major variables that affect mental health-illness in such studies are (1) origin: moving away from a place or country of origin may be felt as a loss that leads to distress, or moving away from an adverse social environment may be salutary; (2) motive: being forced to move may be accompanied by reluctance and lead to maladaptation and mental disturbance, whereas voluntary migration can imply discontent with one's initial situation; (3) target: moving to an undefined target (job, goal, locale) is more likely to be associated with higher risk for mental disorder than moving to a discrete, well-defined target; (4) means: lack of knowledge about the intended milieu, little education, and a restricted subcultural orientation limit the migrant's ability to cope with change and potentiate

Table 11. Summary of Findings on Migration and Mental Illness

Investigator	Year	Findings
Jarvis	1855	Higher rates for foreign-born than for native-born in Massachusetts
Malzberg	1935	Admission rates higher in foreign-born than in native-born in New York
Ödegaard	1932	Emigration from Norway to Minnesota associated with higher morbidity
Ödegaard	1963	Admission rates of reemigrants to Norway three times higher than native nonmigrants
Ödegaard	1963	Migrants within Norway have lower first-admission rates than nonmigrants and migrants to suburbs have very low rates; but, migrants to Oslo have high rates
Malzberg <i>et al.</i>	1956	Higher rates for migrants than for native New Yorkers
Eitinger and Grünfeld	1956	Incidence of mental disorders in "displaced" Norwegians five times higher than in a control population
Eitinger	1959	
Hollingshead and Redlich	1958	Rates for the foreign-born not significantly higher than rates for the native-born
Midtown Manhattan Study	1963	First-generation Americans have higher rates than second-, third-, and, especially, fourth-generation Americans. Migrants from small cities had much lower rates than native New Yorkers
Halevi (Israel)	1963	Lower rates for immigrants than for native-born
Lazarus <i>et al.</i>	1963	Higher rates for migrants than nonmigrants in New York, Ohio, and California
Jaco	1960	Equal rates for migrants and nonmigrants, but finding is dubious because migrational data were unknown in one-third of the group
Helgason (Iceland)	1964	Higher incidence of psychoses in nonmigrants
Stenback and Achte (Finland)	1965	Schizophrenia less frequent among migrants, but other mental illnesses higher among migrants

the possibility of illness, whereas knowledge about the prospective home and "preparedness" for moving enhance adaptation; (5) perceived feasibility: possible discrepancies between the ideal goal and the realities of the move may be conducive to illness; (6) extraneous demands: mental disturbance is less likely to develop when the migrant moves into a receptive society.

Table 11 presents the results of studies on migration and mental disorder in capsule form.

The results of studies on emigration, migration, and mental illness lack uniformity. Differences in methodologies are probably only partly responsible for the inconsistent findings. "Migration and mental illness" is a huge, complex problem to study, particularly in the post-World War II era when millions of persons have been uprooted, and when, for some, flight has been the only possibility for survival. Also, technological developments have made emigration and migration feasible for some who might otherwise never have known about any part of the world other than their immediate environs. Refugees from Southeast Asia continue to seek new homes, and laborers from Africa and Asia are lured by the work opportunities in Western Europe. For almost four decades, the United States has been enriched by the "brain drain" from poorer nations. Thus, intricate social selection processes are bound to complicate and influence the results of epidemiologic studies on migration and mental illness.

How social processes are related to mental illness is understood imperfectly, although the association between deprivation and a high frequency of mental illness is difficult to dispute. The character of the community and its influence on the lives of its inhabitants appear to be profoundly important. As we shall see in the next chapter, the level of community integration is related to the frequency of mental disorders.

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11

The Community: Twentieth-Century Studies

The community can be regarded as composed of two major sets of forces, one centripetal, concerned with self-maintenance, and one centrifugal, tending toward dissolution—a struggle, in short, between pattern and dissipation.

—A. H. LEIGHTON¹

Studies of the social correlates of mental illness, as we have seen, produced some important results. Consistently, lower socioeconomic status (SES) was found to be associated with a high frequency of mental disorder, and usually the distribution of mental illness followed certain sociological patterns. But how adverse social conditions etiologically relate to mental illness or even explain the observed distributions are still unanswered questions. Intensive studies of communities offered opportunities for investigating the nature and extent of the associations between social and cultural processes and mental health and illness. In this chapter we will look at some of these studies.

The Hutterites—1950–1955

One way of studying the relationship between cultural processes and mental illness is to investigate intensively a small, autonomous, relatively homogeneous group that adheres to its own strict cultural traditions and is somewhat isolated according to twentieth-century standards. Eaton and Weil's² study of a distinctive group, the Hutterites, that prizes the simple life and has a reputation for mental health, is of special value for two reasons. First, the members of the group have similar life styles, clearly defined roles, and have shared the same sentiments for about 400 years. Eaton and Weil state: "Some of the cultural and social variables like educational level, income, migration, and others, which in other populations usually vary greatly, could be eliminated as factors because they vary

little throughout the entire society."³ Second, comparing the results of a study of mental health and illness in such a group with the prevalence, types, and correlates of mental illness in more complex Western societies could point to clues with etiologic value. The major question was whether the Hutterite way of life shielded its followers from mental illness. Eaton and Weil emphasize that the Hutterite community "has a relatively low level of social stress, in the sense that its way of life lacks many of the unresolved tensions and contradictions of the contemporary American melting pot cultural system."⁴

The Hutterites lived in 93 scattered colonies (each containing about 90 persons) in remote parts of the Dakotas, Montana, Alberta, and Manitoba (see Fig. 10). The sect originated in Switzerland in 1528. During the next few centuries they moved to various locations in Central Europe and Southern Russia to escape persecution, and finally emigrated to the United States in 1874–1877.

Hutterites are pacifists. They believe in communal ownership of all property and government by consensus. Farming is their only industry and every person is expected to work, but only to "do the best he can" rather than becoming involved in competitive struggles to succeed. The community provides "social security from the womb to the tomb." No wages are paid; meals are taken together; and the religious creed promises salvation to all of its followers. Hutterites attend school until the age of 15 when they are assigned work; early marriage and large families are encouraged. Their religion forbids marriage outside the sect; 50% of the members have only three surnames. The social system is considered to be highly stable; the Hutterite society has a constant net rate of reproduction and the distribution by age and sex resembles the normal statistical curve.

Eaton and Weil used both quantitative and qualitative methods for studying the Hutterites. They compiled data on mental health and illness



Figure 10. Ethnic Hutterite colonies in North America: 1950. (Adapted from *Culture and Mental Disorders*, by J. W. Eaton and R. J. Weil, copyright © 1955 by The Free Press, a corporation. Reprinted by permission of Macmillan Publishing Co.⁴)

from numerous sources: key informants, medical records, family Bibles, intensive field work, medical and psychiatric examinations of some subjects, and interviews with many members of the Hutterite colonies. Generally, the investigators gathered information on a member's (1) genetic background, (2) physical health, (3) intrapersonal relations ("Who has lost his mind? Who is nervous?"), (4) interpersonal relationships, and (5) culture and values. The information on mental health and illness was classified by psychiatrists according to DSM-I⁵ criteria. Lifetime prevalence of mental disorders was calculated as of August 31, 1951.

The lifetime prevalence of all mental disorders in the 8,542 Hutterites studied was 23.3 per 1,000; the rate for psychosis was 6.2, for neurosis 8.1, for mental deficiency 6.0, for epilepsy 2.3, and personality disorders 0.7 per 1,000. Every major diagnostic category was represented. Eaton and Weil state: "The Hutterite way of life, despite the good mental health reputation of its members, provides no immunity from severe psychiatric disturbances."⁶ They note a similarity between their conclusion and D. Leighton and Kluckhohn's⁷ finding that, contrary to popular impressions, the Navajo Indians showed emotional instability and high levels of anxiety.

Comparisons with the results of nine other studies in South Germany, Scandinavia, Taiwan, and the United States showed that the Hutterites "have a higher *enumerated* rate of psychoses than seven of the ten populations"⁸; only Bremer's⁹ study of an Arctic Norwegian village during World War II and J. A. Böök's¹⁰ preliminary results from an area in North Sweden had higher rates. But evaluation of the methodologies used in other studies led Eaton and Weil to judge that the *apparently* high rates of illness they found reflected their very intense contact with their subjects and that probably the lifetime risk for mental disorder for the Hutterites was as low or lower than that of any contemporary group in Western society. However, it was higher than the risk in Taiwan.

Finding that all types of mental disorders occurred with regularity in the Hutterite population suggested to Eaton and Weil that genetic and other organic factors predispose some individuals to mental disorders, no matter how stable and stress-free the social system. The authors state poignantly that "a mental health utopia is probably impossible."¹¹

The Hutterites' protective social structure was associated with particular forms of psychopathology: (1) guilt feelings among those who feared they might not live up to group expectations, and (2) a high frequency of neurotic and even psychotic depressions. Characterologic problems and especially aggressive disorders were rare even though projective testing demonstrated that the Hutterites had aggressive impulses—"Human brutality may be found in most social systems, but it is not a functionally necessary behavior; its repression seems to be possible."¹² In the Hutterite society, which provided a strong social support system and attached little

or no stigma to mental illness, the impairments produced by mental illness were less devastating than in modern Western societies.

Eaton and Weil predicted that the impact of social change on the Hutterites, evident to the investigators even in its early stages in 1950, would be manifested a generation later by a considerable increase in the frequency of psychoneuroses and personality disorders. Finally, they note that, although social psychiatry accepts the premise that social processes are associated with mental disorders: "The importance of culture, of the faiths, hopes, and fears which are produced in group living and transmitted from generation to generation, also needs to be fully recognized."¹³

The results from this unusually interesting study point to the importance of culturally induced intrapsychic processes and to genetic factors in the etiology of mental illness. The Hutterites possessed a strong, durable cultural legacy. Although family life was somewhat diluted, relative to the standards in middle-class America, the Hutterites' values, mores, and customs were transmitted to almost all of the members of the group in the schools, church, and communal activities, as well as the home. Since the society was remarkably class-free, devoid of class conflicts and tensions, no premium was placed on competitive striving. Finding that mental disorders were about as common in such a society as in a number of typically Western societies diminishes the importance of the role of social class in the production of mental disorders.

Eaton and Weil did not conduct thorough genealogical studies; however, since the Hutterite society is endogamous, the significance of genetic factors would appear to be great. Of the 39 Hutterites with manic-depressive illness, 16 were fairly closely related to at least one other person with this condition. Many Hutterites reported that there were "blood relationships between mentally disordered persons."¹⁴ Eaton and Weil believe that the vicissitudes of the Hutterites encountered throughout the centuries may have weeded out or at least not attracted schizoid persons. Those who had stayed with the sect and adhered to its pacifistic doctrines were likely to be high-principled, rigid, restrictive persons who internalize their emotions. Thus, for over 400 years, genetic and cultural factors conjoined to produce a homogeneous cultural group in which certain personality traits were common and a significant number of persons were afflicted with mental disorder even though the society was relatively stress-free.

The Stirling County Study—1949–1963

Stirling County is the name given by the Leightons and their colleagues to a large, 970-square-mile, predominantly rural county in Nova Scotia that had a population of 19,989 in 1950. The county contains one

small urban center (population about 3,000) and a number of villages and hamlets. Fishing, timbering, and farming are the three principal occupations. The population is almost evenly divided between those of English descent who are Protestant and the Roman Catholic French Acadians. These groups have maintained their distinctive cultural traditions and identities, thus providing the investigators with an excellent opportunity to evaluate and compare the differing communities, life styles, and values.¹⁵⁻¹⁷

The fundamental hypothesis was that a community's degree of integration or disintegration is related to the mental health of its inhabitants. The Leightons and their colleagues defined indices of sociocultural disintegration and postulated that disintegration "fosters psychiatric disorder." Sentiments are seen as a bridging concept for analyzing relationships between the sociocultural environment and mental health or illness. Of particular importance are the "essential striving sentiments." These concern physical security, sexual expression, giving and receiving love, spontaneity, a sense of orientation in relation to society, belonging to a moral order, etc. Thus, it was postulated that "sociocultural situations can be said to *foster* psychiatric illness if they *interfere* with the development and functioning of these [striving] sentiments, since the latter in turn affect the essential psychical condition."¹⁸

An individual reacts to a disturbance in the essential psychical condition "by seeking to remove the disturbance. When the process of this removal is inadequate (maladaptive to the personality), this fact is manifest in symptoms and impairment. . . . Symptom formation, however, is not the inevitable outcome. Other forms of adjustment are possible and frequent."¹⁹

The researchers established criteria for rating communities on an integration-disintegration continuum. These criteria consisted of two sets of indicators. For selecting contrasting communities—integrated or disintegrated—they used the following:

1. A recent history of disaster
2. Widespread ill health
3. Extensive poverty
4. Cultural confusion (a community containing two or more cultures "without ordered relationships to each other")
5. Widespread secularization (the relative absence of "religious sentiments")
6. Extensive migration
7. Rapid and widespread social change

After communities were classified according to those indicators, social scientists working in the field determined the degree of integration-

disintegration based on a second set of indices:

1. A high frequency of broken homes
2. Few and weak associations
3. Few and weak leaders
4. Few patterns of recreation
5. High frequency of hostility
6. High frequency of crime and delinquency
7. Weak and fragmented networks of communications

Communities that ranked high on these characteristics were considered to be markedly disintegrated. One of the research propositions was that "severe social disintegration of a community produces both psychological stress and lack of resources for dealing with that stress; out of the resultant psychological strain, psychiatric disorder emerges."²⁰ Thus, degree of community integration-disintegration was conceptualized as the independent variable and psychiatric disorder in the individual as the dependent variable.

To measure psychiatric disorder, the investigators developed a structured interview schedule and gathered basic demographic data and information about community life, the family, and the respondent's physical and mental health. The core of the mental health-illness section was the Health Opinion Survey (HOS), a 20-item symptom inventory developed from the Cornell Medical Index (CMI) and the U.S. Army's Neuropsychiatric Screening Adjunct (NSA). In addition to pretesting the interview instrument, the investigators conducted validation studies by comparing the results of clinical examinations of some of the respondents with the results obtained from the interview schedule. The validity checks determined the degree to which the instrument, primarily the HOS, measured what it was purported to measure—mental health-illness. Reliability, the consistency of a subject's responses through time, was assessed by reinterviewing a subsample at a later date. Validity and reliability were deemed acceptable. Other data were obtained from records of institutions and medical practitioners to provide a further check for validity and reliability and to collect as much information as possible.

A census of the county was developed from information provided by key informants. Based on this census, a random sample was drawn; it consisted of 1,150 respondents, aged 18+.²¹ However, various parts of the county were sampled more intensively than others to obtain maximum information about selected communities; in all, a total of 1,303 interview protocols were rated. Trained interviewers administered the interview schedule in the respondents' homes; condensed information from the interview schedule was developed into protocols and rated by two or more psychiatrists for "caseness." (See Chapter 5, Part 2.)

A psychiatric "case" was defined in terms of the probability that the individual would be diagnosed as clinically ill if examined by a psychiatrist applying the DSM-I criteria.⁴ Each respondent's interview schedule was given a caseness rating: A = almost certainly a psychiatric case; B = probably a psychiatric case; C = possibly a psychiatric case; or D = no significant evidence of psychiatric illness. Also, each respondent was rated for degree of "impairment" produced by psychiatric disorder.

The results showed that, conservatively, 57% (and more liberally, 69%) of the total sample were estimated to be "genuine psychiatric cases." Furthermore, 31.1% were considered to be impaired by psychiatric disorder (mild 28.7%, moderate 2.3%, and severe 0.1%). The investigators state that this seemed to be a high percentage, but they point out that the great majority of the 31.1% found to be impaired were only mildly impaired, i.e., something between 20 and 30 per cent of their life space [was] impeded by symptoms.'* 22

Frequency and Type of Mental Disorders: Many of the respondents were judged as having multiple "current symptom patterns" (point prevalence); therefore, the percentages for various types of psychiatric disorder add up to more than 100%. Of the countywide sample ($N = 1,010$), and 59.5% were considered to have psychophysiological patterns (gastrointestinal 33.3%, musculoskeletal 21.7%, cardiovascular 15.2%, etc.); 51.9% were designated psychoneurotic (anxiety 10%, depressive 7.2%, etc.); 6.0% were judged as having personality disorders; 5.8% were classified as sociopathic; 4.8% were mentally deficient; and 2.5% were diagnosed as having brain syndromes. Psychoses were found in 0.9% (schizophrenia, 0.5%, affective 0.3%, etc.).

For lifetime prevalence, the percentages were obviously higher: psychophysiological—men 65% and women 70%; psychoneurotic—men 44% and women 63%; personality disorder—men 7% and women 6%; sociopathic behavior—men 11% and women 5%; mental deficiency—men 7% and women 7%; brain syndrome—men 4% and women almost 2%; and, psychosis—men 0.7% and women about 1.5%.

The frequency of psychophysiological disorders increased steadily with age. More than 80% of both men and women over the age of 70 were suffering from psychophysiological disorders. Some age and sex differences were observed in the frequency of psychoneurotic disorders. About 50% of women under the age of 30 and almost 75% in the age group 40–49 were classified psychoneurotic. In contrast, about 25% of men under the age of 30 and about 40% to 60% in the older age groups were classified as psychoneurotic. Sociopathic behavior was more frequent in men than women in all age groups with one exception—about 14% of women aged

* The investigators note that they first considered the impairment ratings to be weak, but after conducting further analyses they found that ratings for impairment had "a good deal of stability and consistency." 23

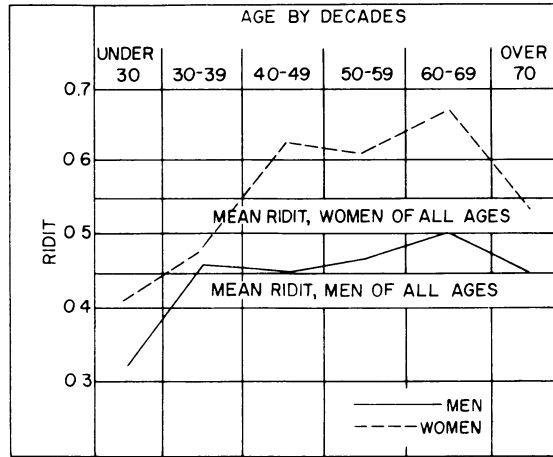


Figure 11. Probability of being a psychiatric case—age and sex distributions. (Figure 1, p. 255 in *The Character of Danger: Psychiatric Symptoms in Selected Communities*, by Dorothea C. Leighton, John S. Harding, David B. Macklin, Allister M. Macmillan, and Alexander H. Leighton, © 1963 by Alexander H. Leighton, Basic Books, Inc., Publishers, New York.²⁴)

40–49 were judged sociopathic compared with about 12% of the men in that age group. Personality disorders (emotionally unstable, passive-aggressive, inadequate, etc.) were most common for women in the age group 40–49 and for men in the age group 50–59. About 7% of men and women, an extremely high percentage, were classified as mentally deficient. Brain syndromes were slightly more common in men than in women; the frequency rose sharply to about 11% of both sexes over the age of 70. Psychosis was about 1% for both sexes in the various age groups up to the age of 70.

Most of the other results were presented in terms of the ridit, a numerical index expressing the probability of caseness (see page 45). Figure 11²⁴ shows that the *probability of being a psychiatric case* was greater for women (mean ridit .55) than for men (mean ridit .44), and tended to increase with age until about 65 when it declined.

Some Social Correlates

The sample was divided into five occupational groups (ranging from 1—professional, white collar, etc.—to 4—unskilled); the fifth group consisted of the retired or incapacitated. The probability of caseness, as shown in Fig. 12,²⁵ increased in almost linear fashion from 0.38 for Group 1 men to 0.5 for Group 4 men, and from 0.52 for Group 1 women to 0.64 for Group 4 women. The investigators concluded: “Whatever the cause, psychiatric difficulties seem to be more frequent at the economically lower reaches of the sociocultural system.”²⁶

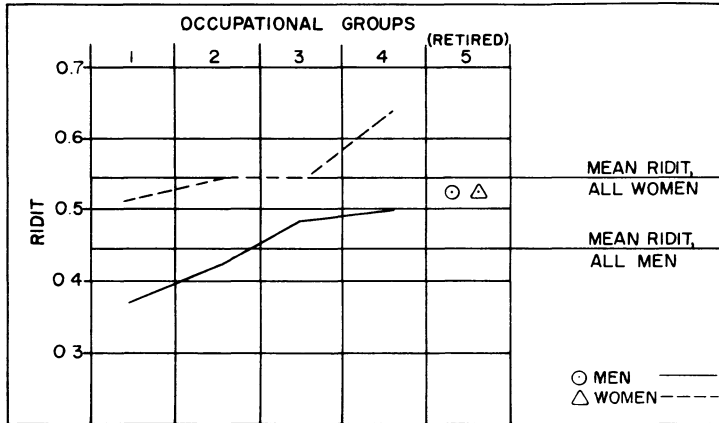


Figure 12. Probability of being a psychiatric case by occupational position. (Figure 11, p. 283, in *The Character of Danger: Psychiatric Symptoms in Selected Communities*, by Dorothea C. Leighton, John S. Harding, David B. Macklin, Allister M. Macmillan, and Alexander H. Leighton, © 1963 by Alexander H. Leighton, Basic Books, Inc., Publishers, New York. ²⁵)

The number of moves prior to the age of 20 was strongly associated with psychiatric disorder, but there was no association with the number of moves after the age of 20. It should be noted that geographic stability, rather than mobility, was the norm in Stirling County. Most of the movement was out-migration; those who had moved away were not included in the study. The Leightons think that the association between number of moves before the age of 20 and poorer mental health illustrates the deleterious effect of frequent moves during childhood and adolescence.

Since the inhabitants of the county represented two distinctive ethnic-religious groups, it was possible to compare the association between culture and psychiatric disorder. The French Roman Catholics (Acadians) had a mean ridit of .47, whereas the English Protestants had a mean ridit of .52, but the difference was not statistically significant. However, some differences in symptom patterns were observed: musculoskeletal symptoms and brain syndromes were more frequent in the English, whereas “sick headaches” were more common in the Acadians.

All respondents were ranked for degree of religiosity. There was a tendency for the group of men who ranked low on religiosity (increasing secularization) to have a higher risk for psychiatric disorder, ridit .49, than those who ranked high, ridit .39. But for women, an opposite association was found; those who ranked high on religiosity had a higher risk for psychiatric disorder, ridit .57, than did those who ranked lower on religiosity, ridit .44.

The investigators studied the one small urban area in the county to determine whether living in the “city” was associated with higher risk of

psychiatric disorder. The differences between the small urban center and the county as a whole were not statistically significant.

The researchers point out that size of city probably influences the geographic distribution of mental disorder. In small cities, almost all the neighborhoods are heterogeneous. Since the "city" in Stirling County was small, respondents were classified according to "social clusters" rather than location of residence. The social cluster is an anthropologic concept which groups persons according to patterns of social interaction. Those who had more extensive social contact tended to show lower risk for mental disorder than did those who had fewer social contacts. The latter, most of whom were "deviant, disorganized or socially disapproved pockets [clusters]—principally lower class or alcoholic or both,"²⁷ were at higher risk.

Community Comparisons: The major hypothesis in this study was that sociocultural disintegration is associated with a higher risk of psychiatric disorder than is sociocultural integration. The investigators state that for "this crucial test" they compared data on one highly integrated Acadian and one highly integrated English community with data on three extremely disintegrated small communities. The mental health status in the two integrated communities was about the same as for the county as a whole. The risk in the integrated Acadian community was .43; the risk in the integrated English community was .52, about the same as for the county as a whole, .50.

The investigators believe that the lower rate of psychiatric disorders in the French community, especially the low risk for women, .40, in the integrated community, is "due to the exceedingly stable character of the Acadian family and to the clarity and consistency of the sentiment system which contains little ambiguity as to the roles of women." In contrast, in the integrated English community, there was more family and role ambiguity, especially for women: "the English communities have been more touched by the world-wide changes of sentiment patterns, with their confusion and cross currents progressively accumulating over the last half century."²⁸

The risk in the depressed areas was .66, considerably higher than in the two integrated communities or the county as a whole. The women had a high mean risk, .65, and the men, a very high mean risk, .68; the mean risk for women in the county as a whole was .55 and for men .44. In the depressed areas the number of psychotics was small. The investigators think that there is no evidence to indicate that psychoses "are generated by a disintegrated environment, or that persons with them are precipitated into such areas by the processes of the larger society."²⁹ But sociopathic symptoms, psychosomatic patterns, and mental deficiency were much more common in the depressed areas than elsewhere. Furthermore, there was a greater tendency for men and women in the depressed areas to be

“more like each other in the prevalence of psychoneurotic, sociopathic, and mental deficiency symptoms” than elsewhere in the county.

Based on a theoretical framework and using sophisticated methodology, this comprehensive study probed relationships between sociocultural processes and mental health-illness intensively. It is the single most ambitious, thorough investigation of this type in psychiatric epidemiology. But any such study, even though it employs a scientific research design, confronts at least two major obstacles. The first concerns case-definition, validity, and reliability. At our present level of knowledge in psychiatry, case-definition is subject to lack of consensus regarding diagnosis and types and to some degree of cultural relativity. The second obstacle is even more complex; especially in the social and applied sciences, it appears to be almost theoretically impossible to find truly independent variables. Thus, there is the possibility, recognized by the Leightons and their colleagues, that psychiatric disorder may be an index of social disintegration, rather than a result of it. The age-old question reappears: Does the character of the community shape its inhabitants' lives, or do persons determine the character of the community? Thus, in our search for social and cultural correlates of mental illness and their possible etiologic significance, we are hampered by difficulties determining whether the postulated independent and dependent variables are truly distinctive, rather than intertwining threads in a complex cause-and-effect fabric.

Stirling County—“The Road”—1965

In the early 1960s some of the communities in Stirling County were restudied. One of them, “The Road,” which had been considered to be markedly disintegrated in 1950, was found to have changed dramatically.

Alexander Leighton,³⁰ in his article “Poverty and Social Change,” describes it as it was in 1950—a small community containing 118 persons living in small, shabby houses with tawdry furnishings. The community was poverty-stricken and showed evidence of sociocultural disintegration: broken marriages, interparental strife, child neglect, social isolation, and a low educational level. The sentiments “reflected the disintegrated nature of the neighborhood. . . . [T]he values . . . were comparatively pale.” The persons disparaged themselves and mistrusted others. They were oriented only to the present, the here-and-now; they spent what little money they had as soon as possible, and did not plan for the future. Its psychological climate could be “represented by such words as ‘apathy,’ ‘interpersonal hostility,’ ‘anxiety,’ ‘depression,’ ‘suspicion’ and ‘an unrealistic view of human affairs.’” The inhabitants of “The Road” were stigmatized by others in the county; they were regarded as being lazy and untrustworthy,

or mentally retarded, mentally ill, alcoholic, or delinquent. Inbreeding was thought to be responsible for their plight.

During the 1950s, however, with the advent of increased economic opportunities, leadership by a schoolteacher, and communications with the dominant society (television and employment in a large, distant city), the character of "The Road" changed. After 15 years, the houses were neat and well kept and the home furnishings had improved noticeably. As a result of busing to a consolidated school, the educational level rose, and many of the schoolchildren were planning to complete high school. Idleness, drunkenness, quarreling, and delinquency were much less common. Field workers observed that values had changed to a future orientation and that the inhabitants were participating in church, school, and other activities.

On the indices of integration-disintegration, "The Road" was rated as somewhat integrated in contrast to its being rated as markedly disintegrated 15 years earlier. The emotional climate had changed and the change was reflected by a marked decrease in the prevalence of mental disorders between 1952 and 1962. Two other disintegrated communities that had not changed as much during the years had a much higher frequency of mental disorders in 1962 than did "The Road."

Alexander Leighton states that people in disintegrated communities "find themselves in the grip of two interlocking and self-defeating forces, one sociocultural, the other psychological." These people, according to Leighton, have difficulty using their limited material resources wisely. In addition to economic and educational opportunities, they need to develop social functioning skills. They need "to gain confidence that some things can be done to better their lot," to be assisted in changing their views of the world, and to be "encouraged to develop motivation. Without social and psychological changes of this kind the people will retain their inability to make adequate use of educational and employment opportunities."³¹

Thus, one of the follow-up investigations of the Stirling County Study showed that social factors, such as increased economic opportunity, combined with cultural factors, such as leadership and extensive contact with the main society, conjoined to change conditions of life for a small, deprived, and confused group. In view of the concurrent improvement in economic conditions, we are unable to disentangle the influence of this increasing financial security from the more strictly cultural factors as a variable producing the material and psychological changes experienced by the inhabitants of "The Road." But the change, evidenced by the marked decrease in the prevalence of psychiatric disorder, points to the significance of social and cultural processes, rather than to the genetic, in the etiology of many mental disorders. Mental illness, however, did not vanish completely, and, as we noted in our comments about the Hutterites, the

role of other processes, including the genetic, in the production of mental disorder cannot be discounted.

Meanwhile, the Leightons and their colleagues conducted a number of limited and pilot cross-cultural studies to evaluate the possible extension of their integration-disintegration frame of reference to diverse cultural groups. Their long-range goal was to understand why, how, and to what extent social and cultural disintegration is associated with mental illness in our rapidly changing world and to ascertain how the debilitating effects of change could be minimized and its ameliorative effects enhanced.

Psychiatric Disorder Among the Yoruba—1963

One of the Leightons' and their colleagues' most ambitious attempts to determine the applicability of the "community integration-disintegration frame of reference" was their pilot study of a subtribe of the Yoruba in Nigeria, carried out in collaboration with T. A. Lambo.³² The investigators sought to determine whether the methodology used in Stirling County could be used to study a vastly different cultural group, and also, to ascertain the prevalence and types of psychiatric symptoms in such a group. They studied 15 villages and the city of Abeokuta (population about 80,000). With the help of Nigerian psychiatrists, the research team gathered anthropological data and also interviewed 416 villagers, city inhabitants, and known patients (about 75). At least two psychiatrists rated the information obtained from the interviews for "caseness." They used the same criteria that had been used in Stirling County: A = clear psychiatric, B = probable, C = doubtful, and D = asymptomatic. Some findings in the Yoruba sample compared with Stirling County are shown in Table 12.³³

Smaller percentages of the Yoruba, 15%, than the Stirling County respondents, 18%, were rated as "clear psychiatric" or "probable psychiatric" (Types I and II) cases. Slightly lower percentages of the Yoruba were rated as having psychoneurotic, 10%, and psychophysiological, 9%, symptom patterns than the Stirling County sample, 12% and 11%, respectively. The investigators note that cultural distance complicated their findings; it was particularly difficult to determine the extent to which those with current psychophysiological symptom patterns had organic illnesses producing the symptomatology. Psychotic patterns appeared to be more common in the Yoruba, 4%, than in the Stirling County group, 0.5%, but the percentages with personality disorder and sociopathic patterns were a bit higher in Stirling County.

The investigators determined the rident (mental health risk score, see page 45) for the Yoruba men and women. The risk for Yoruba men and women was about the same, .50; however, in Stirling County the risk for women, .56, was significantly higher than the risk for men, .44. The Leightons and their colleagues believe that this and other comparisons

Table 12. Percentages of Types I and II Psychiatric Cases in Two Cultural Groups

Symptom patterns ^a	Cultural groups		Significance of difference
	Stirling County (N = 254)	Yoruba (N = 245)	
Psychoneurotic pattern	12	10	N.S.
Psychophysiological pattern	11	9	N.S.
Psychotic pattern	0.5	4	<i>p</i> < .025
Mental-deficiency pattern	4	0.5	<i>p</i> < .025
Senility pattern ^b	4	6	N.S.
Personality disorder pattern	4	2	N.S.
Sociopathic pattern	2	0.5	N.S.
Epilepsy pattern ^c	0.5	0.5	N.S.
Total percentage of Types I and II cases	18	15	N.S.

Adapted from Murphy, J. M.³³

^a "Symptom Patterns" here are divided into "major symptom patterns." Eight major symptom patterns served as a comprehensive categorization: psychoneurotic, psychophysiological, psychotic, mental deficiency, brain syndromes, personality disorders, sociopathic, and generalized major disturbances. These are the categories presented in the table with the exception of senility which is a detailed pattern in the major pattern of brain syndrome and epilepsy which is in generalized motor disturbances.

^b Percentages for senility have been age-adjusted, using the number of individuals 60 years and over in each group as the denominators. Senility accounts for most of the cases with a brain syndrome pattern and the differences among the cultural groups regarding brain syndromes other than senility are also nonsignificant.

^c In the major pattern of generalized motor disturbance, the detailed patterns other than epilepsy are also nonsignificant when the two cultural groups are compared.

"suggest that different kinds of sociocultural environment have a differential effect on men and women. The further elucidation of this is, obviously, a target of prime importance, both from the point of view of practical consequences and of basic research into the nature of personality, male-female relationships, and the functioning of the families."³⁴

To examine the hypothesis that community disintegration is related to mental illness, the researchers had to modify their integration-disintegration indices. The indices of disintegration among the Yoruba were poverty, secularization, family instability, weak leadership, and poorly developed associations and recreational institutions. Field workers studied the Yoruba villages and also obtained information about integration-disintegration from key informants. Comparisons of levels of integration with mental health risk among the Yoruba and in Stirling County showed that level of community integration was related to mental health risk in both parts of the world, but that the differences were greater in Stirling County than in Nigeria (see Table 13³⁵).

The investigators also evaluated the impact of the rapid cultural change that they were observing in West Africa. They recategorized their

Table 13. *Community Integration and Mental Health Risk (measured in ridits)*

Level of integration	Yoruba villages	Stirling County
High	.40	.48
Medium	.53	.50
Low	.53	.66

From A. H. Leighton and T. A. Lambo, *et al.*, *Psychiatric disorder in West Africa, American Journal of Psychiatry*, Vol. 120, pp. 522-524, 1963. Copyright 1963, the American Psychiatric Association. Reprinted by permission.³⁵

15 study villages into four types: (1) changing and integrated, (2) changing and disintegrated, (3) traditional and integrated, and (4) traditional and disintegrated. The mental health risk was lowest, .39, in the traditional-integrated and only slightly higher, .41, in the changing-integrated. In the changing-disintegrated it was still lower, .46, than in any of the communities in Stirling County, .48 to .66. But the risk in the Yoruba traditional-disintegrated was much higher, .69, than for the other Yoruba villages or for the disintegrated Stirling County communities.

The Leightons and their colleagues conclude that the results of their pilot study showed that the community integration-disintegration frame of reference could be applied to vastly different cultures. They note that the effects of disintegration are deleterious and as "downward spirals are set in motion . . . social pathology and psychopathology reinforce each other."³⁶ They suggest that social and cultural change does not lead to higher risk when the social system does not become disintegrated. Furthermore, their findings indicate that the impact of culture change may have a positive influence on mental health when the community is already disintegrated.

The difficulties in carrying out a cross-cultural study of this type are truly formidable. But if this comparative plot study could be replicated in a number of communities in the world, the results (regardless of their outcome) would undoubtedly increase our understanding of the nature of mental illness and would have extraordinary value for psychiatric epidemiology.

In this chapter we have focused on studies that were concerned mainly with social and cultural influences on the prevalence of mental illness. But these and other studies conducted since 1950 used developing methodologies in the continued quest for accurate measurements of prevalence as well as in the search for social and cultural correlates of mental illness. In the next chapter we will review in depth a few studies concerned primarily with measuring prevalence and summarize the results of others to provide reasonably complete coverage of this basic epidemiologic endeavor.

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12

Later Twentieth-Century Studies

As the evidence for high prevalence rate has increased, so too has uncertainty about what constitutes such disturbances and whether, after all, there is such a thing as mental illness. We interpret this to mean that as the size of the problem has grown and more and more people are evidently involved, consensus regarding its nature and how to cope has decreased.

—A. LEIGHTON¹

The two studies of Lundby, Sweden, by Essen-Möller² in 1947 and Hagnell³ in 1957 are probably the most intensive and thorough investigations of the prevalence of psychiatric disorder that have been conducted. Also, from these investigations, Hagnell was able to calculate the *incidence* of mental disorders; his work is the only major study of its kind that has been carried out in Western society.

In this chapter we will review these important studies at length, look closely at Hagnell's incidence study, and present the results of other fairly recent investigations of prevalence. Finally, we will summarize some of the early, preliminary findings from the ongoing Midtown Manhattan Re-study—1954–1974, and then comment on the results of prevalence studies in this century.

Lundby, Sweden—1947–1954

Essen-Möller, 1956: In 1947, Erik Essen-Möller took a medical census of the 2,550 inhabitants in a small South Swedish community, Lundby. Lundby was a semirural, 45-square-kilometer area, located near a university and medical center. Most of the inhabitants were unskilled workers or farmers, but some occupied managerial and professional positions. Essen-Möller noted that many previous population studies had a genealogic and a genetic orientation, and that their findings would have had greater value if accurate results of prevalence studies had been available for baseline and

other comparative purposes. Therefore, he sought to determine the prevalence of mental illness and also: “*What are the frequencies and relationships of moderate and normal variants of personality to be recognized in an entire population?*”⁴

The work of his professor, Henrik Sjöbring,⁵ supplied a background for Essen-Möller’s investigation. As discussed in Chapter 8, in 1913 Sjöbring postulated that certain personality traits were distributed in the general population according to the bell-shaped curve, just as variations in intelligence are distributed. The three personality variations are stability, solidity, and validity; capacity (intelligence) is the fourth (see pages 128–132). In addition, Sjöbring believed that certain pathologic variations (without a positive counterpart) existed as abnormal entities (mental illness).

In the summer of 1947, four psychiatrists, trained by Professor Sjöbring, interviewed 98.8%*, 2,520 of Lundby’s 2,550 inhabitants (1,238 female and 1,312 male children and adults). The psychiatric interviews were conducted in homes, where people worked, and even in the fields. The investigators used an open-ended history-taking approach rather than a structured questionnaire. They made sure that they questioned each respondent about health, sleep, capacity for work, previous medical history, mental health during childhood, current mental health, choice of jobs, and leisure activities. During the course of the interviews, the psychiatrists were also conducting psychiatric examinations. Each subject was scored for Sjöbring’s personality traits and also evaluated for mental health-illness. The information obtained from the interviews was supplemented by data from medical records.

The interview information was first classified into three major categories: (1) somatic–asthenic complaints (sleep disturbance, dizziness, headaches, etc.), (2) autonomic instability (migraine, psychosomatic reactions, visceral sensations, etc.), or (3) mental complaints (fatigue, nervousness, sensitiveness, being hunted, downhearted, etc.). Then, all the data were assembled and the four psychiatrists judged the information using the European nomenclature for their diagnoses: (1) asthenic states, (2) personality deviations, or (3) mental disease (neurosis, psychosis, intellectual deterioration, mental deficiency, and asociality). The ratings for mental illness were expressed in terms of probability: (1) evident, (2) probable, (3) conceivable, and (4) absent.

Essen-Möller and his colleagues found that Sjöbring’s normal personality traits—stability, solidity, validity, and capacity (intelligence)—were almost, but not quite, normally distributed. Furthermore, detailed analyses

* For various reasons, 30 of the 2,550 inhabitants could not be located; however, sufficient information was obtained on 12 of the 30 to enable the investigators to make clinical evaluations on them, bringing the total subjects involved in the study to 99.3%.

showed that the four personality traits were largely independent of each other, in accordance with Sjöbring's concept of the distribution of these traits within normal populations (see Chapter 8).

Prevalence and Types of Mental Illness: The lifetime prevalence of mental disorder was 179.0 per 1,000. Essen-Möller states that 14.9% of the women and 12.3% of the men were found to have the usual psychiatric diagnoses. But when the group of "severe late asthenics" was added, those percentages rose considerably; and when those with major symptoms were also included it was found that 30 to 60% had nervous states or complaints typical of those that lead patients to seek medical assistance. Finally, when the investigators added the group with minor personality deviations and vague asthenic states to the previous groups, they concluded that: "In most age-groups, this turns out to include no less than 50-80 per cent of all inhabitants, which tends, of course, to emphasize the fact that we have penetrated largely into the 'healthy' and 'normal' part of the population."^{6*}

In Lundby, 9% of the men and 8% of the women were rated as having "evident psychiatric abnormality"; 13% of the men and 24% of the women were rated as having "probable psychiatric abnormality"; and 28% of the men and 26% of the women were rated as having "conceivable psychiatric abnormality." Only 50% of the men and 42% of the women were rated as having no psychiatric abnormality. Thus, about one-half of the total population, somewhat more women than men, were judged to be psychiatrically ill. Generally, the prevalence of psychiatric disorder increased with advancing age. Neurosis, psychosis, and asociality were rare among the children below the age of 15.

Forty-four subjects, an equal number of men and women, were found to have had psychoses, a rate of 17.4 per 1,000. Of these, 9 women and 8 men were diagnosed as schizophrenic, 0.7% of the total population; 6 other persons were suspected schizophrenics, and when they were included in the total count, the percentage for schizophrenia rose almost to 0.9% of the total population, a figure reported often by other researchers. Only 23 persons (an almost equal number of males and females) were diagnosed as having depressive, manic, dysphoric, or confusional psychoses.

In 1947, at the time of the examination, 1.9% of the females and 1.1% of the males were diagnosed as currently being neurotic, but when the investigators calculated lifetime prevalence these percentages rose to 8.2% of the adult female population and 4.4% of the adult males, 7.0% of the total. No differences were found among those in the various age groups, aged 30-69; the frequency of neurosis declined in those aged 70+. Table 14⁸ shows the percentages classified in the main diagnostic categories.

* Shields and Slater⁷ report that some type of psychiatric diagnosis was given to 67.2% of the female and 60.4% of the male population.

Table 14. Main Diagnostic Categories in Swedish Study^a

Category ^b	Male, %	Female, %
Asthenic states (present only)	13	38
Personality deviations (major and minor)	29	19
Mental diseases		
Neurosis (present and past)	4	7
Psychosis (present and past)	2	2
Intellectual deterioration	4	2
Mental deficiency (oligophrenia and pathological dullness)	2	2
Asociality, alcohol abuse	14	2

Adapted from D. C. Leighton and A. H. Leighton, Mental health and social factors, in Freedman, A. M. and Kaplan, H. I. (Eds.): *Comprehensive Textbook of Psychiatry*.⁸ Copyright © 1967, The Williams & Wilkins Company, Baltimore, Md., p. 1522.

^a From Essen-Möller, E. Individual traits and morbidity in a Swedish rural population, *Acta Psychiat. et Neurol. Scand., Suppl. 100*, Copenhagen: Ejnar Munksgaard, 1956.

^b The categories are not mutually exclusive.

Psychosis was found more often among the unmarried than among the married in the population of Lundby. But neurosis and asthenia were more frequent among the married, and personality deviations were particularly common among unmarried males.

The subjects were categorized according to social position (occupational and financial levels). Psychiatric patients were *not* differentially distributed according to social levels, in contrast to the results of the New Haven, Midtown Manhattan, and Stirling County studies. Furthermore, psychoses were not more common in the lower social classes, and neuroses were not more common in the upper social classes—again, markedly different from the distributions found in the New Haven, Midtown Manhattan, and Stirling County studies. However, severe late asthenia was more frequent in higher financial groups. Essen-Möller explains that possibly the Lundby population was more homogeneous than the New Haven population. Also, of course, Hollingshead and Redlich⁹ studied a selected group—patients—whereas Essen-Möller studied a total population.

Concurrence of Mental and Physical Illnesses: Essen-Möller and his colleagues also evaluated their subjects' physical illnesses. Concurrent mental and physical illnesses were present in many and, in particular, associations were found between "proneness to infection" and early asthenia and hypophrenia (slowed mental activity). Also, associations found between rheumatic fever and asthenia led them to postulate that asthenics were predisposed to infections. Table 15¹⁰ shows that the frequency of concurrent physical and mental diagnoses increased with age.

*Table 15. Inhabitants with a Present Physical or Mental Diagnosis
(percentual frequency within age-groups)*

Age-group	Physical	+	+	-	-
	Mental	-	+	+	-
60+		21.2%	41.3	17.8	19.6
40-59		17.0	31.2	20.7	31.2
15-39		13.0	15.9	22.2	48.9
0-14		12.7	7.1	11.5	68.8
Total		15.3	22.0	18.6	44.0

Adapted from Essen-Möller.¹⁰

Generally, these important findings have been overlooked. Later, Hinkle and Wolff¹¹ reported that more of their subjects who reported mental disturbances also reported more physical illnesses than those who did not report mental symptomatology. Also, we have found that the concurrence of physical and mental illness is exceedingly common, particularly in low socioeconomic groups.¹²

Since no relationship was found between any social-class position and the higher frequency of mental disorders, Essen-Möller concluded that the investigation brought into focus the important question: Do demographic positions account for a differential distribution of the mental disorders, or are demographic positions already a product of selection? He states: "A possible method of tackling this old problem of population biology would be a checking-up of the population now tentatively defined, in order to see what became of it, demographically as well as medically."¹³ Fortunately, this was accomplished by Hagnell ten years later.

Lundby—1957-1966

Hagnell, 1966: This follow-up study conducted by Hagnell in the original area and on the population studied ten years previously by Essen-Möller, is particularly important because it is the only major study of the *incidence* of mental illness, the number of new cases occurring. Other studies have been concerned, almost exclusively, with prevalence, i.e., the existence of mental disorder at a particular time. Studies of incidence not only complement prevalence studies, but have the potential for clarifying the relative importance of etiologic factors, such as hereditary, personality, and social conditions. Thus, Hagnell was able to state that his study differed in two respects from most others: (1) It was a prospective investigation of an entire population that had previously been examined; and (2) he, personally, made a psychiatric examination of every individual in the area.

Ten years after Essen-Möller and his colleagues had examined 98.8% of the 2,550 persons in Lundby and made clinical judgments on 99.3%, Hagnell, in 1957, studied 2,550 persons in all age groups; 1,599 had belonged to the original population. He followed up 698 of the original population who had moved during the decade, and obtained information about the 253 who had died. In addition, he studied 1,013 persons who had moved to Lundby since 1947.³

The population of Lundby had grown only from 2,550 in 1947 to 2,612 in 1957. The study area consisted of two parishes. Much of the area was agricultural, but it was not a completely rural site—it contained one large industry and a few smaller ones. Hagnell states: “During the period 1947–1957, an obvious urbanization tendency thus began, a change that has since become very marked.”¹⁴ The gainfully employed had increased from 42 to 46%; the numbers employed in agriculture were smaller than before, but more were working in service industries.

Each subject was examined by the psychiatrist-investigator who used a focused interview approach while also making observations about behavior. The interview consisted of: introductory questions; longitudinal questions about the proband’s development, including health conditions; an inquiry about current status; questions about personality; and direct questions about specific illnesses. The focused interview was supplemented by a “free conversation” period that enabled the proband to volunteer additional information and allowed the examiner to explore certain historical and behavioral items in depth. Other data sources included official population registers, records from hospitals and other institutions, and information from key informants.

Caseness was specifically defined according to four criteria: (1) a history of having consulted a psychiatrist, (2) admission to a psychiatric hospital, (3) the investigator’s diagnosis based on his examination and other data, or (4) diagnosis by the investigator, plus a history of having consulted a physician for mental symptoms. Hagnell used many of the principles outlined by the Leightons in their study of Stirling County; for example, each person was evaluated according to “degree of certainty”: A—absolutely certain or almost certain psychiatric symptomatology present; B—symptomatology may be of psychiatric origin; C—cannot be excluded as psychiatric symptomatology; and D—no psychiatric symptomatology. Furthermore, each person was classified according to symptom pattern and also, rated for “degree of impairment” on a four-point scale ranging from “the individual’s conscious feeling of stress and insufficiency” to “the ease with which the symptoms can be identified as psychiatric symptoms.”¹⁵ Thus, each person was evaluated comprehensively in accord with Newman *et al.*’s¹⁶ 1937 observation that exhaustive care in describing cases allowed investigators to reach greater consensus about diagnosis.

Prevalence and Duration: Hagnell studied the prevalence of psychiatric morbidity in the population, the incidence of mental disorder during the preceding ten years, and the expectancy, or the probability of developing mental illness. Prevalence and incidence are expressed as rates, while expectancy is expressed as "risk." As Hagnell explains: "By *disease expectancy* is meant the probability of a person developing, at least once, the illness in question on the assumption that he will live to a certain age. . . . Thus, disease expectancy is a kind of computed cumulated risk."¹⁷

Hagnell reported a lifetime prevalence per hundred of: psychosis 1.7, neurosis 13.1, and mental deficiency 1.2. He mentions that these prevalence figures stand midway between reports of high prevalence, such as the Stirling County Study (psychosis 0.9, neurosis 51.9, mental deficiency 4.8 per hundred) and Lemkau's 1943 study (psychosis 0.67, neurosis 0.31, mental deficiency 0.68 per hundred).¹⁸

Hagnell's figures are higher than those reported by Essen-Möller on the same population, because Essen-Möller's 1947 study had "to proceed cautiously." However, in 1957, Hagnell found that the population was very cooperative and that he was able to probe for psychiatric symptomatology openly.

Hagnell estimated the duration of mental illness. He placed subjects into four groups according to duration: (1) less than 4 months, about 37%; (2) 4–12 months, about 30%; (3) 1–3 years, about 12%; and (4) more than 3 years, 20%. Furthermore, there was a tendency for more older people to have illnesses of longer duration than for younger and middle-aged people.

Incidence and Risk: To report incidence, Hagnell employed the various criteria that were used for defining caseness. The ten-year incidence rate for consulting a psychiatrist for the first time 1947–1957 was 4.3% for men and 7.1% for women; the ten-year incidence rate for admission to a psychiatric unit of any type was 1.4% for men and 2.1% for women; and the ten-year incidence rate for first admission to a mental hospital was 0.5% for men and 0.7% for women. From these data, Hagnell calculated that the *estimated cumulative risk* for being admitted to a mental hospital at some time during one's lifetime is 4.1% for men and 5.5% for women.¹⁹ Hagnell concludes: "*The estimated cumulative risk for all mental illnesses up till the age of 60 is 43% for men and 73% for women*" (Italics ours).²⁰

Comparisons of these rates with those of other studies reveal that Larsson and Sjögren,²¹ in 1954, reported that the mental hospitalization risk up to the age of 80 was 5.9% for men and 6.1% for women. Hagnell notes that the risk for being admitted at least once to a mental hospital is "variable"; in Scotland it is 3%, in London 5%, and in New York State 9%.

To study incidence further, Hagnell evaluated impairment, diagnosis, and duration of illness on only those subjects who had not been diagnosed as mentally ill ten years earlier. The crude incidence rate based on impairment ratings was 11.3% for men and 20.4% for women. According to diagnosis, the ten-year incidence rate for psychosis was 0.6% for men and 0.6% for women. The estimated cumulative risk up to the age of 60 for psychosis was 3.5% for men and 3.6% for women. Table 16²² shows Hagnell's ten-year incidence rates and expectancy risk for various diagnoses.

Social Correlates: In 1947, the subjects had been classified according to marital status, occupational status, and annual income. Therefore, in 1957, Hagnell was able to determine that the ten-year incidence of mental disorder was somewhat higher in the married women than in the unmarried. But he found no differences in the incidence between the married and the unmarried men.

The ten-year incidence of developing a mental disorder according to occupational status showed only two distinctive findings. Women, whose husbands were farmers, had a very low incidence rate. And, the ten-year incidence rate was greater for both sexes (particularly for women) in the highest than in the lowest occupational positions. Hagnell believes that these women have been influenced deleteriously by social change; they are ambitious and upwardly mobile, but do not find satisfying niches in society.

In 1947, the subjects had been divided into five annual income levels: (1) less than 1,000 crowns, (2) 1,000–3,000 crowns, (3) 3,000–6,000 crowns,

Table 16. Hagnell's 10-Year Incidence Rates and Expectancy Risk^a Based on Diagnosis

Diagnosis	Men		Women	
	Rate	Expectancy	Rate	Expectancy
	(Percentages)			
Schizophrenia	0.4	2.1	0.1	0.7
Organic brain syndrome	0.7	5.4	0.2	1.4
Senile psychosis (age 60+)	22.3	78.8	24.7	79.6
Other psychoses	0.1	1.1	0.4	2.8
Anxiety	0.9	5.8	2.3	15.3
Depression	0.6	5.0	1.4	9.7
Mixed neuroses (severe)	0.2	1.1	1.3	9.3
Neurosis plus somatic illness	0.4	3.9	0.7	5.2
Childhood neurosis (up to age 19)	1.1	6.2	0.7	0.3

Adapted from O. Hagnell.²²

^a Up to the age of 60, except for senile psychosis.

(4) 6,000–12,000 crowns, and (5) 12,000+ crowns. Those in the lower income groupings had a lower incidence rate than the others. When the population was divided into two groups (income above and below 6,000 crowns per annum), no differences in the incidence rate were found for either men or women. But incidence rates were somewhat higher than expected in two subgroups: men in the 6,000–12,000 crown per year income level and women in the 3,000–6,000 crown per year income level. Hagnell believes that the Swedish social system is responsible for the finding that low income was not associated with an increased incidence of mental disorder.²³

Hagnell also studied those who had moved out of Lundby during the decade. Both the men and the women who had moved to a large city had higher risks for developing mental illness. But men who had moved into rural districts had a lower risk. His impression was that “those who moved to larger towns first develop their mental disease after having moved.”²⁴ This supports Ödegaard’s findings about migration into Oslo in the post-World War II era.

Lundby: Some 1947–1957 Comparisons

In 1947 Essen-Möller grouped the subjects into three categories according to their subjective complaints. In 1957 Hagnell found that 50% more men and 40% more women who had *somatic-asthenic* complaints in 1947 had a higher incidence of mental illness than the population as a whole. Of those who had had *autonomic* complaints in 1947, about 50% more men and women than expected had developed mental disorders. Particularly, those who had reported migraine in 1947 were found to have twice the frequency of mental illness in 1957 than the population as a whole. Among those who in 1947 reported *mental complaints*—fatigue, nervousness, huntedness, and susceptibility to adversity—30 to 70% more men and women than expected had mental illness in 1957.²⁵

The Scandinavians are particularly interested in asthenia and its possible relationship to mental illness. Compared to the total population, Hagnell’s age-specific incidence rates showed that disproportionately high percentages of women who had been classified as asthenic in 1947 had mental illness in 1957, whereas fewer men classified as asthenics in 1947 had mental illness in 1957.

Hagnell searched for possible relationships between Essen-Möller’s scores on the subjects’ four Sjöbring personality traits (variations) and the subsequent development of mental illness. A few weak associations were found. Those scoring low in 1947 on Validity (retiring, careful) tended to show a slight preponderance of mental illness in 1957. More of those designated Subsolid in 1947 (agile, impulsive) tended to have mental

illnesses in 1957 than those originally judged as Medio- or Supersolid. But there were no associations between the other personality traits considered to be normal personality variants and the development of mental illness.

Among those whom Essen-Möller had classified as having *No pathology*, Hagnell found that there were 30% fewer than expected cases of mental illness in men and 50% fewer than expected in women. But men judged previously as having *Conceivable* or *Probable* pathology had higher than expected rates (not enough had been judged as *Evident* to provide valid results). Women judged previously as having *Probable* pathology had higher rates than expected, but those earlier judged as having *Evident* and *Conceivable* pathology had the expected rate.

Using information from all sources, Hagnell found that during the decade 1947–1957 significantly fewer men than expected and significantly more women than expected developed mental illnesses. Hagnell explains this sex difference on the basis that many men were considered to be “asocial” rather than mentally ill.

Relationships Between Physical Ailments and Mental Illness: More of those who reported frequent infections in 1947 had mental illnesses in 1957 (20% more men and 50% more women) than the age-specific incidence rates for all the persons in the study. Hagnell notes that Beard, who described neurasthenia in the 1870s, believed that there was a relationship between frequency of infections and mental illness. Also, Slater²⁶ found in 1943 that soldiers who developed war neuroses tended to report a high frequency of infections.

Table 17²⁷ shows that more men who in 1947 had reported chronic polyarthritis, particularly circulative diseases (hypertension, coronary or valvular heart disease), or peptic ulcer (age group 40–59) tended to have mental illnesses than expected. More women who in 1947 had reported proneness to infections, encephalitis and meningitis, or endocrine disturbances had mental illnesses in 1957 than expected.

Lundby: Predictive and Prognostic Implications

Since baseline data had been obtained by Essen-Möller in 1947, Hagnell conducted further analyses to search for findings that might have had predictive significance. A discriminant analysis showed that the presence or absence of the following 20 factors (Table 18²⁸) could be used to predict mental health or illness a decade later. He notes that these should be considered “appraisal” factors because they are based on theoretical assumptions, and, even though they were tested by a ten-year follow-up, we should recall that 85% of the population remained healthy.

Finally, Hagnell sought to determine how attacks of mental illness had been distributed during the ten-year period. Those who suffered from

Table 17. *Physical Ailments and Mental Illness Relationships*

Item	Person years obs. 1947-1957	Observed number with mental disease (O)	Crude average annual incidence/100	Age specifically expected number with mental disease (E)	O/E	P
Men						
Proneness to infections	1818.0	20	1.1	16.5	1.2	
Orthopedics	1351.5	16	1.2	11.2	1.4	
Chronic polyarthritis	30.0	0	0.0	0.3	—	.10
Rheumatic fever	280.0	2	0.7	2.6	0.8	
Encephalitis and meningitis ^a	182.0	2	1.1	1.7	1.2	
Endocrine disturbances ^a	48.5	0	0.0	0.4	—	
Circulative diseases ^a	303.5	8	2.6	2.8	2.9	.001
Peptic ulcer	197.5	3	1.5	1.3	2.3	
Peptic ulcer 40-59 years ^a	187.5	3	1.6	1.2	2.5	.05
Women						
Proneness to infections	1885.5	64	3.4	43.0	1.5	.00001
Orthopedics	250.0	9	2.4	17.6	1.1	
Chronic polyarthritis	200.0	3	1.5	4.1	0.7	
Rheumatic fever	240.0	6	2.5	5.2	1.1	
Encephalitis and meningitis ^a	203.5	8	3.9	4.5	1.8	.05
Endocrine disturbances ^a	350.0	13	3.7	7.9	1.7	.025
Circulative diseases	500.0	14	2.8	10.3	1.4	
Peptic ulcer	120.0	3	2.5	2.5	1.2	
Peptic ulcer 40-59 years ^a	80.0	2	1.8	1.4	1.4	

Adapted from O. Hagnell.²⁷^a Chi-square test used, age group 15-59 years.

Table 18. Predictions of Mental Illness (items used for the discriminant analysis and their l_i coefficients)

l_1	Somatic-asthenic complaints	0.0901
l_2	Autonomic instability	-0.3767
l_3	Migraine	0.5189
l_4	Tense, restless	0.0656
l_5	Asociality	0.6172
l_6	Early asthenia	1.6283
l_7	Late asthenia	0.3884
l_8	Infections	0.4539
l_9	Encephalitis	0.3479
l_{10}	Endocrine disturbances	0.7029
l_{11}	Circulative diseases	0.6325
l_{12}	Peptic ulcer	0.3760
l_{13}	Mental complaints	0.3121
l_{14}	Lesion	0.5043
l_{15}	Sex	0.9240
l_{16}	Farmer	-0.3051
l_{17}	Artisan, skilled worker	0.6092
l_{18}	Solidity (so-factor)	-0.4051
l_{19}	Age, linear	-0.5800
l_{20}	Age, square	-2.5706

Adapted from Hagnell.²⁸

serious or "medium" mental illnesses had been randomly distributed in the preceding ten years, but there was a trend for the rate of mild cases to increase for those under the age of 50 and to decline for those over the age of 50. However, the population was ten years older in 1957.

Hagnell found a peak for mental disorders in subjects aged 20–40. He expressed concern about neuroses beginning in early middle age, and asked why women at that age seem to be so particularly vulnerable. In 1957 Hinkle and Wolff²⁹ stated that "all illnesses are more likely to occur in periods when the individual is having difficulty in adapting to the total configuration of his life." Hagnell suggests that the greater frequency of mental illness in women than in men may be attributable to greater role ambiguity for women in the mid-twentieth century, particularly women entering mid-life.

Hagnell considered the part played by an investigator in an epidemiologic experiment—the investigator is part of the experiment. Consequently, it is possible that Essen-Möller's work in 1947 had called individuals' attention to symptomatology for which they later sought treatment, and, thus, were subsequently defined as cases.

The importance of the Lundby Study is that it is the only major investigation of the incidence of mental disorder in the general population in the Western world. The prevalence, incidence, and expectancy rates found for mental illness in the general population are now standards against

which other investigators can compare the results of their studies. Establishing these rates was a fundamental accomplishment in psychiatric epidemiology.

The second major reason for this study's importance is that mental disorder did not appear more frequently in lower than in higher socioeconomic groups. Hagnell emphasizes: "There is no indication that those in the lower economic groups have any greater risk of falling victims to mental disorders than have other groups. The tendency is rather the opposite. This is valid too for those in the lowest occupational categories, e.g., unskilled industrial and rural workers, who show no increased risk of mental disorder. Regarding occupational categories, there is an increased risk among skilled workers, especially among the female family members."³⁰

These findings have vast implications for governmental planners, social scientists, and psychiatrists—indeed, all the members of democratic societies who theoretically have some voice in determining the nature and quality of the society in which they live. Where there is no extreme poverty, there are few differences in mental illness rates across the social-class spectrum. In fact, those who appear to be at higher risk, as revealed by Hagnell's findings, are some in the middle and upper strata. Presumably, they are suffering from stress related to striving and role ambiguity; particularly the women in the upper stratum were the ones at highest risk—perhaps, as a group, they are buffeted more than others by the swirling winds of social change. The results of the Lundby Study, therefore, only discount—do not dismiss—the role of some social processes in the production of mental illness. By implication, the influence of genetic factors appears to be significant, but these are inextricably intertwined with social selection processes and require intensive follow-up studies to ascertain their etiologic significance.

Hagnell concludes by calling for more comparative studies using improved methodologies. He hopes that then "we should be able to obtain a more positive concept of recognizing factors which have connexion with the origin of mental illness, and thereby establish a better basis for an active prevention of these conditions."³¹

Psychiatric Disorder in Stirling County and Lundby—1971

This comparative study of a sample from Stirling County and one from Lundby, Sweden, carried out by D. Leighton, O. Hagnell, and their colleagues, is probably the most precise cross-cultural investigation of its type. The investigators from Stirling County and Lundby met together to design the research and to work out methodologic difficulties. To insure comparability, only the findings from the town Bristol (not all of Stirling County) were matched with a sample from Lundby. Bristol and Lundby

had many similar characteristics; both were small coastal towns with populations in the 2,500–3,000 range.³²

Bristol was composed primarily of English and French Acadians. Educational opportunities had increased during the 1950s and 1960s. Since World War II, the inhabitants' participation in both Protestant and Catholic Church activities had diminished. Most of the residents worked in a variety of small businesses; a few required public assistance, which in Canada, unlike Sweden, is considered to be charity. In the decades following World War II, the social structure changed; the elites diminished in number and the middle class expanded, but a definite lower class still existed. Bristol had numerous church, service, fraternal, political, and other social organizations. Families tended to be small and not to extend into kinship networks, and the roles of women had become less well-defined. Parents expressed concern about the increasing movement of the young people to the large cities of Canada. Sentiments expressed about Bristol were that it is a pretty good place to live, everyone has to look out for himself, and it requires hustle "to make enough money for the things we all want." Some believed that there were few opportunities for achievement. "It is pretty, especially in the summer, but for getting ahead it is hopeless."

Lundby had been a somewhat isolated farm area until World War II when it was brought much "closer" to nearby cities. "The close-knit, self-sufficient provincial village loosened its internal ties and reached out to take part in the modern world." The influence of the church (Lutheran) declined. The inhabitants showed increasing eagerness to obtain more education. Since World War II, the people of Lundby had begun to work in businesses and offices, as well as on the farms. The Swedish welfare program extended social benefits to everyone. Class distinctions had faded; the lower class was absorbed into the expanded middle class. Prestige rather than income was the basis for some hierarchical ranking, but the society was considered to be egalitarian. In Lundby there were few social groups, but the large labor union was influential, and the development of cooperatives counterbalanced the shortage of other associations. The sentiments expressed about Lundby were that it was developing a suburban character and that it was a good place in which to live, although family life and religion were less important than in the past. Furthermore, Lundbyites believed in cooperation rather than in individualism, and they strongly supported the government's welfare policy.

The American and Swedish researchers used the Stirling County method for judging the probability of caseness (see page 194). Table 19³³ shows that the risk (expressed as the mean ridity) for mental illness in Lundby, 0.37, was considerably lower than the risk in Bristol, 0.47. Also, the risk for men in Lundby, 0.34, was lower than the risk for men in Bristol, 0.41, and the risk for women in Lundby, 0.40, was considerably lower than the risk for women in Bristol, 0.52. As a whole, the risk in

Lundby for both men and women showed a steady increase with advancing age as it did for the women in Bristol. But for the men in Bristol, those in the age group 50–59 had a higher risk than did men in other age groups in both Bristol and Lundby.

One of the most striking findings is the variation with occupational levels. Table 20³⁴ shows that the risk was vastly different in Lundby than in Bristol. In Lundby the lowest risk, 0.30, was found in the lowest occupational level, and the highest risk, 0.47, was in the higher occupational levels. In Bristol, however, the risk varied inversely with social class (as measured by occupational levels). The lowest risk in Bristol, 0.47, was in the highest occupational grouping and was similar to the risk found for that grouping in Lundby. But in Bristol the risk for the lowest occupational level, 0.57, was almost twice as great as the risk for Lundbyites in the lowest occupational level, 0.30.

This finding is of considerable importance for social psychiatry. It suggests that low social status (as measured by occupational level) is not necessarily associated with higher risk for mental illness; indeed, in Lundby it was strongly associated with a very low risk. The authors suggest that even the low-occupational-level Lundbyites see themselves, and are seen by the community, as belonging to the “middle class.” Also, Sweden’s welfare system has produced egalitarianism.

Finding that those in Lundby’s lowest occupational level had a lower risk for mental illness than the other groups in both Lundby and Bristol does not refute the social causation hypothesis. The deprivations associated with poverty are not found in Sweden. Therefore, the marked difference in risk between groups in the lowest occupational levels in Bristol and in Lundby suggests that lack of money may be the major factor associated with the higher rates of mental disorder usually found in the

Table 19. *Psychiatric Disorder by Age and Sex, Lundby and Bristol Samples*

Age (years)	Ridits					
	Lundby			Bristol		
	Men	Women	Total	Men	Women	Total
20–29	0.27	0.26	0.26	0.35	0.39	0.38
30–39	0.35	0.28	0.32	0.41	0.49	0.46
40–49	0.21	0.56	0.39	0.44	0.56	0.48
50–59	0.38	0.43	0.41	0.50	0.56	0.54
60–69	0.38	0.46	0.43	0.32	0.69	0.49
70+	0.55	0.33	0.43	0.36	0.82	0.46
Total	0.34	0.40	0.37	0.41	0.52	0.47
Number	103	101	204	66	73	139

Adapted from D. C. Leighton and Hagnell.³³

Table 20. *Psychiatric Disorder by Occupational Level, Lundby and Bristol Samples*

	Ridits	
	Lundby	Bristol
Level I	0.47	0.47
Level II	0.38	0.44
Level III	0.41	0.47
Level IV	0.32	0.42
Level V	0.30	0.57
Total	0.37	0.46
Number of subjects	202	120

Adapted from D. C. Leighton and Hagnell.³⁴

lowest social stratum. The results from Lundby indicate that working as “farm labor, unskilled labor, [or] industrial labor” is associated with good mental health. We speculate that this finding is related not only to the lack of stigma attached to such employment and its implicit status, but also to the adequacy of income and lack of poverty in Sweden. Our Florida Health Study of the symptomatology of depression and socioeconomic status showed that the frequency of symptoms varied inversely with the level of annual family income and that very large percentages of respondents with incomes under \$3,000 per year reported a wide variety of symptoms of both somatic and mental distress.³⁵ It appears that the opinions and attitudes people have of themselves and others—intrinsic to mental health or illness—are, to a large extent, dependent on some degree of financial security to ease “the struggle for existence.”

Iceland—1957–1964

After estimating the need for mental health services in Iceland in 1953 by counting all persons who were receiving care, Tómas Helgason³⁶ planned an intensive and extensive study of Iceland’s 166,831 inhabitants. He believed that the rate for all neuropsychiatric disorders, 9.2 per 1,000, which he had found in his rates-under-treatment study, did not provide reliable information on the extent of psychiatric morbidity in the country. The objectives of his second study were (1) to investigate the frequency and distribution of mental disorders in Iceland, and (2) to compare the frequency and distribution with that in other countries, particularly Denmark.

Helgason wanted to use the same methodology that Fremming³⁷ had used in his study of Bornholm. Therefore, Helgason used the cohort birth register method that Klemperer had devised in 1933. All Icelanders born

1895–1897 and who were alive in Iceland on December 1, 1910, were selected. He obtained information on them mainly from intensive interviews with all the physicians in Iceland. The Iceland Health Care System requires every person to be a member of a general practitioner's panel, which usually consists of about 1,250 adults. The physicians, therefore, have complete records on every person. In addition, Helgason obtained information from relatives and key informants about those who had died, and he sent questionnaires to, or interviewed, 235 probands who had sought general medical care infrequently. Helgason also had access to public and hospital records; and, in his travels to Denmark and the United States, he collected data about emigrants. He acquired sufficient information about 99.4% of the 5,395 probands (3,843 were alive, 1,498 had died, and 54 had disappeared).

About 78% of the index cases were born in rural communities, but during the ensuing 50 years most had moved to urban areas. Only about 72% of the men and 73% of the women had ever been married; the percentage of single persons in 1957 was a little higher than that generally found in Western societies—only 60% were married at the time of the study. The probands were grouped into three social classes: Class I (high) about one-fifth of the cohort; Class II (middle) about one-third; and Class III (low) about one-half.

Of the 5,395 probands, 1,543 (28.6%) were considered to have some type of mental disorder. The percentage of women, 30.0%, exceeded slightly the percentage of men, 27.2%. The total expectancy up to the age of 61 for mental illness was 32.5% for men and 35.3% for women, considerably lower than that reported by Hagnell. For the more major disorders only, the expectancy was 18.9% for men and 19.3% for women. The most frequent illnesses were: for men—neuroses, alcoholism, psychoses, and psychopathic personality disorder; for women—neuroses and psychoses. The expectancy of psychosis up to age 61 was 4.7% for men and 6.9% for women.

The total expectancy for mental illness varied with social factors. It was higher for those living in urban than in rural communities. The expectancy for men who migrated and for nonmigrators was about the same, but those who migrated to rural areas in Iceland had lower expectancies than the other two groups. The expectancy for women who migrated to the one major city was higher than it was for nonmigrant women. The total expectancy for mental disorders was slightly below 30% in Classes I and II, but significantly higher, about 40%, in Class III. Helgason believes that mental health disorders existing when the probands were, on the average, 14 years old (in 1910) "is a major factor in the differential distribution of the expectancy according to the social criteria."³⁸

Table 21 shows the expectancies for various mental illnesses.³⁹

Table 21. *Expectancy up to the Age of 61 for Mental Illnesses*

Type of illness	Men	Women
	(Percentages)	
Psychoses	4.73-4.82	6.90-7.16 ^a
Schizophrenia	0.57-0.69	0.90-1.02
Manic-depressive	1.80-2.18	2.46-3.23
Psychogenic (reactive)	0.81	1.24-1.50
Epilepsy	0.59	0.52
Neuroses	9.00-10.00	17.00-19.00
Alcoholism	9.91	0.97
Intellectual subnormality	3.08-4.07	3.16-3.68
Psychopathic personality	3.74-5.02	3.45-4.09 ^a
Organic	1.84	2.67

Adapted from Helgason.³⁹

^a Statistic adjusted from original work on the basis of personal communication from T. Helgason.

Some of Helgason's other major findings are:

1. Expectancy of psychoses was higher among those living in rural areas, nonmigrants, the unmarried, and social Class III (low). (About 60% of psychotics were "socially recovered.")
2. The mortality rate for psychotics was higher, 37%, than for the rest of the cohort, 28%.
3. Expectancy of neuroses was higher among those living in urban areas and migrants, but was not higher according to either marital status or social class.
4. About 50% of the alcoholics had other psychiatric diagnoses; also, alcoholics had an increased mortality rate. (Epidemiological characteristics of alcoholism and of the neuroses were similar.)
5. Mortality of mental defectives was high.
6. Lifetime prevalence for mental disorder of any type was 29.35% for men and 32.34% for women.
7. Of those with mental illnesses, 3.4% were in hospitals; 10.5% were disabled by illnesses but not hospitalized; 9.6% were disabled by physical illnesses; and 76.5% were employed (60.4% of these were symptomatic).
8. Suicidal risk up to the age of 61 was 1.51% for men and 0.80% for women.
9. Comparisons with Fremming's 1951 study of Bornholm, Denmark, showed: no difference in expectancy of psychoses; probably higher expectancy of neuroses in Iceland; higher expectancy of alcoholism in Iceland; no difference in expectancy of mental deficiency; and no difference in the epidemiology of psychopathic personality.
10. Helgason believes that there were no significant differences in the expectancy of mental disorders in Iceland and Bornholm. From his data, however, it does appear that there are some epidemiologic differences,

e.g., rates were somewhat higher in Iceland than in Denmark and the expectancy for the neuroses and minor disorders seem to be considerably higher in Iceland than in Bornholm.

Helgason concludes: "mental disorders are a major public health problem and probably the major problem, the prevention and treatment of which calls for the greatest effort of research and planning on the part of the health authorities. The results of studies like the present can give some indication of where and how this effort should be directed."⁴⁰

Midtown Manhattan Restudy II—1954–1974

During the last seven years, Leo Srole⁴¹ has conducted an intensive follow-up of the original 1,660 respondents from the Midtown Manhattan Study-I, launched in 1952. In view of the mobility of the New York City population, the trace operation was an enormous, time-consuming undertaking. Of the original 1,660 respondents, 266 were known to have died, and 536 could not be located. A total of 858 were "alive and located"; of these, 695 were reinterviewed by the summer of 1974. The reinterview instrument contained 82 symptom items that had been used in Midtown Manhattan-I and provided the basis on which the psychiatrists had made their mental health and impairment ratings in the 1950s. From these items and the original ratings, Srole devised a computerized model that simulated the clinicians' ratings; a set of 22 symptom items constitute the "core" of the model.

The 1954 Midtown-I ratings of the 695 respondents, who were then aged 20–59, showed that 22.0% were "well" and that 13.9% were "impaired," quite similar to the percentages obtained by the 1974 computer ratings of the population (now aged 40–79)—25.0% "well," 11.9% "impaired." These results are shown in Table 22.⁴²

Although the percentages in the corresponding categories are almost the same, this did not mean that the same respondents were in the same

Table 22. Midtown Manhattan Cohort's Distributions on CMHR Continuum

	In 1954 (age 20–59)	In 1974 (age 40–79)
1. "Well"	22.0%	25.0%
2. "Mild"	42.7	42.0
3. "Moderate"	21.4	21.1
4. "Marked"	9.2	7.5
5. "Severe"	4.3	3.5
6. "Incapacitated"	0.4	0.9
4–6 = "Impaired"	13.9	11.9
N = 100%	(695)	(695)

Adapted from Srole.⁴²

categories. Further analyses showed that 32.5% of the original panel had an improved health status and that 26.6% had experienced a decline in health status. Srole states that "we can liken the twenty-year differences to a stairway, on either side of which is an up-escalator and a down-escalator. Those apparently of similar mental health in 1974 as in 1954 stand fixed on the central five-step staircase, and together hold a plurality of two-fifths of the panel. . . . The ascending escalator in twenty years has carried almost as many respondents (i.e., about one-third of the cohort) to seemingly better mental health. And the descending escalator has brought down a somewhat smaller minority (i.e., roughly one-fourth of the panel) to less favorable levels of emotional health."⁴³

Further analyses showed that almost 50% of those who had been "well" and almost 25% of those rated "mild" in 1954 had a less healthy rating in 1974. But 50–70% of those earlier rated "moderate," "marked," or "severe-incapacitated" had an improved mental health status in 1974. The investigator has the data which should provide at least partial explanations for these remarkable shifts in mental health status. More intricate analyses of subcohorts suggest that at least two different groups of the respondents traversed two different segments of the twentieth century: "two segments of modern history may have exerted different impacts on . . . mental health."⁴⁴

This remarkable study shows that prevalence rates were about the same for the group after 20 years. This finding, however, must be tempered. Mental illness is associated with increased mortality; it is possible that a disproportionate number of those who had died or could not be located would be rated impaired if they had been interviewed in 1974, thereby increasing the percentage of "impaired." Nevertheless, this is a significant study in psychiatric epidemiology and one that holds promise for both enhancing our knowledge of social processes and mental health and penetrating "the frontier area of socio-psychiatric history."⁴⁵

We have little accurate information about the true prevalence of mental disorder in the community, despite the intensive work of psychiatric epidemiologists for almost two centuries. One reason is that mental illness has been variously defined throughout the years in different societies. This basic problem—the definition of mental illness—continues to hamper researchers. As a result, many have used differing methodologies to determine the prevalence of mental disorders that were operationally defined in many instances to fit the research design. For this reason and others, such as accessibility to the community and the availability of resources, investigators have obtained results which defy comparability. Thus, basic conceptual and methodological difficulties have retarded the quest for prevalence.

Table 23 presents some of the results of nineteenth-century prevalence studies.

Table 23. Prevalence of Mental Illness—
Nineteenth Century

Investigator	Site	Prevalence ^a
Burrows	Great Britain	0.5
1820	Scotland	2.5
Brigham	Connecticut	3.8
1832	Scotland	1.7
Griesinger	Prussia	1.5
1845	Germany	2.0
	France	1.3
	England	1.3
	Norway	3.2
Jarvis	Massachusetts	3.2
1855		
Tuke	Great Britain	3.3
1858	Scotland	2.6

^a Rates per 1,000.

All of these investigators, with the possible exception of Jarvis, believed that their estimates were too low. Griesinger commented about the untrustworthiness of statistics, and noted that even when the results were more precise they could not be used for comparative purposes because they had not been collected by the same method. He concluded: "Of many districts our knowledge is limited to an average calculation of the number of the insane in asylums, so various in different countries."⁴⁶

Although these nineteenth-century data are only of historical interest, early investigators pointed out the problems in measuring prevalence. The number of mentally ill reported depended on the availability of facilities, accurate methods for counting, and other factors such as the length of life in various nations—a longer life span usually indicated a larger percentage of mentally ill. Consistently, these pioneers in psychiatric epidemiology observed that many of the mentally ill were at large in the community receiving no care.

In the first half of this century, the numbers found to be mentally ill increased greatly, as shown in Table 24.

Throughout the twentieth century, the results of prevalence studies vary greatly. Studies conducted in the last 25 years have generally reported much higher rates for the prevalence of mental disorder than did those prior to World War II. In 1950 Strömngren noted that the results of the European studies conducted in the 1930s and 1940s indicated that the expectancy rate for total mental abnormalities in Northern Europe was about 12%.⁴⁷ The truly intensive investigations, e.g., Bremer, Essen-Möller, and Hagnell, indicate that the rate is probably in the 15–20% range.

The reports of very large rates, such as 570–690 per 1,000 from Stirling County, led Lin and Standley⁴⁸ in 1962 to assert that the definition of

Table 24. Prevalence of Mental Illness—Twentieth Century

Investigator	Site	Rates per 1,000	
		Total mental disorders	Psychoses
Rosanoff 1916	Nassau Co., N.Y.	16.4–36.4	—
Graemiger 1931	Switzerland	120.0	5.0–6.0
Brugger 1929	Thuringia	13.1	3.8
1931	Bavaria	75.0	5.6
Cohen <i>et al.</i> 1933	Baltimore	44.5	8.18
Lemkau <i>et al.</i> 1936	Baltimore	60.5	6.6
Stromgren 1933	Denmark	120.0	28.0
Kaila 1942	Finland	11.6	6.5
Roth and Luton 1935–1943	Tennessee	69.4–123.7	6.3
Uchimura <i>et al.</i> 1940	Japan	6.8	6.2
Akimoto <i>et al.</i> 1941	Japan	26.5	8.5
Tsuwaga 1941	Japan	30.8	9.2
Bremer 1945	Norway	195.5	35.9
Sjögren 1944	Sweden	44.0	10.0
Lin 1946–1948	Formosa	10.8	3.8
Fremming 1947	Denmark	120.0	81.0
Mayer-Gross 1948	Scotland	90.0	10.0–2.0
Eaton and Weil 1950	U.S.A. and Canada	23.3	6.2
Trussell and Elinson 1951–1959	New Jersey	138.0	2.0
Srole <i>et al.</i> 1954	Manhattan, N.Y.	358.0 ^a	83.0
Leighton <i>et al.</i> 1963	Nova Scotia	570.0–690.0	13.0
Leighton <i>et al.</i> 1963	Africa	400.0 {definite and probable	10.0±
Essen-Moller 1947	Sweden	179.0 ^b	17.4
Hagnell 1957	Sweden	160.0	17.0
Helgason 1957	Iceland	286.0	45.0
Shepherd <i>et al.</i> 1961–1962	London	139.6	5.8
Schwab and Warheit 1971	Florida	310.0	—
Srole 1974	Manhattan, N.Y.	397.0 ^c	—

^a "Moderate" and impaired.

^b Possibly 600 for males and 672 for females.

^c "Moderate" and impaired.

mental illness is being widened. Warren Dunham⁴⁹ agrees, and mentions that the development of the office practice following World War II and the "widening of the net" to include persons with "problems of living" are responsible. Nevertheless, the 15–20% estimate probably indicates the extent of emotional distress conservatively. It seems fruitless at this time to undertake more scattered and diverse prevalence studies, except for the purpose of planning the delivery of services in a community, unless investigators use highly developed methodologies patterned on Essen-Möller's and Hagnell's Lundby studies. New studies should be collaborative, involving a number of investigators from various parts of the world who adhere strictly to an agreed-upon research design.

Most of the studies seem to have ignored the measurement of mental health in children and adolescents. This appears to be a glaring omission, especially at a time when our society has evidence from climbing suicide and delinquency rates that large numbers of our children are disturbed.

In discussing "The Measurement of Health Status," D. Turns⁵⁰ has recently chided investigators and health care planners: "We are fooling ourselves when we pretend we know so little. We do know that the poor, the elderly, the illiterate, the malnourished are at high risk of infectious disease, mental disorders, etc., and go untreated. . . . [T]he raison d'être of epidemiology, after all, is to prevent illness, not to measure it over and over again."

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13

Assessing Hereditary and Sociocultural Factors: Genetics

The phrase 'nature and nurture' is a convenient jingle of words for it separates under two distinct heads the innumerable elements of which personality is composed. . . . It is needless to insist that neither is self-sufficient; the highest natural endowments may be starved by defective nurture, while no carefulness of nurture can overcome the evil tendencies of an intrinsically bad physique, weak brain, or brutal disposition.

—FRANCIS GALTON¹

A brief review of the major findings and research trends in psychiatric genetics is necessary to deepen our understanding of the results of community surveys and studies of the social correlates of mental illness. The long-range goal for researchers in this field is to assess the relative importance of genetic and social factors in the etiology of mental illness, not to continue the age-old heredity versus environment argument. That argument flared into a major controversy in the late 1800s following Darwin's discoveries, but was considered simplistic by astute scientists such as Sir Francis Galton. Galton, a staunch believer in the role of heredity, in the 1870s carried out the early studies on intelligence that laid the scientific foundation for Binet and Simon's development of intelligence tests and the concept of the Intelligence Quotient (IQ). Geneticists now agree that genes are the basic determinants of physical and mental characteristics, but that their expression depends on "many interactions taking place before, at, and after birth."²

Genes act by influencing biochemical reactions, analogous to the catalytic action of enzymes. But even in a metabolic disorder, such as phenylketonuria (PKU) that is produced by a recessive gene and accounts for about 1% of mental defectives, marked retardation can be partially prevented by controlling the amount of phenylalanine in the diet very early in life. Thus, environmental factors conjoin with the genetic either to

ameliorate or to exacerbate the clinical manifestations of genetically determined defects. The manifestations of genetic defects become apparent at different times in life. Some of them appear very early, particularly severe ones such as anencephaly—thought to be due to an autosomal recessive disorder—that occurs in 0.5–3.7 births per 1,000.³ But others, such as Huntington's chorea that is caused by a single dominant gene, may not become manifest until late in life—35 is the average age of onset of Huntington's chorea.

Psychiatric disorders may be produced by dominant genes (Pick's disease), recessive genes (true microcephaly), or intermediate genes (PKU); by mutants occurring spontaneously at any one gene locus only once in 100,000 fertilized gametes⁴; or by polygenic inheritance (variations in intelligence, possibly schizophrenia). Furthermore, some genes act to modify or suppress the expression of others. But the expression of genetic defects cannot be attributed simply to the genes, acting singly or in combinations. Shields and Slater state that "it is the genes which are inherited, and not abnormalities or diseases themselves. The genes can only act in an environmental framework; and their effects will be influenced to a greater or lesser degree by the nature of that environment. One of the aims of genetical research is to discover how much of the total variance occurring in a given population can be attributed to genetical and to environmental differences between individuals."⁵

Population Genetics

Population genetics is a prime epidemiologic concern. Genetic factors and man's cultural legacy are the basic determinants of the characteristics of a group sharing a common gene pool and living in a society that possesses a culture(s). The genetic constitution of such a group, or a typical individual in the group, is termed the genotype; the appearance and characteristics of the individual is the phenotype—resulting from interactions between the genotype and the environment.

Various factors—e.g., educational, economic, and geographic—produce assortative mating that influences a group's, subgroup's, or an individual's genetic composition. *Assortative mating* usually occurs because people with similar educational, cultural, and social backgrounds tend to marry. As Bleibtrau⁶ states, the boy in the tenement usually marries the "girl next door." Thus, groups are stratified socially and genetically.

Intermarriage also affects the gene pool, but intermarrying with a first cousin generally occurs in Western society only once in a few hundred marriages (0.2–0.5%). However, such consanguinity has been reported to be as high as 5% in isolated parts of Scandinavia. In consanguineous marriages, the possibility of producing a homozygous, abnormal trait is

greatly increased when the parents are carrying the recessive genes for the condition. Few investigations of consanguinous matings have been reported. In 1946–1949, Bööck⁷ studied almost 9,000 persons living in an isolated area in Northern Sweden 30 miles above the Arctic Circle. He found an unusually high morbid risk of schizophrenia, almost 3%. The percentage of first-cousin marriages in the parents of schizophrenic patients was $6.8 \pm 2.3\%$. In 1957 Nixon and Slater⁸ found in a controlled study of 355 mental hospital patients whose parents were blood relatives that there were significantly more schizophrenic patients in the index group than in the controls.

Another factor influencing the composition of the gene pool is *genetic drift*—fluctuations in gene frequencies that can be explained only by chance when there is random mating. *Mutations*, obviously, also affect the gene pool; even though they are rare, it is feared that they will become more common as a result of exposure to radiation or ingestion of “artificial” foods and drugs. Population genetics, therefore, must include the study of all of these factors that influence the composition of the gene pool and, very importantly, selection resulting from assortative mating and influenced by numerous social processes operating over the course of a number of generations.

Types of Investigations

Most of the findings in psychiatric genetics have been obtained by five types of investigations: (1) family and pedigree studies, (2) twin studies, (3) studies of adoptees, (4) census studies, and (5) longitudinal studies. Almost all of these types of studies are handicapped by methodologic problems similar to those in other sectors of psychiatric epidemiology. The main ones are: (1) problems with the accuracy and reliability of clinical diagnosis, (2) difficulties obtaining samples that meet even minimal criteria for scientific exactitude, (3) lack of uniformity in data from mental hospitals and other public records, and (4) bias, e.g., family members may distort their genealogical history for many reasons.

Family and Pedigree Studies: As early as 1916, the Rüdín school in Munich developed refined methods for family studies. These workers were influenced strongly by Kraepelin and the early studies carried out by Jost, Koller, and others (see Chapter 9). From studying the families of almost 1,000 schizophrenic patients, Rüdín reported that the rate of schizophrenia for siblings of an index case ranged from 4.5% to 23.0% and that it varied according to the parents' psychiatric diagnoses. Later, Schulz reexamined the group and found that the rate for siblings was higher when the parents' illnesses were insidious and severe than when the parents' illnesses were acute and seemingly precipitated by recognizable events.

In the 1920s, Rüdin and his colleagues developed a method (*empirische Erbprognose*) for calculating empirical risk figures for the expectancy of mental illness in family members of a patient. Some expectancies were that the child of an epileptic had a 5% chance of developing epilepsy; for the child of a manic-depressive, the chance for developing that illness was about 15%; and for the child of a schizophrenic, the chance of developing schizophrenia was 9–20%, according to Shields and Slater.⁹

Twin Studies: Findings from twin studies have provided substantial evidence for the significance of genetic factors in the development of psychiatric disorders. These studies are especially important; although monozygotic (MZ) twins are genetically identical and dizygotic (DZ) twins are dissimilar, both types presumably share reasonably similar parental and other environmental influences. Theoretically, the concordance rate for an illness in MZ twins should be 100%, but it has been found that prenatal factors vary; for example, often one twin receives a disproportionate amount of the placental circulation and generally their birth weights differ. Another factor affecting concordance is that one twin tends to become dominant; when one of the pair becomes mentally ill, usually it is the subordinate.

Sir Francis Galton initiated twin studies in his attempts to investigate hereditary influences on intelligence in the 1880s and 1890s. And in the 1920s and 1930s, Luxenburger's pioneer efforts laid the foundation for continuing studies of schizophrenia in twins. In the 1930s Aaron Rosanoff published twin data derived from state hospital records in the United States. He and his colleagues reported that the concordance rate for epilepsy in MZ twins was about 70%, for schizophrenia 67%, and for manic-depressive psychosis 70%; respective percentages in dizygotic twins were 24%, 10%, and 16%.¹⁰ Slater and Cowie⁴ mention that Rosanoff's work has never received the attention it merited.

Kallmann's¹¹ extensive twin studies gave an impetus to psychiatric genetics during the 1940s and 1950s when psychiatry, particularly in the United States, was strongly oriented toward psychoanalysis. Of 1,232 twin index cases reported by New York State mental hospitals, Kallmann found that 903 were schizophrenic, 75 manic-depressive, 96 involuntional, and 108 had diagnoses of senile psychoses. As presented in Table 25, in 1950 Kallmann reported the following age-corrected expectancy rates, which showed that "the chance of developing either schizophrenia or manic-depressive illness increases strictly in proportion to the degree of blood relationship to the respective type of index case."¹²

In more recent studies these figures have been scaled down, but the proportion varying with closeness of relationship has been verified repeatedly. Kallmann's early percentages are considered to be high because all cases had been obtained from state hospitals and because of diagnostic inconsistencies.

Table 25. Expectancy for Schizophrenia and Manic-Depressive Psychosis in Relatives

	Schizophrenia	Manic-depressive psychosis
	(Percentage)	
General population	0.9	0.4
Half-siblings	7.1 ± 2.9	16.7 ± 10.7
Siblings	14.2 ± 0.84	23.0 ± 3.6
Dizygotic twins	14.5 ± 1.72	26.3 ± 7.1
Monozygotic twins	86.2 ± 2.66	95.7 ± 4.2
Parents	9.3 ± 0.8	23.4 ± 4.0

Adapted from Kallmann.¹²

Adoptee Studies: Adoption studies provide another method for assessing the relative weights and interactions of genetic and environmental factors on the development of mental illness. As discussed in Chapter 4, the work of Rosenthal,¹³ is a well-controlled adoptee study.

Another important study is Heston's¹⁴ investigation of (1) subjects reared in foster or adoptive homes, who had been born to hospitalized schizophrenic mothers, and (2) controls reared in foster or adoptive homes, whose parents had no record of psychiatric illness. The members of both groups, who had been separated from their mothers during the first month of life were followed for about 36 years. Some of the statistically significant differences were that more of the experimental than the control group were found to have schizophrenia, mental deficiency, antisocial personalities, or neurotic personality disorders.

A highly sophisticated research design termed "crossfostering" has recently been used by Wender *et al.*,¹⁵ in the studies of adoptees in Denmark to "explore the hypothesis that rearing by or with schizophrenic parents will produce schizophrenic psychopathology among persons who carry a normal genetic load." The crossfostering method appears to be a scientific way of approaching questions about the relative influence of genetic and environmental factors in the development of schizophrenia. The three-way design involves studying (1) adopted offspring of biologic schizophrenic parents reared by normal parents (index group), (2) adopted offspring of biologic normal parents reared by schizophrenic parents (the crossfostered group), and (3) adopted offspring of biologic normal parents reared by normal parents (the control group). In 1974, these investigators found that the frequency of psychopathology was greatest, 18.8%, in the adopted offspring of biologic schizophrenic parents who were reared by normal parents (index group). The frequency of psychopathology in the offspring of biologic normal parents who were reared by schizophrenic parents (crossfostered group) was 10.7%, and in the offspring of biologic

normal parents reared by normal parents (control group) it was 10.1%. But the difference between the biologic schizophrenic parents' offspring reared by normal parents (index group) and the crossfostered group was *not* statistically significant (p values ranged from $p < .1$ to $p < .3$, depending on "purification" of the groups diagnostically for schizophrenia that was judged to be "Probable Borderline or More Severe").

Census Studies: An example of a modified census study is the large-scale investigation carried out by Sjögren,¹⁶ 1941–1948, of a population of almost 25,000 persons in two rural West Coast Swedish islands, A:bo and B:bo. The investigator obtained a "rather complete registration of individuals born in the area and affected with schizophrenia and low-grade mental deficiency." Then, he gathered data from hospital and other records and by field investigations on 247 "narrowly defined" schizophrenic *propositi* (index cases) and their parents and siblings—a total of 1,790 individuals. Also, he collected data on 237 *propositi* with low-grade mental deficiency (IQ below 50–55) and their parents and siblings—a total of 1,541 individuals.

The results of this "clinico-statistical" study showed that the risk of schizophrenia in the general population was 1.6%. The schizophrenics were about evenly divided according to sex, and evenly distributed according to birth rank. First-cousin marriages were found in $3.7 \pm 1.2\%$ of the schizophrenic cases, not significantly higher than the prevalence of consanguinity, $2.6 \pm 0.6\%$, in the general population. Hallgren and Sjögren¹⁷ state that their findings showed that specific genetic factors are influential in the development of schizophrenia. The morbidity rate for schizophrenia among siblings of schizophrenics was $7.0 \pm 1.0\%$, significantly higher than the risk, 1.6%, in the general population.

The risk for mental deficiency was 0.9–1.0%. The male-female ratio was 62:38; index cases were evenly distributed in terms of birth order. First-cousin marriages were found in $4.3 \pm 1.3\%$ of the parents, not significantly higher than the percentage in the general population, $2.6 \pm 0.6\%$. The morbidity rate for mental deficiency among siblings of oligophrenics was $8.4 \pm .09\%$, significantly higher than the risk, 0.9%, in the general population.

Hallgren and Sjögren reported a statistically significant association between schizophrenia and mental deficiency. The morbidity rate for mental deficiency among the schizophrenic probands was $10.5 \pm 1.9\%$. Generally, these cases with both schizophrenia and mental deficiency involved the high-grade mental defectives; no significant association was found between schizophrenia and low-grade mental deficiency. The authors concluded that specific genetic factors influenced the development of mental deficiency as well as schizophrenia.

An illustration of a more complete census study is the one carried out by Essen-Möller in Lundby, Sweden (see Chapter 12).

Longitudinal Studies: An example of a longitudinal study is the "Iowa 500." Tsuang, Winokur, and their colleagues¹⁸ are following up 525 selected patients (and obtaining interviews with and information about their relatives) admitted to the Iowa Psychopathic Hospital between 1934 and 1944 with diagnoses of depression ($N = 225$), mania ($N = 100$), and schizophrenia ($N = 220$), established according to Feighner *et al.*'s¹⁹ criteria (see Chapter 8). Also, the investigators are following a control group of 160 matched medical and surgical patients (admitted to the University of Iowa Hospital during the same time period) and their relatives.

Preliminary evaluations of psychiatric disability in the population in 1974 showed that after 30 years, 47.5% of the schizophrenia probands had severe psychiatric disability, in contrast to 26.2% of the depression probands and 29.1% of the mania probands. None of the controls showed severe psychiatric disability. After 30 years, no psychiatric disability was found in 89% of the controls, 46% of the depressives, 36% of the manics, and only 19% of the schizophrenics.

The investigators have traced 4,822 (91%) of the relatives of the patients in the various groups. Preliminary reports of the frequency of schizophrenia and affective disorder in 1,332 first-degree relatives indicate that the highest rate of schizophrenia, 5.1%, was in the relatives of the schizophrenic probands, significantly higher than the rate in relatives of depressives, 1.2%, or controls, 0.2%. The rate of schizophrenia in the relatives of manics was 2.1%, not quite significantly higher than the controls. The highest rate of affective disorder was in the relatives of the manics, 10.0%, and the depressives, 9.4%; affective disorder was much less frequent in the relatives of the schizophrenics, 2.9%, or the relatives of the controls, 5.5%. The investigators state: "There is a remarkable difference in the rates between the schizophrenia and the control relatives; and between the schizophrenia and the depressive relatives."²⁰

Many more findings from this first study of its kind in the United States should be published within the next year or two. It is expected that the results will yield valuable information about the role of hereditary factors in mental illness.

Summary of Findings in Psychiatric Genetics

The Risk of Children Developing Psychoses When Their Parents Are Psychotic: In 1952 Elsässer gathered data on 134 pairs of husbands and wives, all of whom were psychotic, to ascertain the frequencies and types of mental disorders in their 424 children over the age of 16. Table 26²¹ shows that about 50% of the offspring had a psychiatric disorder of some type, e.g., schizophrenia 9%, manic-depressive psychosis 7%, etc. Furthermore, the 34 parental pairs with schizophrenia had 28 children with

Table 26. The Children of Two Psychotic Parents^a

Number of parental pairs	Parental mating	Number of children over 16	Nonpsychotic Children		Psychotic Children (doubtful cases shown as †)				Corrected risk for endogenous psychosis (percent)		
			Normal	With psychiatric abnormality (mostly minor) or uncertain information ^b	Schizophrenia	Manic-depressive psychosis	Atypical psychosis	Endogenous psychosis, ?		Total persons	
34	Schizophrenia ×	96	38	30	68	—	—	—	28	39.2	
20	Schizophrenia × Manic-depressive	47	28	5	33	1	9½	2	1	14	44.4
19	Manic-depressive × Schizophrenia	68	35	14	49	6‡	6‡	1	2	19	31.2
23	Manic-depressive × Atypical	91	53	23	76	8	1‡	3	‡	15	21.3
21	Schizophrenia × Atypical	55	32	12	44	—	4‡	4‡	—	11	28.8
17	Manic-depressive × Atypical	67	27	16	43	5	5‡	10‡	‡	24	41.3
134		424	213	100	313	88 certain + 23 doubtful = 111					

^a Table VIII.4, "The Children of Two Psychotic Parents," data of Eisässer, Schulz, and Kahn (after Eisässer, 1952). In Eysenck, H. J. (Ed.): *Handbook of Abnormal Psychology: An Experimental Approach* (© Pitman Medical Publishing Co., Ltd., 1960), Basic Books, Inc., Publishers, New York, New York.²¹

^b The 100 persons in this column consist of 68 who are described as *mässig auffällig* (moderately conspicuous), 15 who are psychopaths, 10 who have a mental defect or neurological disease, and 7 about whom there is insufficient information.

schizophrenia, and the 20 parental pairs with manic-depressive psychosis produced 14 children with manic-depressive illness. Shields and Slater²² state that the risks for these children for developing "schizophrenia or manic-depressive illness were two to three times as great as those facing children of one psychotic and one normal parent." These data also indicate that there is probably not a close genetic relationship between schizophrenia and manic-depressive illness. When both parents had the same illness, that same illness turned out to be the one found most frequently in their children.

Schizophrenia: In 1967 Zerbin-Rüdin²³ summarized the results of 25 studies on the expectancy rates of schizophrenia in family members of a schizophrenic patient. The expectancy for parents was 4.4%, for siblings 8.5%, for children 12.3%, half-siblings 3.2%, grandchildren 2.8%, and first cousins 2.9%. Bleuler²⁴ has found that the risk of schizophrenia is the same in spouses of schizophrenic persons as it is in the general population.

Recently, Pollin²⁵ reviewed the results of twin studies on schizophrenia and calculated the percentage of MZ concordance and the MZ-DZ ratio. Studies before 1960 usually reported concordance rates in the 55–85% range, and a MZ-DZ ratio of about 5:1. Studies in the 1960s, however, reported lower concordance percentages—ranging from a low of 6% in one study to about 60% in a study that used a "wide concept" of schizophrenia. Generally, the percentages for concordance clustered about the 25–35% level and the MZ-DZ ratio was about 3.3:1. These findings show that the percentage of concordance is considerably lower when studies use advanced methodologies. Pollin concludes that "nongenetic factors must also play a substantial pathogenic role, [that] neither genetic nor environmental factors is sufficient, and that most often both are necessary."²⁶ Pollin postulates a stress model that appears to be applicable to other psychiatric disorders as well as to schizophrenia. It will be discussed in Chapter 14.

Recently, Scharfetter²⁷ gathered data on 240 cases of Symbiotic Psychosis (*folie à deux*, induced insanity, psychosis of association) to ascertain whether hereditary factors predisposed to the development of psychosis in the induced partner. He found that the morbidity risk in the inducer's relatives was about the same as that for relatives of schizophrenic probands in general. Also, the risk was similarly high in the relatives of the induced partner, whether or not there was a consanguineous relationship between the inducer and the induced. Scharfetter concludes that "only persons with a genetically determined predisposition are likely to develop a schizophreniform psychosis themselves under the influence of a primary schizophrenic partner."

The particular genetic process involved in schizophrenia is a controversial issue. Two models have been proposed. The first postulates that a single autosomal gene is responsible (according to Slater and Cowie) "for

the appearance of the disorder manifesting itself in all homozygotes (given adequate survival) and in approximately one-quarter of the heterozygotes."²⁸ Slater believes in this monogenic model propounded by Kallmann and considered by Heston to be applicable to the dominant inheritance of schizophrenia and schizoid conditions. The other model proposes a polygenic mechanism involving a threshold effect; a number of genes and their patterning produce schizophrenia when conjoint genetic and environmental factors are favorable for expression. The argument about monogenic versus polygenic factors has important practical implications. If the defect is **monogenic**, then a specific biochemical abnormality should be identifiable; but if it is **polygenic**, researchers would not expect to find a specific biochemical abnormality.

The use of psychotropic medications and the community psychiatry movement that shorten hospitalization are likely to be responsible for an increased incidence of schizophrenia. In the past, schizophrenics were considered to have low fertility rates, and many were hospitalized early in life for years. These factors were considered to be responsible in part for the repeated findings that the frequency of schizophrenia in various Western nations was about 1%. However, this traditional 1% figure is being revised upward, since many young schizophrenic women are now in the community and have more opportunities to become pregnant.

Manic-Depressive Illness: Genetic studies of the affective disorders are particularly important because they may be increasing in frequency or, at least, are receiving greater attention—possibly because semidefinite therapies such as electroconvulsive therapy (ECT), antidepressant medications, and lithium are now available. Also, the rising suicide rate in the young is an indicator that the age base for depression is shifting toward younger age groups, portending an increased frequency. Slater and Cowie²⁹ note that in Great Britain first-admission rates to psychiatric units for affective disorders rose sharply from 1952 to 1966. They calculated that expectancy rates for admission to a hospital for manic-depressive illness in 1960 were 2.4% for males and 3.9% for females; by 1966, the rates had risen to 3.5% for males and 5.8% for females over a 75-year life span. Figure 13 shows the very high admission rates in the 15–20- and 20–25-year-old age groups.

The admission rates for the age group 20–24 changed from about 8/100,000 population for males in 1952 to about 40/100,000 in 1966, and for females from about 15/100,000 in 1952 to about 75/100,000 in 1966. Slater and Cowie³¹ comment: "Such a large change in morbidity over such a short time must be attributed to a change in both public and medical attitudes; though one cannot exclude the possibility that the rapid social changes that are going on in the community are carrying with them an increasing real burden of psychiatric illness for young people, as well as an increasing probability of treatment in a psychiatric center." Furthermore, Slater and

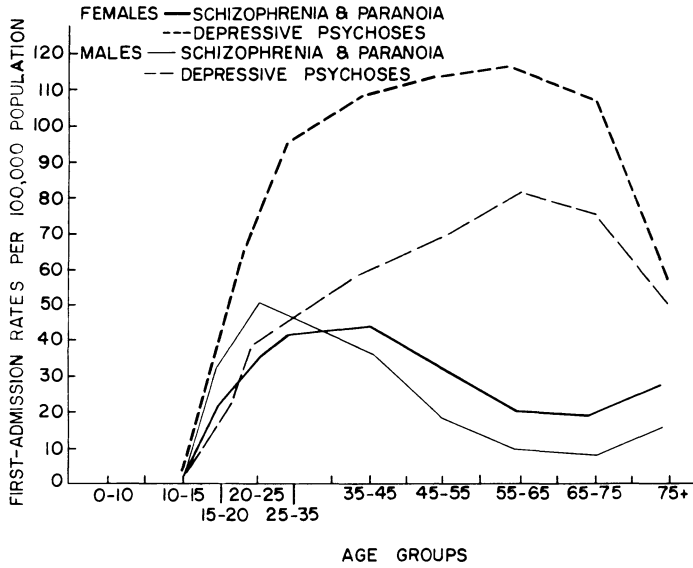


Figure 13. First admissions, means for the 3 years, 1964, 1965, and 1966. Continuous lines = schizophrenia and paranoia; broken lines = depressive psychoses.

Age group	Depressive psychoses		Schizophrenia and paranoia	
	m	f	m	f
0-10	1	2	1	1
11-15	17	32	30	22
16-20	39	70	51	35
21-25	45	96	46	42
26-35	60	109	35	43
36-45	69	115	19	33
46-55	81	116	12	24
56-65	76	106	10	22
75+	50	58	14	27

Adapted from Slater and Cowie.³⁰

Cowie state that "such rapid changes are independent of gene frequencies, which must be regarded as remaining very constant over a few decades."

For years, the expectancy rate of manic-depressive illness was considered to be 0.4%, but Zerbin-Rüdin's³² summary of studies in the United Kingdom and Scandinavia indicates that it was about 1.0% in 1967, and that the male-female ratio was 69:100. Zerbin-Rüdin presented incidence rates of manic-depressive illness for relatives of index cases; these were 7.7% for parents, 8.7% for siblings, and 11.8% for children. When suicides

were added, the rates increased to 11.7% for parents, 12.3% for siblings, and 16.0% for children. (Recalculated by Slater and Cowie³³)

The expectancy risks for affective disorders (including manic-depressive psychosis) in first-degree relatives of a manic-depressive index case also were summarized by Zerbin-Rüdin: for parents 14.3%, for siblings 12.9%, for children 14.8%.³⁴ In 1968 Angst and Perris³⁵ reported that the risks of bipolar and unipolar affective psychoses in relatives of index cases were: for the cyclic (bipolar) probands' parents 14.4–16.0% and for the siblings 21.5–23.0%; for the phasic (unipolar) probands' parents 11.2–13.9%, and for siblings 12.2–15.0%. Thus, the morbidity risks are higher for the relatives of the bipolar than the unipolar cases. Also, the risks for relatives are higher, 21–32%, when the proband's first attack came at an age younger than 40 than when the proband's first attack occurred after the age of 40, 11.8–13.5%.

Twin studies of manic-depressive illness have been handicapped by the small number of index cases; most studies report on only 15–20 MZ and 40–50 DZ pairs. In 1967 Kringlen³⁶ summarized the findings of seven studies in Germany, the United States, England, and Scandinavia. Monozygotic concordance ranged from 33 to 96% (usually 60–75%), whereas dizygotic concordance ranged from 0 to 39% (three studies showed a range from 16 to 26%). A study of bipolar and unipolar affective conditions in twins reported by Zerbin-Rüdin in 1969 shows that the evidence is in favor of these being two distinctive genetic conditions.

Although the mode of inheritance has not been established, many workers believe that manic-depressive (bipolar) illness is transmitted as a single dominant gene. In many of the families of manic-depressive probands, a disproportionately large number of the relatives have histories of alcoholism and sociopathy, indicating the possibility of some type of genetic interrelationship for these three conditions. Rainer³⁷ states that evidence for transmission on the basis of a single dominant gene persists. The morbidity risk for the children of a manic-depressive parent is almost 50% when alcoholism, sociopathy, and marked cyclothymic disturbances as well as manic-depressive illness are included.

Slater and Cowie favor a polygenic mode of transmission, but note that there is little conclusive evidence for either genetic model. Some evidence for the single gene model, possibly sex-linked, is provided by the relationships between linkage to color blindness and the *X* loci. When two genes are carried on the same chromosome, they are linked, depending on the relative frequency of separation through chromosomal breakage and reunion. These genes may be transmitted together from parent to child. Linkage, theoretically, would be close to 100% because recombination is common. Such linkages can be mapped by family studies; particularly, blood types and color blindness offer opportunities for evaluating linkage.

Neurosis: Slater and Cowie propose that genetic factors influence neurotic disorders in two ways: first by establishing the "main lines of personality development," and second by "providing a predisposition capable of activation by environmental forces leading directly into manifestations of a neurotic type."³⁸ They propose that a polygenic model (similar to that for intelligence) is operative along many personality dimensions. This is the model that was developed in early form by Sjöbring, and tested in Lundby, Sweden, by Essen-Möller and Hagnell (see Chapter 12). During World War II, Slater and Slater³⁹ found that the amount of stress required to produce a breakdown was less in soldiers with more neurotic personality traits than in soldiers with fewer neurotic traits. They also reported a correlation between the type of personality and the type of manifest symptomatology, thus suggesting that qualitative as well as quantitative factors were present.

Personality characteristics data obtained from results of twin studies show that (1) there is a high concordance for introversion in MZ pairs, and (2) that the personality traits of MZ twins reared together are quite similar to the traits of MZ twins who had been separated. But the personality traits of the MZ twins in both groups were very different from the traits observed in DZ pairs reared together.⁴⁰ Studies of twins referred for treatment of neurosis have revealed a high concordance rate in monozygotic twins when the proband was diagnosed as having an anxiety state or a personality disorder; little concordance has been found in dizygotic pairs studied. When a proband was diagnosed as depressive neurosis, however, both the MZ and DZ pairs showed little concordance. Shields and Slater conclude: "The anxiety state is best understood on an interactional model. The constitutional potentiality of becoming anxious could then be thought of as a normal component of personality, varying in degree . . . and predisposing to neurotic illness if it is marked in degree or if adaptation is further hampered by obsessive-compulsive, depressive or hysterical tendencies. The environmental stress factor plays an equally important role. Genetic variability in respect of anxiety could well be of adaptive value to the species."⁴¹

Genetic studies of other neuroses, such as the obsessive-compulsive and the hysteric, have yielded few consistent results. Difficulties with diagnosis are formidable handicaps for investigators attempting to carry out family and twin studies of the neuroses.

Alcoholism: Epidemiologic studies of alcoholism have been criticized as imprecise because of response bias and differing cultural standards for "normal" and "abnormal" drinking. But Manfred Bleuler's⁴² family studies of alcoholism are particularly interesting. In one study he used case material from the Payne-Whitney Clinic in New York, and then conducted a comparative study with cases from the famous Burghölzli Clinic in

Zurich. The more complete data from the United States showed that the prevalence of alcoholism in relatives of male alcoholics was: parents 22%, siblings 12%, grandparents 11%, and uncles and aunts 15%. The data from Switzerland showed that the rate for parents of male alcoholics was 33% and for siblings 8%. The rates for the relatives of female alcoholics were considerably lower. In the United States they were: parents 6%, siblings 8%, grandparents 4%, and uncles and aunts 2%. In Switzerland, rates for relatives of female alcoholics were: parents 8% and siblings 2%.

Bleuler found a high rate of alcoholism in the spouses in America; 29% of the male alcoholics' wives were alcoholics and 16% of the female alcoholics' husbands were alcoholics. In Switzerland, the corresponding percentages were 15% for wives of alcoholics and 3% for husbands of alcoholics. Slater and Cowie emphasize that Bleuler's work is significant because he studied the relatives of both husbands and wives.

From one twin study in Sweden, Kaij⁴³ found that the concordance rate for alcoholism in monozygotic twins was 53.5% and in dizygotic twins 28.3%. Slater and Cowie calculated that there was a 114% excess in the MZ group and 32% excess of concordance in the DZ group; they consider the "excess" to be that which occurred more often than could have been expected by chance.

Intelligence: The early genetic studies of intelligence have made a distinct contribution to survey research in psychiatric epidemiology as well as to the understanding of genetic models. Investigators studying intelligence in reasonably homogeneous, limited populations have well-standardized tests for measuring intelligence levels. However, when these tests are used with subcultural groups, it is difficult to evaluate the results because the tests were developed and standardized primarily on white populations in Western society. Blacks and other minority groups point out that the tests measure specific kinds of learning as well as many diverse cultural influences on children. Furthermore, the effects of poverty and other deprivations seem to affect test scores adversely.

The definitive work of E. O. Lewis⁴⁴ in the 1920s in England and Wales led to the dichotomous classification of the mentally deficient into (1) the lower end of the distribution curve for normal intelligence, a normal variation, and (2) the pathological group that is often found to have neurologic and other genetic defects as well as low intelligence. Figure 14⁴⁵ shows that the lower end of the normal variation (sometimes termed "physiological" or "subcultural") merges with the pathological group. The number of persons with IQs below three standard deviations not only is larger than its counterpart—those with IQs above three standard deviations—but also is larger than can be accounted for by normal variation. A major problem is the determination of the cutting point at which the normal variation ends. According to Shields and Slater,⁴⁶ an *IQ of 45 or below* is definitely considered to be pathological, outside the normal variation, and

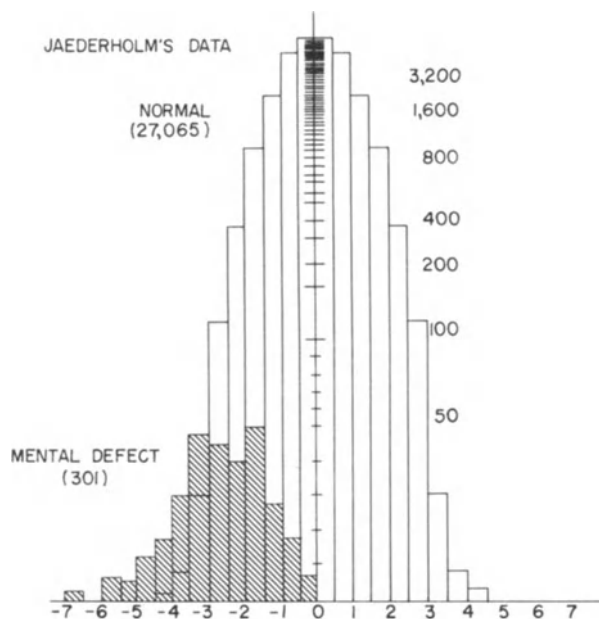


Figure 14. Distribution of intelligence. Estimate based on Binet test of 301 defective and 261 normal children. Jaederholm's data. Scores are shown in terms of standard deviations. (From: Shields, J. and Slater, E.: Heredity and psychological abnormality. In: Eysenck, H. J., Editor, *Handbook of Abnormal Psychology: An Experimental Approach*, © Pitman Medical Publishing Co., Ltd., 1960, Basic Books, Inc., Publishers, New York, New York.⁴⁵) This figure (Fig. 8.10 in *Handbook*) originally appeared in the *Annals of Human Genetics* (Cambridge University Press).

caused by environmental (toxic or traumatic influences) as well as by genetic factors (at least five genes must be involved to provide a genetic explanation for mental deficiency). Some of the pathological group will be found in those with IQs in the 45–70 range. Studies of intelligence led to the development of polygenic theories of genetic transmission.

IQs of children and their siblings can be described by linear equations. When there is random mating, relatives' IQs will be correlated according to the closeness of the relationship. The correlation for first-degree relatives, siblings and parents, will be close to 0.5, for a second-degree relative about 0.25, and for a monozygotic twin 0.87. For a given schoolchild whose IQ is far from the mean, either very high or very low, his siblings' or his parents' IQs usually will deviate in the same direction, but not to so great an extent—there is regression toward the mean. Males show greater (about 5%) genetic variability (both very high and very low IQs) than females because females are thought to be protected to some extent by possessing two X chromosomes, in contrast to the male's XY.

The distribution of IQs in the population is strongly influenced by assortative mating and other selection factors, as well as by environmental factors. Slater and Cowie⁴⁷ believe that “there is no general tendency of opposites to associate with one another in companionship, betrothal or marriage.” The relative contribution of intelligence and the environment on IQs has been studied by investigations of foster children and twins. From the results, Slater and Cowie conclude that heredity accounts for about 75–80% of the variance in intelligence.

About 3% of the population of the United States is mentally retarded, according to the standards of the American Psychiatric Association and the American Association of Mental Deficiency that use an IQ of 85 or 84 as the cutting score. (As a legal term, “mental deficiency” is sometimes applied to persons with IQs below 70.) About 87% of the mentally retarded are in the borderline (IQ 68–85) and mild (IQ 52–67) categories; the remaining 13% are in the moderate (IQ 36–51), severe (IQ 20–35), and profoundly retarded (IQ <20) groups. About 135,000 retarded children are born in the United States each year. The great majority of the mentally retarded are trainable and some are educable; fewer than 100,000 require complete custodial care.⁴⁸

Shields and Slater⁴⁹ conclude their excellent discussion of “Heredity and Psychological Abnormality” with the statement that genetic studies attempt to find answers to three basic questions: “the mode of inheritance (formal genetics), how the genes manifest themselves (developmental genetics), [and] the relative share of heredity and environment (analysis of variance).” The first interests the geneticist primarily. The second concerns both heredity and the environment and is of interest to clinicians. The third interests social psychiatrists and other behavioral scientists. “It . . . is a battleground for debate, not always either dispassionate or sensible. [But] the question is still worth asking about conditions which are graded in degree, can be measured with reasonable reliability and accuracy, and are universally distributed . . . [the answers] are rendered obsolete at once by any large and general change on either the genetical or environmental side. It is probable that, as our knowledge increases, we shall turn more and more in other directions.”

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49. Shields and Slater, see Ref. No. 5, pp. 336–337.

14

Stress and Life Events

Can the scientific study of stress help us to formulate a precise program of conduct? Can it teach us the wisdom to live a rich and meaningful life which satisfies our needs for self-expression and yet is not marred or cut short by the stresses of senseless struggles?

—H. SELYE¹

For hundreds of years, concepts of mental illness have stipulated that it is the result of remote and immediate causes (e.g., Battie, p. 93) or, in more modern terms, of predisposing and precipitating factors. The immediate or precipitating causes consist of events and conditions that we now label “stressful.” In this chapter we will summarize the physiological background for the concept of stress that has been adopted and adapted by psychiatry, look at early studies on stress that began during World War II, and then review the ongoing series of investigations on health and disease in normal populations and the studies of life events and their relationship to illness.

During the past 30 years the word “stress” has been used loosely in the health sciences. It has been applied both to events and conditions (the cause) that produce changes in the organism and to the changed state itself (the result). In this chapter we will use the word “stress” to denote a changed state in the organism produced by stressors or stressful events and circumstances. *The Oxford English Dictionary* mentions that the word “stress” has been used since the early fourteenth century as a shortened version of “distress,” and also as a term for a force or pressure upon a mechanical object or the mind.

The Physiological Background

Our concept of stress grew out of the Darwinian theory of adaptation and was developed by physiologists, especially Claude Bernard, Walter B.

Cannon, and Hans Selye. Selye's² three-stage General Adaptation Syndrome was formulated as a nonspecific stress model that explained mental and physical reactions to stressors and also certain "diseases of adaptation." Animals exposed to a variety of stressors (e.g., cold, trauma, radiation) responded in a characteristic physiological way. Immediately after being stressed, the *alarm reaction* occurred; the animal went into a shocklike state that was followed by a rebound (countershock). Repeated exposure to the stressful stimuli led to the *stage of resistance* that was eventually succeeded by the *stage of exhaustion*.

Selye was able to demonstrate that the physiological mechanisms involved neuroendocrine responses, primarily activation of the pituitary-adrenal axis. For example, during the stage of resistance the animal's adrenal cortices were hypertrophied; when exhaustion ensued, the adrenal cortices were depleted and atrophied.

Selye conceptualized a stressor as an event or process that produced some type of adaptive or maladaptive response. Originally, he visualized stress as the "wear and tear within the body." But after he saw that stress was a "dynamic protective" as well as a destructive process and that it was difficult to distinguish precisely "between damage and repair," he defined stress as the "state manifested by a specific syndrome which consists of all the nonspecifically induced changes." Selye added that stress could be conceptualized as "the common denominator of all adaptive reactions in the body," but that both stressors and stress could be measured only by the resulting psychophysiological responses.³

This physiological model of stress has been adopted and adapted in psychiatry and psychology: tangible or intangible events (e.g., loss of money, a death, changed status) that require mental, emotional, and often definite physical changes produce stress. In the behavioral sciences stress is usually considered to be an uncomfortable mental and bodily condition characterized by anxiety and psychophysiological changes.

Concepts of Stress in Psychiatry

World War II aroused the interest of both professionals and the public in stress and mental illness. The conscription process included at least a brief psychiatric evaluation designed to reject those who were mentally ill or unlikely to withstand military duty. The psychiatric rejection rate for examinees at the induction station in Boston was 10.6% early in World War II and 21.3% at the end, August 1945.⁴

In England, Slater⁵ found that men who "broke down" during mobilization and separation from their families differed from those who "broke down" in combat. The first "were of poorer physiques, and more frequently had a family and personal history of nervous traits or symptoms, than did the second group." Symonds⁶ showed that the dose-response

relationship applied to R.A.F. combat personnel; small amounts of the stress involved in air warfare sufficed to produce mental disorders in those who were least stable, but even the most stable could not withstand prolonged severe stress.

The influence of war as a stressor producing mental illness in the general population seems to be variable. As we have seen, Bremer⁷ found that only a small percentage of the inhabitants of a Norwegian coastal village had mental disorders that could be attributed to the war (see Chapter 11). And Svendsen's⁸ analyses of admission rates to clinics and hospitals in Denmark revealed that they were low during the early war years and rose to prewar levels only in 1945; the rise in rates, however, was produced mainly by higher rates for women—the rates for men in Denmark continued to be quite low, 1940–1945, despite the Nazi occupation.

During World War II psychiatrists worked closely with their medical and surgical colleagues, many of whom learned about psychiatry for the first time in their professional careers and developed increasing respect for psychiatrists' therapeutic skills. "Combat fatigue" became a popular term, relatively devoid of stigma because it was considered to be indicative of severe stress. The general public became more aware of the problems of mental illness and interested in psychological topics, as evidenced by the novels and dramas of the postwar period. And shortly after the war, Grinker and Spiegel's⁹ *Men Under Stress*—a definitive study of the rigors of military duty that was acclaimed by the medical profession—helped to popularize the concept of stress.

Earlier, Adolf Meyer¹⁰ had emphasized that mental illness was a reaction to life events. Although he did not use the term "stress," his description of the temporal relationships between life events and the human being's reactions to those events provided a foundation for our current understanding of the concept of stress in psychiatry. The Meyerian life chart, for example, was a prerequisite for evaluating what had happened to a patient and for diagnosis. Meyer described the life chart: "We begin with the entering of date and year of birth. . . ; we next enter the periods of disorders of the various organs, and after this the date concerning the situations and reactions of the patients."

But in psychiatry it is difficult to delineate stress as a discrete condition. In many instances stress is similar to anxiety, defined by Freud¹¹ as consisting of three essential components: (1) feelings of apprehension and discomfort, (2) concomitant discharge phenomena (autonomic and endocrine changes) felt as bodily disturbances, and (3) intellectual awareness of the foregoing. Stress responses can also include other affects of displeasure, e.g., sadness, helplessness, and hopelessness and the "giving up-given up" syndrome.¹² Furthermore, the affective states may appear clinically as the defenses against anxiety, involving, for example, phobic,

characteriologic, or overcompensating responses or behaviors indicative of personality disorganization or psychosis.

Another factor complicating our understanding of stress in psychiatry is that often stressors are not scientifically measurable processes, such as heat or trauma, but, instead, can encompass the almost infinite variety of life's events and circumstances, including the intangible and the symbolic. Early in this century, the great American sociologist W. I. Thomas¹³ insisted that interrelationships between social life, culture, and "crisis" (life events) on one hand and behavioral responses on the other depended little on attitudes and values but almost entirely on the individual's "definition of the situation." Thomas asserted: "Preliminary to any self-determined act of behavior there is always a . . . *definition of the situation*[;] . . . gradually a whole life-policy and the personality of the individual himself follow from a series of such definitions." This fundamental tenet of social psychology accounts for individual variations in response to processes that we generally consider to be stressors. Thomas emphasized that there is "always a rivalry between the spontaneous definitions of the situation made by the member of an organized society and the definitions which his society has provided for him." Notwithstanding these difficulties, in psychiatry the concept of stress is being developed by a number of major studies.

Object Loss: One of the significant series of investigations that has increased our understanding of stress is the research carried out by Engel, Schmale, and others at the University of Rochester on object loss. They have shown that object loss (real, threatened, or symbolic) produces affective and other disturbances that precede the onset of physical and mental disorders.^{14,15,16} The theoretical construct upon which their concept is based is that losses—usually considered to be adverse—are stressful and thus require psychological, physiological, and social adjustments. These adjustments may be either adaptive or maladaptive—evidenced either as coping or as mental, psychophysiological, or physical illnesses. Parkes' ¹⁷ well-designed studies of "The Psychosomatic Effects of Bereavement" showed that both morbidity and mortality rates were significantly higher in a bereaved group during the first year following a spouse's death than the rates for an age-controlled group not experiencing bereavement.

Mechanisms: This work on object loss and, particularly, bereavement, indicates that stressful life events are associated with the development of physical and mental illnesses. But the intermediary physiological and psychological mechanisms involved, the processes by which such stressors lead to illness, can be only postulated; they have not yet been scientifically demonstrated. Schmale and his co-workers at Rochester view object loss as a predisposing event which alters the organism's reactivity and increases its vulnerability to disease processes. They state that object loss produces

the giving-up reaction that "acts as a facilitating factor which permits disease to appear when it does."¹⁸

In accord with Selye's conceptualization of the General Adaptation Syndrome, physical and psychophysiological illnesses can be seen as the consequences of lowered resistance to disease agents or as "diseases of adaptation." One of the characteristics of the stage of resistance, observed repeatedly in experimental animals subjected to graduated amounts of a particular stressor (e.g., radiation) is that the animal's resistance to that particular stressor increases, but, concurrently, its threshold of resistance to other types of stressors (e.g., doses of pneumococci) is lowered. Also, sustained stress with its continued, heightened pituitary-adrenal and other neuroendocrine activity leads to "diseases of adaptation"; for example, adrenal, renal, and other processes produce hypertension and vascular changes associated with coronary heart disease. But we do not have comparable mechanisms to explain psychological aspects of stress and the development of mental disorders scientifically.

As we saw in Chapter 10, in the Midtown Manhattan Study the investigators developed a stress-strain model that served as the conceptual basis for their work. The model outlined interactions among genetic factors, environmental factors that were either stressful or "positive," and personality that resulted in strain (personality deformation and impairment) produced by stress. Positive environmental factors, personality characteristics, and coping and other resources could ameliorate the effects of stressors so that strain was not always the eventual outcome. Their findings showed that the risk of impairment was related in linear fashion to the sheer number of stresses, regardless of type or patterns, reported by the respondents. However, the stress factors alone could not account for the entire variation in mental health risk; unexplained factors were also involved.

Two comprehensive series of investigations during the last 25 years, utilizing somewhat different approaches, have supplied valuable information about human ecology and the occurrence of illness and about the relationship between stressful life events (conceptualized at least implicitly as stressors) and the development of illness.

Studies of Healthy Populations

Both the unequal distribution of illnesses within given populations as well as the relationship between socioenvironmental factors and illness have been demonstrated by Hinkle, Wolff, and their colleagues' studies of health and disease in different populations.¹⁹ Working initially with a healthy, homogeneous group, they found that the number of illness episodes experienced by the subjects fitted a negative binomial distribu-

tion, not the Gaussian bell-shaped curve. The 10% of the subjects who were ill most often experienced 34% of the total sickness disability; in contrast, the healthiest 10% experienced only 1% of the total sickness disability. The ill group was also found to be accident prone. A “good attitude and the ability to get along with people” was correlated positively with a low frequency of illness. No differences in the childhoods of the two groups were found, but the group with the highest frequency of illness was described as “unhappy, insecure, discontented, and with a large number of interpersonal problems.” The difference in the rates of absence from work was explained hypothetically by the correlation between the frequency of illness and both unfulfilled expectations and perceptions of a stressful life.

The results of the extended work of Hinkle *et al.*, with five different populations (1,700 semiskilled women telephone workers in New York City, 1,527 blue-collar telephone workmen, 100 Chinese immigrants, 76 Hungarian refugees, and 132 recent college graduates) were remarkably similar to their earlier findings.²⁰ In each group, during 20 years of adult life, 25% of the members experienced approximately 50% of all the illness episodes. In contrast, the healthiest 25% in each group experienced less than 10% of the total number of illness episodes. Furthermore, differences in susceptibility to illness were not limited to any specific syndromes:

Thus, as the number of episodes experienced by an individual increased, the number of different types of disease syndromes that he exhibited increased also. . . . Likewise, as the number of episodes he experienced increased, he exhibited illnesses of an increasing variety of etiologies. He was likely to have more ‘major,’ irreversible and life-endangering illnesses, as well as more ‘minor,’ reversible and transient illnesses. *Finally, as the number of his ‘bodily’ illnesses increased, the number of his emotional disturbances and psychoneurotic and psychotic manifestations (here categorized as ‘disturbances of mood, thought, and behavior’) usually increased also* [Italics ours]. These findings have been obtained consistently in each of these five groups, regardless of the sex, race, culture, economic or social background, environment or life experiences of the people studied.²¹

Then, Hinkle and Wolff found that their subjects had peak periods in which the number of illness episodes appeared as clusters of different syndromes, of varying degrees of severity, and from several etiologic sources. They concluded that “efforts to adapt to the social environment are to some degree involved in the majority of all of the illness episodes that occur among the adult population.”¹⁹ These studies yielded no evidence for labeling any special category of disease as psychosomatic; instead, Hinkle and his co-workers maintain that all forms of illness are influenced by reactions to life situations and the patient’s relation to his environment, and, thus, are psychosomatic (see Chapter 15).

The investigators’ studies revealed that among those who had been ill most frequently, changes in their life situations—particularly their relationships with others—were significantly associated with the illness episodes.

But some of the healthiest subjects had also experienced numerous demanding and stressful life situations and had not become ill. Hinkle believes that these individuals' personalities exhibited features that insulated them from the full impact of stressors and thus enabled them to withstand adversities.

Work with these various groups is offering Hinkle and his colleagues an opportunity to evaluate the possible stressful effects of social and cultural change. The two groups of telephone employees had been exposed to the changes that occurred in the United States in the middle of the twentieth century. The Chinese, however, were immigrants who had come to this country shortly after World War II to continue their advanced educations, but were stranded by the political events in China in the late 1940s. As a group, during eight to nine years in the United States, they were compelled to make many adjustments; they were exposed to social change and had been socially dislocated. Even so, the frequency of illness episodes was distributed similarly to the distribution found for the other groups. Psychiatric examinations revealed that the healthier members appeared to be "emotionally insulated" from the major life changes they had experienced.

The Hungarian refugees were studied a few months after they had fled from their homeland in 1956; they, too, were in the midst of major social change. In the preceding ten years, they had experienced more illnesses than the other groups. Those illness episodes were associated with feelings of frustration and insecurity about the social environment in Hungary. Although all of them had shared the hardships of one experience—revolution, flight, and refugee status—the healthier members described that experience in much more benign and objective terms than did those who had had the greatest number of illness episodes in the past.

From this series of studies, Hinkle²⁰ concludes:

1. Among similar people sharing similar life experiences over a number of decades; a few had many episodes of illness; some had a moderate number; many had few; and some had had no illness episodes.
2. Those who had been susceptible to illness or who have established illness patterns are likely to have a greater number and type of illnesses when their social or interpersonal relationships are drastically altered.
3. Some people sharing similar, theoretically stressful, situations do not become ill while others do.
4. The individual's reaction to social change or changes in his interpersonal relationships depends on his psychological and physical characteristics and on the circumstances surrounding the changes.

These findings point to the many complex difficulties confronting investigators studying stressful life events and their effects. Preexisting reaction patterns, determined in part by constitutional factors and learning during childhood, personality characteristics, and the circumstances in

which the stressors occur, influence the perception of and response to stressors.

Life Events Scales

Based on Adolf Meyer's teaching that illness was associated with life events—successes or failures in school or at work, moves, births and deaths in the family, etc.—in 1967, Holmes and Rahe developed the Social Readjustment Rating Scale (SRRS) to quantify stressful and other life events requiring some degree of adjustment. As shown in Table 27,²² the 43 life events in the SRRS range from major ones such as the death of spouse, jail term, and marriage, to minor changes in social activities and customary happenings such as holidays and vacations.

The weights (mean values) assigned to the various events were obtained by administering the SRRS to a number of diverse groups in the United States and have been evaluated by transcultural studies. Use of the SRRS and a modified version, the Schedule of Recent Experiences (SRE), has led to the definition of a life crisis as any clustering of events that adds up to a score of at least 150 in the preceding year. As the total life-change units (LCU) score rises, the likelihood of illness increases. For example, of those in a group scoring 150–199 (mild life crisis), 37% had “associated health changes”; of those in a group scoring 200–299 (moderate), 52% had “associated health changes”; and of those in a third group scoring 300+ (major life crisis), 80% had “associated health changes.”

Holmes and Masuda²³ have carried out retrospective and prospective studies using the SRRS and the SRE with patients who developed a wide range of psychiatric, medical, and surgical illnesses. Increasingly higher life-change scores were significantly related to (1) a shorter lapse of time between the stressful events and the onset of disease, and (2) the greater likelihood of having a more serious illness.

During the past few years, Rahe and his colleagues²⁴ have conducted an extensive series of studies with Navy personnel in the United States and Scandinavia using the SRE and a newly modified version containing 55 life changes, the Recent Life Changes Questionnaire (RLCQ). And they have developed a “Life Stress and Illness Model.”²⁵ They have used standard LCU values and also the respondents' subjective values for events. In a retrospective study of 50 Navy and Marine Corps personnel discharged from active service because of psychiatric illness, the mean LCU total for the year prior to the onset of *minor illness* was 130 and the total for the year prior to the onset of a *major illness* was 164.²⁴ In another study of Norwegian and U.S. Navy personnel, the life events were clustered into types; the group that reported events related only to work changes had

Table 27. Social Readjustment Rating Scale

Rank	Life event	Mean value
1	Death of spouse	100
2	Divorce	73
3	Marital separation	65
4	Jail term	63
5	Death of close family member	63
6	Personal injury or illness	53
7	Marriage	50
8	Fired at work	47
9	Marital reconciliation	45
10	Retirement	45
11	Change in health of family member	44
12	Pregnancy	40
13	Sex difficulties	39
14	Gain of new family member	39
15	Business readjustment	39
16	Change in financial state	38
17	Death of close friend	37
18	Change to different line of work	36
19	Change in number of arguments with spouse	35
20	Mortgage over \$10,000	31
21	Foreclosure of mortgage or loan	30
22	Change in responsibilities at work	29
23	Son or daughter leaving home	29
24	Trouble with in-laws	29
25	Outstanding personal achievement	28
26	Wife begins or stops work	26
27	Begin or end school	26
28	Change in living conditions	25
29	Revision of personal habits	24
30	Trouble with boss	23
31	Change in work hours or conditions	20
32	Change in residence	20
33	Change in schools	20
34	Change in recreation	19
35	Change in church activities	19
36	Change in social activities	18
37	Mortgage or loan less than \$10,000	17
38	Change in sleeping habits	16
39	Change in number of family get-togethers	15
40	Change in eating habits	15
41	Vacation	13
42	Christmas	12
43	Minor violations of the law	11

Adapted from Holmes and Rahe.²²

mean illness rates (illness per 1,000 men per day) of 6.9–7.5; those reporting mainly a cluster of marital events had rates of 7.9–8.0; those reporting mostly personal and social events had rates of 7.4–8.4; and those reporting disciplinary events had rates of 10.1–10.8.²⁵

Preliminary results of a study of coronary heart disease in Sweden and Finland show that those who died suddenly from a myocardial infarction had had a 100–200% increase in their LCU scores in the preceding six months. In contrast, those who survived the infarction had had only a 50–100% increase in their LCU scores in the six months prior to the attack.²⁶

Rahe and his co-workers²⁷ report that in Sweden Theorell has begun to compare subjects' weekly LCU totals with their urinary excretion levels of epinephrine and norepinephrine and has found statistically significant relationships between higher LCU totals and excretion levels. This appears to be an especially promising and needed type of research on the relationship between life events and psychophysiological responses, that should supply valuable information about what is stressful, whether or not the subject has perceived it as stressful.

Rahe's²⁵ life stress and illness model is presented graphically as a series of lenses and filters that illustrate the pathway for stressors. Past experiences can determine or filter the way in which a subject perceives a stressful life event. Next, that perception is diffracted in part by the subject's psychological defenses. The remainder of the stressor leads to a psychophysiological reaction; coping forces or compensatory measures may attenuate the responses, but in the absence of failure of such mechanisms, illness behavior develops. This illness behavior can become focused as a disease process for which the subject may or may not seek medical care.

Since 1969 Paykel and his colleagues²⁸ at Yale have been using their Life Events Scale to evaluate relationships between life stress and various psychiatric disorders. In an initial study, depressed patients reported about three times as many events in the six months preceding the onset of the depression as the matched controls. The life events list included events which could be considered either desirable or undesirable. Therefore, a further analysis was undertaken. The depressives reported undesirable events much more frequently than did the controls, but there were no significant differences between the two groups' reports of the frequency of desirable life events. A third analysis involved the classification of events either as entrances into the social field (engagement, marriage, birth, etc.) or as exits from it (death in the family, divorce, child leaving home, etc.). Exits were reported significantly more often by the depressives than by the matched controls from the general population, but there were no significant differences in the number of entrances reported by the two groups. Subsequent studies with different groups of psychiatric patients showed that suicide attempters reported the highest number of events, depressives the next highest number, and schizophrenics the third highest number.

A major difficulty with the use of life-events scales concerns the weight or numerical value assigned to an event. For numerous reasons, various subcultural groups may assign different values to an event, or familial or personal circumstances and attitudes may complicate the use of a standard value. W. I. Thomas¹³ "definition of the situation" and a variety of other factors are bound to influence an individual's evaluation of an event.

Most of the studies of life events have been retrospective; after becoming ill, the subject was questioned about the occurrence of life events during a prior time period. Such findings may lack reliability; the person's illness may influence his recall either by his giving greater emphasis to an event now that illness has occurred, or by his forgetting the event or disregarding it as trivial for other reasons. Brown²⁹ points out that these and other types of contamination may influence the measurement of life events and diminish their predictive value. In his studies in London, the respondents were questioned extensively not only about the occurrence of life events but also about their immediate reactions such as worry, difficulty with sleeping, etc. Each event was then categorized for severity (long- or short-term threat). In addition, he assessed the event's contextual meaning—the timing of the occurrence in relation to what else was happening in the subject's life regardless of the subject's report of his reaction to the event. Results of studies with psychiatric patients and matched controls from the general population showed that the patients had sustained many more "severe" events in the preceding nine months than the controls and that there was a high correlation between the self-report ratings and the contextual ratings. By using these two types of ratings (severity and context), Brown has been attempting to ascertain the meaning and the impact of the event as fully as possible.

Recently, Mechanic has outlined some of the problems in the measurement of stress and social readjustment.³⁰ He emphasizes that the SRRS attempts to ascertain and quantify the adjustments required by life events as well as the individual's perception of them as stressful. But the scales currently being used do not account sufficiently for the relative values of the adverse and the positive events. "Further developments of life readjustment scales must include further specification of the degree to which events differentially tax varying persons."

Another criticism of life-events scales centers on the point that some of the events may be symptomatic of mental illness. For example, an individual may lose a job because of a personality disorder that is already producing interpersonal or other difficulties. Or a divorce may be the consequence of mental illness. Thus, these events may not precede the onset of mental disorders; instead, they may be evidence of its existence and conclusions about their possible etiological significance may be scientifically invalid, especially in retrospective studies.

Relationship Between Stress and Mental Illness

The relationship between stress and the development of psychiatric disorder is clinically evident but scientifically elusive. Repeatedly, but not consistently, clinicians and investigators have been able to specify stressful events that preceded the onset of mental illness and appeared to have causal significance. But the inconsistencies are numerous. On one hand a person may become ill and there is little indication that his life has been stressful. On the other hand many persons endure stressful events and do not become ill. Investigators postulate that other factors, e.g., a constitutional predisposition can explain the first, and that coping mechanisms and compensatory resources account for the latter. Such explanations can be developed into models such as the one that the Dohrenwends adapted from Selye's concept of stress. See Fig. 15.³¹

Those working in psychiatric genetics are unwilling to discount the influence of socioenvironmental processes and stressors in the genesis of schizophrenia, even though there is substantial evidence that genetic factors are predisposing causes. They affirm that the expression of genes takes place in the environment which modifies their expression. Pollin³² insists that the pathogenesis of schizophrenia includes experiential, particularly stress variables.

Recently, Kohn³³ has emphasized the role of stress in the etiology of schizophrenia. He cites a study conducted in San Juan by Rogler and Hollingshead³⁴ which showed that schizophrenics in the low SES brackets had experienced many more stresses than had matched controls. On the basis of existing data, Kohn proposes an interactive model to account for the greater frequency of schizophrenia in lower SES groups.³³ The components in his formulation are (1) the conditions of life associated with lower social-class status, (2) genetic processes, and (3) stressful experiences. He states that lower social-class position involves conditions of life that include "different conceptions of social reality, different conceptions of the desirable, and different aspirations, hopes, and fears. Class differences in

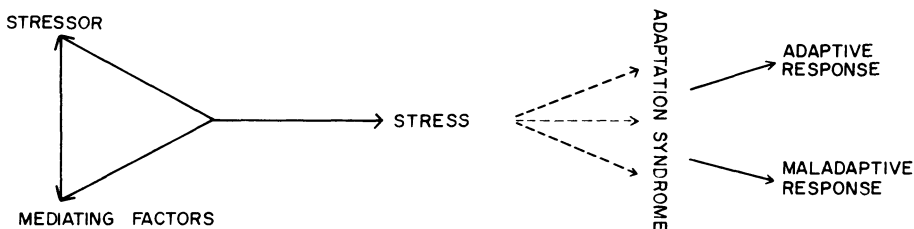


Figure 15. General paradigm of the stress response. (Adapted from B. S. Dohrenwend and B. P. Dohrenwend.³¹ Originally printed in *Social Status and Psychological Disorder: A Casual Inquiry*, John Wiley & Sons, Inc., © 1969. Reprinted by permission of John Wiley & Sons, Inc.)

orientation are an important bridge between social conditions and psychological functioning." Lower social-class persons are genetically vulnerable, encounter numerous stressful events and circumstances, have fewer external and internal resources for coping, and are limited by conceptions of reality derived from the experiences of living in adversity and deprivation. In Kohn's words, they are in "triple jeopardy" for developing schizophrenia.

This is an appealing model. But stress cannot yet be evaluated scientifically. Hinkle and his colleagues' studies revealed the complexity of the research problem; in different groups, as well as within a group that had shared similar experiences, certain members became ill frequently, whereas others seldom became ill. Methodologic problems are being evaluated by the use of social readjustment and life-events scales that, when they are further refined, seem to offer the most promising leads for research in this field. But, at our present level of knowledge, scientific understanding of the problem of "stress" that has both epidemiologic and clinical significance in psychiatry seems to be beyond our grasp.

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15

Psychosomatic and Psychophysiologic Disorders

Each civilization, Sigerist has said, makes its own diseases. But it has many ways of doing so.

—J. N. MORRIS¹

Accumulating evidence indicates that we are becoming a psychosomatically oriented society. Results from many community surveys and data from physicians' practices show that psychosomatic disorders and psychophysiologic complaints are exceedingly frequent.* Moreover, Tringo² has found that psychosomatic illnesses are now considered to be "acceptable." His 1972 study revealed that respondents gave diseases such as peptic ulcer, arthritis, and heart disease much higher (more favorable) acceptability ratings than disorders such as tuberculosis, carcinoma, and mental illness. Tringo suggests that the psychosomatic illnesses are acceptable because of their great frequency and "lessened shock value."

In this chapter we will review some of the findings on the frequency and distribution of the psychosomatic and psychophysiologic disorders, discuss the concept of psychosomatic illness and changing patterns of susceptibility, and look at the extensive studies on coronary heart disease that are being conducted. Finally, we will summarize some views on the relationships between sociocultural processes and the development of psychosomatic afflictions. The use of the term *psychosomatic* will not be restricted to the seven "classic" illnesses—peptic ulcer, asthma, etc.—but

* For years, the term "psychosomatic" designated bodily conditions thought to be caused mainly by psychological forces and conflicts. But, in the 1950s, the use of the term was limited to a few specific diseases such as asthma and peptic ulcer—"psychophysiologic reaction" encompassed the large variety of somatic complaints where emotional and social factors were etiologically prominent. Currently, the terms are used interchangeably.

instead, will be used in its more general and popular sense to refer to a wide variety of disorders in which social and psychologic factors are believed to have etiologic significance.

Frequency

Findings from many of the community studies that have been reviewed show that high percentages of the populations reported psychophysiologic symptom patterns. In the Stirling County Study,³ 59% of the sample of the general population had psychophysiologic symptom patterns, and in the Midtown Manhattan Study,⁴ 60% were rated as psychophysiologic. In the Florida Health study,⁵ more than 40% of a countywide sample of 1,645 adults aged 17–92 reported having headaches or weight difficulties currently or during the preceding year, about 35% reported indigestion, between 22 and 26% reported other gastrointestinal symptoms (stomachache or constipation), 15% reported diarrhea or hypertension, 5% reported asthma, and 2.4% reported peptic ulcer. To evaluate the severity of the various psychophysiologic symptoms and conditions, we devised a “psychosomatic inventory,” tabulating only the responses of those reporting the symptom or condition “regularly,” omitting the “occasionally” responses. Slightly more than 50% of the entire sample had at least one of the 11 symptoms or conditions “regularly.” And 17.3% had two or more of the symptoms or conditions “regularly”; we labeled this group, 286 of the 1,645 respondents, as psychosomatically ill.

Surveys of medical practices also indicate that large numbers of persons suffer from psychophysiologic and psychosomatic ailments. For example, Watts⁶ found that 26.5% of medical patients in Britain had psychophysiologic disorders. Finn and Huston’s⁷ Iowa Study reported that a survey of physicians’ practices showed that 20% of all patients had psychophysiologic symptoms. And Mazer’s⁸ study of psychiatric conditions in medical practice revealed that 30% of patients on an island off the coast of Massachusetts had psychophysiologic disorders. Crombie⁹ found that 14% of all medical patients had mainly emotional illness, 13% had mixed emotional and organic illnesses, and that the emotional element “was appreciable in a further 21%.” Thus, about 48% suffered from emotional illness. In 1970 Gardner¹⁰ reported that the percentage of patients with psychosomatic conditions in internists’ practices ranged from 15 to 50%, depending on the type of practice and which psychosomatic disorders were included.

In the 1940s Halliday¹¹ found that certain psychosomatic illness rates had increased in Great Britain between 1900 and 1939. Whether the frequency of psychophysiologic disorders has increased in the United States during the last few decades is a question that cannot be answered because of the lack of baseline data. Nevertheless, the widespread preva-

lence of psychophysiologic disorders and their "acceptability" indicate that they constitute a public health problem of massive proportions. Spain¹² concludes from an analysis of vital statistics that there is considerably increased morbidity and mortality from psychosomatic illness. Certain conditions, such as coronary heart disease, peptic ulcer, and diabetes, appear to be epidemic in Western societies.

Distribution

Epidemiologic investigations indicate that psychosomatic disorders are unevenly distributed throughout populations and have certain demographic correlates.

Age: In both the Stirling County and the Midtown Manhattan studies, the frequency of psychophysiologic disorders increased steadily with advancing age.^{3,4} Finn and Huston's survey of Iowa physicians' medical practices also showed that psychophysiologic disorders were more common in the older than other age groups.⁷ In the Florida Health Study certain psychophysiologic and psychosomatic conditions—indigestion, constipation, hypertension, colitis, and weight trouble—were significantly more common in the older age groups. But others—headache, nervous stomach, and diarrhea—were more frequent in the younger age groups. And no significant age relationships were observed for complaints for stomachache, peptic ulcer, and asthma.⁵

Spain¹² states that the epidemiologic base for psychosomatic illnesses has been moving toward younger age groups. Earlier, Halliday¹¹ found an increase in peptic ulcer in younger age groups and suggested that this portended a greater prevalence of psychosomatic illness. He maintained that age shifts probably produced by changes in child-rearing practices resulted in the piling up of predisposed individuals.

Sex: Traditionally, certain psychosomatic disorders have been significantly sex-related. Migraine and fainting, for example, have been "women's diseases." In contrast, coronary heart disease has had such a high male : female ratio that most investigations of it have been limited to males.

The Florida Health Study showed definite relationships between certain psychophysiologic conditions and the sex of the respondents. To illustrate, headaches, constipation, nervous stomach, hypertension, and weight trouble were found significantly more often in females, whereas asthma and ulcer were found significantly more often in males. There were no significant associations between indigestion, stomachache, diarrhea, and colitis and the respondent's sex.⁵

Surveying the frequency of the peptic ulcer historically, Halliday found that there had been a reversal of the sex ratio for peptic ulcer from the nineteenth to the twentieth centuries. In the nineteenth century, peptic

ulcer, which Dragstedt¹³ called “the wound stripe of civilization,” was a woman’s disease, but it has become mainly an affliction of men in the present century. Halliday notes that “the official *Medical History of the* [first] *Great War* did not mention the term ‘duodenal ulcer.’” In the United States, although more men than women suffer from peptic ulcer, the ratio has changed in the last few decades from at least 4 : 1 to about 2.5 : 1.¹⁴

Halliday also reported a sex-reversal in the frequency of diabetes; in the 1920s–1940s in Great Britain it was becoming much more common in women. Recently, Shepherd and Cooper¹⁵ noted Halliday’s report that during the last 50 years there has been not only a marked increase in the frequency of diabetes among females, but also, that the male : female ratio for deaths attributable to diabetes has changed from 2 : 1 to 0.5 : 1.

Fluctuations in the sex ratio indicate that social change is not exerting a uniform influence on both sexes simultaneously. On the contemporary scene, as women participate more actively in the occupational and social arenas, they are exposed to added stresses, with greater role conflict and ambiguity. In fact, the “identity crisis” that is being conceptualized as a discrete “illness” entity for youth can be applied also as a diagnostic label to many career women and working mothers. And their susceptibility to both known and newer forms of psychosomatic illness is likely to increase to the extent that we will see some convergence of differential psychosomatic sex ratios for certain disorders.

Race: Possible racial differences and changes in the distribution of psychophysiological and psychosomatic conditions are difficult to evaluate. Since a major proportion of blacks and low-income whites have historically received inadequate medical care in the United States, epidemiologists have few pre-World War II statistics from which to make generalizations about the frequency of these conditions in the two races. But Rowntree’s¹⁶ 1945 evaluation of 13 million Selective Service registrants showed a “marked increase in the incidence of psychosomatic disease in the Negro, who in peacetime appeared to be relatively immune.”

Findings from the Florida Health Study revealed that significantly more blacks than whites reported headaches, constipation, stomachaches, and hypertension, whereas significantly more whites reported nervous stomach, diarrhea, and colitis. Indigestion, asthma, peptic ulcer, and weight troubles were not significantly race-related.⁵

In 1948, Halliday¹¹ recognized that Negroes in the United States were a “second nation” in which the incidence of psychosomatic disorders was rising abruptly. Stamler and his colleagues¹⁷ reported in 1960 that death from hypertension was seven times more common in nonwhites than whites. Genetic differences would appear to be basic etiologic factors, but Stamler and his associates state: “The patterns of discrimination and segregation which Negroes experience in the United States may induce

psychologic stresses, strains, frustrations, etc. These primary central nervous system effects may be responsible for the greater occurrence of hypertension in this racial group.”

Changes in the health status of nonwhites appear to be taking place as this group now participates in the wider society’s benefits. However, the black society, which was once perceived sociologically as a homogeneous subcultural entity, is now composed of diversified subgroups, socially stratifying themselves as they develop new ideologies. The black who is attempting to obtain a share of the goods of middle-class America by adopting the dominant white value system has been reported by Kardiner and Ovesey¹⁸ as frequently becoming psychosomatically ill in his course along this path. The apathetic group, analogous to Marx’s *lumpenproletariat*, probably will continue to have as much illness as always unless the caretaking functions of our government intervene. With the “second nation” dividing into many groups, we can expect to see differential manifestations of psychosomatic disorders accompanying the increasing heterogeneity.

Social Class

Hollingshead and Redlich¹⁹ reported that psychosomatic reactions “show the least association between class position and the rate of their frequency in the patient population. Nevertheless, the linkage between class status and psychosomatic reactions is significant.” The percentages with psychosomatic reactions (receiving psychiatric treatments) according to class were 7% in Classes I–II, 9% in Class III, 13% in Class IV, and 11% in Class V.¹⁹ (See Chapter 10.) In the Stirling County Study, psychophysiologic symptom patterns were found more frequently in the lower than in the middle or upper classes.³ And the findings from the Midtown Manhattan Study showed that certain psychophysiologic and psychosomatic conditions were differently class-related. For example, arthritis, hypertension, and neuralgia were associated with lower socioeconomic status (SES), whereas colitis, hives, and hay fever were positively related to middle- and upper-class SES. Many other illnesses showed erratic and inconsistent class relationships; hypertension was distributed according to the bell-shaped curve—less frequent in both the very low and the very high SES groups than in the middle SES groups.⁴

In the Florida Health Study, psychophysiologic symptoms and conditions were variably related to the respondents’ income levels. For example, indigestion and weight troubles were much more common among the poorest respondents, and headaches, constipation, and hypertension were most frequent among those with marginal family incomes (about \$6,000 per year). Only one symptom, diarrhea, was significantly related to upper-class status. Complaints of nervous stomach, stomachache, asthma, peptic

ulcer, and colitis showed no relationships with annual family income. Furthermore, of the 17.3% of the respondents who had two or more psychophysiological complaints “regularly” during the preceding year, almost 30% had annual incomes under \$3,000; in contrast, slightly fewer than 10% had annual family incomes about \$15,000. Such results explode the myth that psychosomatic illness is a middle-class affliction.⁵

Finding that the psychophysiological and psychosomatic disturbances are unequally distributed among the social classes can be interpreted in two ways. Hollingshead and Redlich¹⁹ point out that lower-class patients somatize complaints to a greater extent than upper-class patients. After reviewing numerous epidemiologic studies, Crandell and Dohrenwend²⁰ conclude that there is “a distinct tendency for lower class groups to express psychophysiological distress in physiological terms.” The possibility that more lower than middle or upper SES persons tend to react psychophysiological to stressors or tend more frequently to express their distress as physical symptoms implies that lower SES persons’ mental mechanisms do not function adequately as defenses. Consequently, they employ a less symbolic and more primitive type of reaction—somatization. This popular belief is difficult to evaluate; patterns of reactivity to stressors are the result of numerous factors, such as the number and types of stressors, learning and conditioning early in life, and the availability of coping mechanisms.

Another interpretation of the association between lower SES and the greater frequency of psychophysiological conditions is that the multiple adverse effects of poverty and deprivation produce greater amounts of illness of all types—psychophysiological disturbances as well as the mental disorders and the organic illnesses. For example, Coles²¹ reports that the physical health of migrant laborers “deteriorates early in life.”

The relationship between poverty and deteriorating health status is described poignantly in *Marienthal*, a 1930 study of a small Austrian village, conducted by Jahoda, Lazarsfeld, and Zeisel,²² that has only recently been translated into English. Almost all of the 1,486 (318 were under the age of 14) inhabitants of the town became unemployed suddenly in 1929 when the only industry in the area shut down. The populace subsisted on meager food and welfare allotments provided from national relief funds. Medical examinations of the children under the age of 14, almost all of whom had lived one year in extreme poverty, disclosed that only 16% were in good health; 51% were considered to be in medium health status, and 33% were in poor health.²²

The Concept of Psychosomatic Illness

About 30 years ago, James Halliday¹¹ developed the “concept of a psychosomatic affection” as an illness that is produced by multiple

etiological factors, one that is determined by “a *synergy of causes*” (Italics ours). The synergy of causes includes:

1. Genetic factors—Mirski²³ has shown that peptic ulcer patients are high pepsinogen secretors. A controlled study of Army inductees demonstrated that the stresses of indoctrination into the Armed Services can result in the development of peptic ulcer syndromes, particularly in those persons who are high pepsinogen secretors.

2. Child-rearing practices—These involve approval and disapproval during critical stages of development, freedoms and frustrations, and, particularly, types of adaptation and defenses that can be elaborated into patterns of psychobiologic reactivity that relate to health and illness in the adult. Increasingly, obesity and other weight difficulties are being attributed to feeding practices during infancy and childhood.

3. Sociocultural processes—Coronary heart disease (CHD) is considered by Hinkle²⁴ to be influenced strongly by cultural factors. As discussed later in this chapter, the Type A personality, associated with increased risk for CHD, reflects culturally induced values and orientation.

Marked changes in the frequency of an ailment are indicators of its psychosomatic character. Genetic processes alone are unlikely to be responsible for significant fluctuations in frequency over a few decades since, to become manifest, genetic influences would have to be operative over a number of generations. Thus, many influences, including the sociocultural, are important and are manifested by differential changes in the age, sex, and race distributions of an illness that take place as various groups are exposed to stressors.

Changing Patterns of Susceptibility and Illness

Increased susceptibility to psychosomatic disease is taken for granted as a hazard of urban and suburban living.²⁵ In fact, psychosomatic illness may be considered one of the American “crowd diseases,” particularly among the mobile population. Stamler *et al.*,¹⁷ report that hypertension is much more common in Negroes who have moved to urban areas than in those who live in rural areas. Geiger and Scotch²⁶ also note a tendency toward high blood pressure in urban groups.

Early investigators believed that psychosomatic illnesses were relatively rare in primitive societies and common in industrialized ones. Recent studies, however, have shown great variability, ranging from prevalence rates of 1.4% of Australian aborigines²⁷ to 84% of the Yoruba in Nigeria.²⁸ In many respects, most of the world is being Westernized, at least in terms of urbanization and technological change. In Nigeria, for example, Leighton *et al.*,²⁸ found a higher incidence of psychophysiological illness in towns than in villages. Scotch's²⁹ comparative study of Zulus in rural and urban settings confirms such findings. And Seguin³⁰ has described a

marked increase in psychosomatic illness among Peruvians who migrate from the Sierra to the cities of the plain; they are undergoing "psychosomatic disadaptation."

Sociocultural processes appear to be associated with changing patterns of disease. For example, tuberculosis, once a scourge, has declined drastically throughout the Western world. This decline paralleled higher living standards and is in accord with Stallones'³¹ assertion that the major health benefits of the last century "have resulted from the operation of undirected, nonspecific influences. Advances in medical knowledge and the decline of disease are simultaneous results of a general improvement in the quality of life." On the other hand, the sharp rise in VD rates during the last few years has been associated with the massive movement of young men to and from Southeast Asia during the Vietnam War era, the emergence of penicillin-resistant strains of gonococci, and freer sexual mores.

New forms of illness are emerging and others are disappearing. Syncope now occurs rarely, although a few generations ago it was an appropriate response to many varied social stimuli. Of 1,628 respondents in the Florida Health Study, only 80 reported that they had ever fainted, and only seven men and one woman reported that they had fainted during the preceding year.³² Schulte³³ maintains that fainting is no longer an adequate form of emotional discharge in our complex society in which a wide variety of psychophysiological cardiovascular disorders occurs. Complaints of chest pain communicate distress and insure that the sufferer will receive sympathy and medical attention. Accident-proneness is an everyday phrase, understood by laymen as well as by professionals. Smart and Schmidt's³⁴ finding that ulcer patients had more traffic accidents than the general driving population supports Halliday's thesis that psychosomatic affections tend to occur in association. Our finding that 17.3% of the general population reported two or more psychophysiological conditions "regularly" also supports that viewpoint.

A rising frequency of posttraumatic neurosis, in Modlin's³⁵ terms, the "postaccident anxiety syndrome," appears to be directly related to our rapid rate of social and technological expansion. Modlin describes the patients exhibiting this syndrome in both social and medical terms; they are integrated into society before the trauma, but, in reality, they cannot adapt to the rate of technological change. After the accident they cannot cope because of limited "intrapsychic capacities which, in a crowded world of swift mobility, precipitant crises, and incredibly intricate technological innovations, render them disablingly vulnerable to the inevitable hazards of living in such a world." ³⁵

Coronary Heart Disease

Coronary heart disease (CHD), with its many classic epidemiologic and social psychiatric aspects, has become an epidemic of immense

proportions rivaling many of the tragic ones of the past. The annual incidence of myocardial infarction in selected areas in the United States is now 8–9/1,000 men aged 45–64. According to Mathers and Eliot,³⁶ at least 500,000 Americans die every year from ischemic heart disease; the number of deaths from heart disease of all types reached a high of 1,073,460 in 1973 (most were caused by CHD). Harris³⁷ declares: “We are again in the age of the great pandemics. Our plague is cardiovascular.”

Moreover, the age base has been shifting to younger groups; for men between the ages of 25 and 44, the annual death rate from CHD rose from 46 to 52 per 100,000 between 1950 and 1972.³⁸ This shift toward younger groups presages an increasing frequency of a disease. Hinkle²⁴ notes ironically that CHD appears to be “the outgrowth of several features of our society that we regard as most desirable.” These include an abundant diet rich in protein, a fascination with technology and a resulting lack of exercise, and cigarette smoking to relieve the tensions of a demanding, competitive life.

The Framingham Study: This intensive epidemiologic investigation was started in Framingham, Massachusetts, in 1949 to study the incidence of CHD and risk factors associated with its development.^{39,40} It is an important study for several reasons. First, the ongoing study followed a well-developed research design for more than 20 years. Second, it has provided a baseline for comparable studies in Honolulu, Puerto Rico, the Western Collaborative Group Study (WCGS) in California, and a study of Japanese men living in Japan, Hawaii, and California. Third, some of the collaborative studies have included assessments of the subjects’ personality characteristics.

To start, the investigators drew a probability sample of 1,079 men born between 1890 and 1920, but the size of the original sample has increased greatly; new subjects—men entering the 45–64-year age group—were added to the original cohort when reexaminations were done at the regular two-year intervals to provide a total prevalence population of 8,486 men. They have been given thorough clinical and diagnostic examinations. In addition to clinical evidence of CHD, a history of heart disease, or of its being noted on the death certificates, CHD has been determined by strict electrocardiographic (ECG) criteria, chest X rays, enzyme studies, and other procedures. Risk factors (termed “characteristics”), such as blood pressure and serum cholesterol, phospholipid, and blood glucose levels, have been measured by standardized laboratory procedures. For examinations 1–7 (14 years), the population at risk in Framingham was 14,054 person-year experiences.

The total prevalence of myocardial infarction at time of entry into the study was high—14.6 per thousand by clinical criteria and 22.6 per thousand on the basis of ECG changes. The prevalence rate on entry was 14.7 per thousand for men aged 45–49, 15.7 per thousand for those aged

50–54, 29.8 per thousand for the age group 55–59, and 37.4 per thousand for those aged 60–64.

In 1974 the incidence of myocardial infarction per year, measured by ECG changes or death from CHD, was reported as 8.4 per thousand. The incidence rate increased with age: 2.6 per thousand in those aged 45–49, 8.2 in those aged 50–54, 11.0 in the age group 55–59, and 15.4 in those aged 60–64.

Of the men at risk who showed no evidence of CHD at the time of entry into the study, 140 have died—58 from CHD, 10 from cerebrovascular disease, 15 from other cardiovascular diseases, and 57 from other causes. Thus, CHD accounted for 41% of all the deaths in the Framingham subjects, a rate of 4.13 per thousand per year.

The relationship of risk factors, such as systolic and diastolic blood pressures, serum cholesterol level, blood glucose level, weight, number of cigarettes smoked per day, etc., to the incidence of CHD is being evaluated by sophisticated univariate and multivariate techniques. Those associated with the incidence of CHD are elevated systolic and diastolic blood pressures, serum cholesterol, a large number of cigarettes smoked daily, and diminished total vital capacity. The multivariate analyses indicated that elevated systolic blood pressure, high serum cholesterol, and smoking a large number of cigarettes per day were positively associated with an increased incidence of coronary heart disease.

Comparisons Among Framingham, Honolulu, and Puerto Rico: Results of studies using a similar methodology have been obtained from cohorts in Honolulu and Puerto Rico.⁴⁰ In the Honolulu Study, the total population at entry was 7,555 men of Japanese ancestry living on Oahu, Hawaii, between the years 1900 and 1919. The Puerto Rican group consisted of 8,751 men from four urban and three rural districts in or adjacent to San Juan who were born between 1900 and 1919.

The prevalence of myocardial infarction (according to ECG criteria) on entry into the study was much lower in Honolulu, 14.3 per thousand, and in Puerto Rico, 13.3 per thousand, than in Framingham, 22.6 per thousand. The incidence per year for myocardial infarction or death from CHD was about the same in Honolulu, 3.2 per thousand, as in Puerto Rico, 3.5 per thousand, but was considerably lower than in Framingham, 8.4 per thousand. Differences were relatively small for men in the age group 45–49: Honolulu, 1.9, Puerto Rico, 2.2, and Framingham, 2.6 per thousand per year. The excess incidence in Framingham was found in men aged 60–64: Honolulu, 5.0, Puerto Rico, 5.2, and Framingham, 15.4 per thousand per year. Mortality rates for CHD were 1.01 per thousand in Honolulu and 1.66 per thousand in Puerto Rico, less than half the rate in Framingham, 4.13 per thousand per year. The authors of “Differences in Coronary Heart Disease in Framingham, Honolulu, and Puerto Rico”⁴¹ conclude that mortality

from CHD (as well as the overall level of mortality) was "substantially higher in the Framingham cohort than in Honolulu and Puerto Rico. . . . The difference in CHD mortality was more striking than differences noted in morbidity suggesting that not only is CHD more common, but that it is also more lethal in Framingham."

Statistically significant risk factors associated with myocardial infarction or death from CHD in Honolulu were increased weight, elevated systolic or diastolic blood pressure, and a large number of cigarettes smoked per day. In the Puerto Rican group, risk factors were increased weight, elevated systolic or diastolic blood pressure, a high serum cholesterol level, and diminished vital capacity. The findings from these three studies have not demonstrated the etiology of CHD. The investigators suggest that other processes need to be explored to obtain greater knowledge about the role of both risk factors and protective factors in CHD.

Epidemiologic Studies of Coronary Heart Disease in Japanese Men Living in Japan, Hawaii, and California: A large-scale study of 13,000 Japanese males born between 1895 and 1924, 8,006 Japanese males born in Hawaii between the years 1900 and 1919, and 2,319 Californian Japanese males born between the years 1895 and 1924, is being conducted to obtain a precise estimate of prevalence, incidence, and mortality of coronary heart disease and cerebrovascular disease in the three populations.⁴² In addition, the investigators are studying common risk factors, such as blood pressure, diet, cigarette smoking, weight, and serum lipid and cholesterol levels.

Early reports indicate some genetically determined population differences, such as blood groups, stature, and skeletal size. Also, the prevalence of severe coronary atherosclerosis found on autopsies of men in Japan is only about one-tenth that in the United States. Although the overall mortality rates are about the same for men in Japan as in the United States, the mortality rate for CHD is much higher among Americans than among Japanese: in contrast, the death rate from cerebrovascular disease is much higher in men in Japan than in the United States. The morbidity rates for both CHD and cerebrovascular disease in Japanese-Americans living in Hawaii and California fall between the corresponding rates in men in Japan and white American males.

The researchers are gathering data on environmental and behavioral characteristics, such as diet and cigarette smoking, and on characteristics determined by both genetic and environmental influences, such as weight, blood pressure, glucose tolerance, and serum lipid and uric acid levels. The subjects are being given clinical and laboratory examinations; and, post-mortem examinations will be carried out on all of the Japanese since they are inhabitants of Hiroshima and Nagasaki and are also being studied by the Atomic Bomb Casualty Commission. This comparative, three-popula-

tion study should illuminate the role of environmental and other risk factors on the incidence of CHD, since all of the subjects are Japanese men living in three distinctive environments.

Coronary Heart Disease in the Western Collaborative Group Study and in Framingham: The Western Collaborative Group Study⁴³ is a prospective epidemiologic study in California that began in 1960–1961. The population consists of 3,154 initially well men aged 39–59 who have received complete physical and laboratory evaluations annually. Data reported in 1969 reveal that the annual incidence of CHD is 9.6 per thousand subjects at risk per year (aged 39–59), slightly higher than the incidence in men aged 45–64 in Framingham, 8.4 per thousand, and much higher than the risk in Honolulu, 3.2, and Puerto Rico, 3.5.

In addition to the annual examinations, the subjects have been given structured psychological interviews to classify them as either the Behavior Type A or Type B. These behavior types, delineated by Roseman and his colleagues⁴⁴ in 1964, have the following characteristics: Type A behavior includes aggressiveness, competitiveness, chronic impatience, preoccupation with deadlines, and a sense of time urgency. Type B behavior is characterized as being much more relaxed and much less hurried than type A, and does not exhibit competitiveness, aggressiveness, and chronic impatience.

Many of the WCGS results can be compared directly with those from the Framingham Study, since the methodology is similar except that there are no data on Type A–Type B behavior patterns on the Framingham group. The risk factors under consideration (excluding the behavior patterns)—age, systolic blood pressure, serum cholesterol, relative body weight, cigarette smoking—have been summarized in logistic risk equations in the WCGS and Framingham. With the exception of abnormal electrocardiographic findings, which were excluded in the WCGS group, there were no statistically significant differences in the risk factors between the WCGS and the Framingham group. Thus, there is relative agreement between the two groups' CHD risk scores in both younger- and older-aged subjects.

When the subjects in the WCGS were evaluated using the Type A or Type B behavior pattern as an added risk factor, the risk for CHD was 1.9 times higher in Type A than in Type B men in the younger age groups, and 2.1 times higher in Type A than in Type B men in the older age groups. The excess CHD risk for men aged 39–49 directly related to Type A behavior is 9.2 per thousand subjects in the lowest risk decile, and the corresponding excess risk is 104.2 per thousand for Type A subjects in the highest risk decile.

Brand *et al.*⁴⁵ think that if therapeutic interventions could modify the Type A behavior pattern, the risk for CHD would be substantially diminished. “In the younger decade [aged 39–49] the estimated CHD risk

per 1,000 subjects over a period of 8.5 years would be reduced from 64.5 to 46.1, which would give a 28.5% reduction in CHD cases with an estimated standard error of 7.6%. In the older decade [aged 50–59] the estimated CHD risk per 1,000 subjects in 8.5 years would be reduced from 123.8 to 81.5 which would give a 34.2% reduction with an estimated standard error of 9.9%. For both age groups combined, the estimated percentage reduction in CHD cases . . . is 31% with an estimated standard error of 6.6%.” These investigators believe that Type A behavior pattern is associated with CHD because Type A behavior pattern may affect traditional risk factors. For example, Suinn⁴⁶ reports that modification of the Type A behavioral pattern was associated with a decline in the serum cholesterol levels of coronary heart disease patients.

Sociopsychologic Factors and Coronary Heart Disease

In 1971 Jenkins^{47,48} completed a comprehensive review of 160 articles dealing with the psychologic and social precursors of CHD. He concluded that seven general categories of social psychological factors probably could be considered to be correlates of this illness. Although no consistent relationship has been observed between a single social-status index and CHD, status incongruity or inconsistency (discrepant levels of occupation, education, and income for an individual) appeared to be associated prospectively with coronary heart disease. In addition, a positive relationship has been found between coronary heart disease and both intergenerational mobility and migration. Jenkins thinks that higher levels of anxiety and neuroticism seem to precede coronary heart disease, although the relationship between manifest anxiety and denial may complicate such a conclusion. Other social psychological factors associated with CHD appeared to be life dissatisfactions and environmental stress that are reported retrospectively more often by CHD patients than by other patients and controls and the Type A behavior pattern.

Very recently, Jenkins^{49,50} updated his review of psychologic and social risk factors for CHD. Studies published between 1970 and 1975 show that social structural variables, such as social mobility, educational level, and the number of life change events, are not as strongly associated with risk for CHD as had been thought in the past. A reappraisal of the associations between either status incongruity or social mobility and the incidence of coronary heart disease discloses that there is conflicting evidence about the validity of some of the associations that have been found. But, Jenkins emphasizes: “Disturbing emotions, such as anxiety and depression, interference with sleep, the Type A behavior pattern and perhaps exaggerated blood-pressure response to the cold-pressor test all seem consistently related to coronary-disease risk under a variety of research circumstances. Work overload and chronic conflict situations also

seem related to coronary-disease risk, but with somewhat less strength and consistency.”⁵¹

Jenkins thinks that the role of the central nervous system in the etiology of CHD is an important area that has not been studied comprehensively. New research should consider three methodologic issues that have become apparent recently. These are (1) the need for comparison groups, probably not healthy controls but patients with other life-endangering illnesses, (2) the concomitant study of psychosocial and standard risk factors with evaluations of Type A behavior, and (3) the recognition that angina pectoris and myocardial infarction seem to be differentially related to social psychological variables and should be considered as distinctive entities in the research design. Thus, as coronary heart disease is being studied intensively and extensively, fewer risk factors are being found to be associated with it, although newer evidence indicates that the Type A behavior pattern makes a substantial contribution to the risk.

Appels has presented an intriguing study that links the culturally induced achievement orientation of a society with the incidence of cardiovascular disease. He states that the coronary patient seems to “mirror the characteristics of a fast moving, competitive and aggressive society.”⁵² The Type A person is portrayed as one who “cannot manage or handle the pressures of the industrialized, . . . achievement-oriented society and who, *by this very failure, shows the characteristics of this society in an excessive way*” (italics ours).⁵³ Meanwhile, the number of persons dying from heart disease in the United States has dropped slightly from 1973 to 1975, despite the increase in population during that time.⁵⁴ Improved medical care is considered to be the chief reason for the decline in mortality from heart disease, including CHD.

Relationships

Principles of psychosocial medicine hold that man and his now almost exclusively social, man-made environment are inseparable, interacting, and mutually influential. Thus, sociocultural processes, role functions and expectations, and the personality and the self with its instinctual and social needs constitute a mutable, complex system. From this point of view, it is difficult to speak about the etiologic significance of specific sociopsychological factors since the entire system is an interacting one, and we are in the midst of social change and culture lag.

Halliday¹¹ proposed an ontogenetic theory of psychosomatic illnesses, which was grounded on the “progressive unfolding of a ‘life’ in historical time in accordance with the orderly mode of development characteristic of its species.” Particularly during the stages of infancy, both the physical and emotional development of the child depend upon approval and disapproval by others. Conditioning occurs during early childhood and can

eventually be woven into patterns of psychobiological reactivity that are associated with health and illness in adult life.

Halliday related changes in the social climate of the child and the adult that took place in Great Britain between the 1870s and the 1930s to changes in the incidence of various illnesses. The physical environment of the infant in the 1870s was appallingly bad because of lack of sanitation, overcrowding, poverty, etc. But viewed psychologically, the infants and young children were allowed a great deal of freedom; frustrations were imposed on the child only during the Oedipal period. In contrast, the infants reared in the 1930s were fed from bottles on schedule; "the 'infant in arms' had become the 'kid in the carriage'"; bowel training was instituted early and thoroughly. Physically, the environment had improved and the infant mortality rates had fallen drastically. Halliday suggested that, psychologically, the imposed system of conditioning child-rearing practices was conducive to physiological dysfunctions that became psychophysiological illnesses in later life. Such changes led to the development of the obsessive character type with its associated tensions and physiological dysfunctions. As a result, hysteria, common in Victorian England and frequent among enlisted men in the British Army during World War I, was comparatively rare during World War II when anxiety, depression, and psychophysiological disorders became extremely common diagnoses.

To evaluate relationships between social processes and the occurrence of psychophysiological conditions, in the Florida Health Study we compared the 286 respondents who reported having two or more psychophysiological conditions or symptoms "regularly" with the 797 who had none "regularly."⁵ Significantly more of the respondents in the psychosomatically ill group were blacks (23%) than whites (16%), females (23%) than males (10%), in the older age groups (22–24%) than the younger age groups (11–16%), and poor (24–30%) rather than in the upper income brackets (10–12%). A profile of the persons with multiple psychosomatic illnesses showed that they tended to be widowed, separated or divorced, and many were unemployed, retired, or disabled. They were likely to have lived in their hometowns for long periods of time, but as a group, they had been neither more nor less mobile than others in our rapidly moving society. Significantly fewer of them believed that they could call upon either relatives or friends for help in time of trouble. The majority of the psychosomatically ill attended church, but only a fraction participated in community activities such as clubs and organizations.

From this profile, it appears that lower SES and the lack of meaningful social support systems are features that characterized that psychosomatically ill group. At the turn of the century, Durkheim⁵⁵ expressed forebodings about the increasingly rapid rate of social change and the progressive loss of neighborhood and small group organizations and functions, *les corps intermédiaires*, that he viewed as being essential for emotional well-

being. Halliday believed that Western society in the middle of the twentieth century was in a stage of disequilibrium that verged on disintegration, and would be attended by failure of integration of the "psychoneuro-endocrine system" of the members of the society.¹¹ More recently, Ollendorff⁵⁶ maintained that: "Society as a whole is fundamentally responsible for the phenomena which are reproduced in every human being." The influence of society is seen fundamentally as being much greater than that of the immediate family which can be viewed as a more or less faithful transmitter of prevailing social forces. He emphasized in Reichian terms that character formation occurring in infancy and childhood results from "the endless process of structuring as promoted by the impact of society as a whole." And recently, Gerald Caplan⁵⁷ has insisted that the presence and utilization of social support systems are the key processes in promoting health and deterring illness.

These points of view support Hinkle's²⁴ contention that all diseases are "psychosomatic." A unitary concept of man and his environment postulates that an individual's mental and physical well-being are dependent, in terms of probability, on social influences at various levels ranging from the broad societal plane to interactions in the community and within the family circle. The quality and intensity of these influences and interactions are mediated through the nervous system with resulting and reciprocal effects on "the body and the body politic" as well as on the mind.

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16

Cultural Psychiatry

We have imprisoned our own conceptions, by the lines which we have drawn in order to exclude the conceptions of others.

—SAMUEL TAYLOR COLERIDGE¹

Scientific attempts to understand the relationships between culture and mental illness can be traced to the early decades of the nineteenth century when both psychiatry and anthropology emerged as disciplines. Throughout most of that century, however, early workers in both fields followed separate paths in the pursuit of their specific interests. As a corollary to overriding concerns about a possible increase in mental illness in Western nations resulting from industrialization and sociopolitical turbulence, early psychiatrists also wondered about the existence and extent of mental illness among primitive groups. Meanwhile, anthropologists were interested primarily in the histories of various cultures and the meaning of their beliefs and customs. They presented some descriptive psychological portraits of primitives and other groups.

At the beginning of the twentieth century, advances in psychiatry and significant achievements in anthropology led to a convergence of interests in the ethnic psychoses, transcultural psychiatry, and, more fundamentally, the relationships among culture, personality, and mental illness. Kraepelin's delineation of the major psychiatric syndromes gave workers in both fields a scientific framework for defining and classifying mental disorders. Freud's discovery of psychoanalysis supplied an explanatory model for understanding cultural and mental processes producing neurosis. And anthropology became a science with Franz Boas' insistence on facts derived from observation, high levels of scholarship, and critical methods rather than generalities. Ruth Benedict² remarked: "Boas found anthropology a collection of wild guesses and a happy hunting ground for the romantic lover of primitive things; he left it a discipline in which theories

could be tested.” Both psychiatrists and anthropologists were interested in finding laws that governed psychological and cultural phenomena, and the relationships between culture and mental life.

In this chapter, we will glance at the early development of common interests in psychiatric epidemiology and cultural anthropology. Then, taking into account the many theoretical and empirical advances in both fields, we will review their convergence of interests, describe a few of the ethnic psychoses, discuss culture and personality, and present some findings from transcultural psychiatry. Finally, we will consider some current aspects of cultural psychiatry and a few timely issues in the field.

Early Approaches

Pioneers in both psychiatry and anthropology were influenced by the romantic *Zeitgeist* of the eighteenth and early nineteenth centuries. Poets, whom Shelley called the “unrecognized legislators of mankind,” expressed these sentiments. For example, in “The World Is Too Much With Us” (1807), Wordsworth wrote: “Great God! I’d rather be/A Pagan suckled in a creed outworn;/So might I, standing on this pleasant lea,/Have glimpses that would make me less forlorn.”³

Psychiatry

Early investigators who attempted to make comparisons of the number of mentally ill in different countries speculated about national character types, cultural traits, and socioeconomic conditions. For example, in 1820, George Man Burrows⁴ concluded, from his study of case registers, that the frequency of mental illness probably was higher in Scotland than in England because of the high regard for the “moral and intellectual character of the Scotch.” He attributed the very high frequency of mental disorders in Ireland to the widespread deprivation and to alcoholism.

In 1828 Andrew Halliday⁵ presented *A General View of the Present State of Lunatics, and Lunatic Asylums, in Great Britain and Ireland, and in Some Other Kingdoms*. He believed that mental illness was rare in “the savage tribes” in Africa, the slaves in the West Indies, and the “contented peasantry of the Welsh Mountains, the Western Hebrides, and the Wilds of Ireland.” In contrast, mental illness was a not uncommon malady in the civilized nations of Western Europe because of overexertion of the mind or the bodily powers with consequent “derangement of the vital functions, that re-act upon the brain, and damage its operations.” Thus, cultural psychiatry dawned with the belief that mental illness was a by-product of civilization.

Esquirol,⁶ in the 1830s, along with Burrows and Halliday, thought that mental illness was caused by both hereditary and moral factors. He

concluded that the observed increase in mental illness in France was attributable to improvements in facilities. But he added a disclaimer: possibly insanity was increasing during the 1820s and 1830s because of a greater laxity in moral standards.

There is no more domestic affection, nor respect, nor love, nor authority, nor reciprocal dependencies. Each lives for himself; no one forming those wise combinations, which connect the present, with coming generations. . . . When we add to these causes the manner of life of the women in France . . . together with the misery and privations of the lower classes, we shall no longer be astonished at the disorder of public and private morals, nor any longer have a right to complain, if nervous disorders, and particularly insanity, multiply in France.⁶

Esquirol's reflections, one and one-half centuries ago, before the concept of culture had been elaborated, point out that man's cultural legacy—sentiments, customs, morals, and laws—is transmitted to subsequent generations and thereby influences their mental well-being.

In 1878 Daniel H. Tuke, in *Insanity in Ancient and Modern Life*,⁷ first reviewed the history of mental illness in prehistoric times and gathered reports on "primitive" societies from missionaries and explorers. He stated that prehistoric and ancient societies were "no strangers to the inroads of mental disease," but concluded that mental illness was probably much rarer in early and uncivilized groups than in societies which attained highly developed cultures. However, Tuke did not romanticize "the noble savage," extolled by Rousseau as enjoying the earth's "fruits and flowers without toil or worry." Instead, he quotes Voltaire's sarcastic retort: "Almost you persuade me to go on all fours."

Tuke believed that, among the Egyptians, Greeks, and Romans, the frequency of mental illness increased with the maturation of the society, particularly during its decadent period. But, insightfully, he pointed out that the numbers of the insane probably were much fewer in ancient times than in the nineteenth century because life probably had been more difficult in the past—those less able to adapt and those with feeble constitutions perished in infancy or childhood, or certain customs had limited the propagation of the mentally ill. For example, in Palestine, sons affected with moral insanity, manifested by disobedience to their parents or violation of the group's laws, were stoned to death and in Greece and Rome infanticide helped stamp out cases of mental deficiency or derangement. Tuke's idea expressed Herbert Spencer's concept of "the survival of the fittest." Current reports show that mental illness is associated with an excess mortality risk; thus, early explorers' and missionaries' comments about the rarity of mental illness in primitive societies might have had some validity.

Then, from his studies of the case registers in Great Britain, Tuke concluded that insanity had been increasing. He thought that it had become

more common in the lower classes because of alcoholism, malnutrition, and other types of deprivation, and that it was increasing in the upper classes because of the corruption of morals, the use of stimulants, and the stresses of modern life. Tuke feared that the complexity of modern life was threatening to exceed the capacity of man's nervous system for adaptation. Writing in an era that was dominated by theories of evolution and that classified human history into developmental periods—savagery, barbarism, and civilization—Tuke did not indict civilization per se as the cause of increasing mental illness. Instead, he blamed the *abuses* of civilization for the apparent increase in this malady, and offered the following apologia:

[Civilization] is simply the penalty which superior organisms have to pay for their greater sensitiveness and susceptibility. Civilisation involves risks because it entails a higher form of mental life, and our highest wisdom consists in thankfully accepting this boon and escaping one of these risks by the prevention of insanity.⁸

Tuke's views were courageous; Social Darwinism was flowering. His ideas were idiosyncratic, if not treasonous, in the complacent, self-righteous Victorian society of the 1870s which believed in progress and took pride in its industrial and assumed moral supremacy. Primitive groups were seen as either having degenerated—fallen in the evolutionary scale—or, more commonly, as just starting to ascend the lower rungs of the evolutionary ladder. Herbert Spencer,⁹ perhaps the leading proponent of cultural evolution, viewed social organization, marriage, and other institutions and customs as moving through progressive developmental stages, and other writers of the time placed science and religion in a similar perspective. Wordsworth's famous lines were dated; Kipling's popular poem "Take up the White Man's Burden" (1899) expressed the sentiments of the time about natives and aborigines.

Anthropology

Anthropology emerged during the Enlightenment as an offshoot of history and philosophy. Harris¹⁰ credits John Locke with supplying the metaphysical foundation, and the French historian Turgot with furnishing a statement of purpose for cultural anthropology. Locke's *An Essay Concerning Human Understanding* (1690) was "midwife of all those modern behavioral disciplines, including psychology, sociology, and cultural anthropology, which stress the relationship between conditioning environment and human thought and actions." And Turgot's project for *Universal History* (1750) encompassed "the origins and revolutions of government; the development of language; of morality, custom, arts and sciences. . . . [Behavioral differences are attributable to] a lucky arrangement of the fibers in the brain, a greater or lesser quickness of the blood . . . [and] the effect of *education* [*Italics ours*]." ¹¹

For at least 2500 years, there has been interest in differing societies' customs and beliefs. In the fifth century B.C., Herodotus presented descriptions of various peoples' customs and predominant character traits. A few centuries later, Theophrastus, in *The Characters*, delineated personality types in succinct, colorful paragraphs. This tradition was continued until the late nineteenth century. For example, in 1527, Agrippa stated: "The Scythians were always eminent for their Magnanimity." As late as 1873, Herbert Spencer described "The Emotional Characters", in his *Descriptive Sociology*; the Samoans were "not so lively as Tahitians. Good humored, social in disposition . . . indolent, fickle, and deceitful," and the Iroquois "show little desire for social intercourse between the sexes, and have been said to be incapable of sexual love. The father rarely caresses his children."¹² Such pithy stereotypes provide a historical background for the more sophisticated character typing of peoples such as Ruth Benedict's¹³ famous *Patterns of Culture*, in which she describes the Kwakiutl Indians in the northwestern United States and Canada as "megalomaniac paranoid."

In the sixteenth and seventeenth centuries, explorers and missionaries described primitive groups' beliefs, customs, and concepts of physical and mental disorders, especially the drugs and rituals used for healing. Voodoo death in South American Indians was reported in 1587 by Soares de Souza.¹⁴ In the sixteenth century cinchona bark was exported from Peru to Europe as a cure for fevers. In the eighteenth century, Jesuit ethnographers provided the French *philosophes* with information about non-Western institutions and exotic customs and habits. Most of the accounts of natives' life styles and healing practices were anecdotal; some were only ridiculous stories of the bizarre that verged on absurdity, whereas others were meticulous descriptions that laid the foundation for ethnographic research. In the 1830s, for example, Schoolcraft¹⁵ visited the Ojibwa Indians and presented a scholarly report of their "mental realities," and Lewis Morgan's¹⁶ 1851 study of the Iroquois is considered to be a classic.

The "concept of culture," however, was not formulated until the twentieth century. In fact, the word "*Kultur*"¹⁷ appeared first in German in 1793 about the same time that the towering intellect of the age, Immanuel Kant, designated anthropology as the scientific study of man, including his psychology. In 1871 the father of modern anthropology, Edward Tylor, established the word "culture" in its current technical sense. He defined culture as "that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society."¹⁸ Tylor's concept of culture was based on rationality and evolutionism. Cultures were human systems that could be found in varying stages of development in different societies. They revealed man's intellectual progress since they were the products of rational thought. Thus, primitive groups were in earlier developmental

stages than Western society. They had not degenerated; instead, they were just proceeding up the evolutionary scale.

Tylor also advanced the doctrine of psychic unity, “the belief that in the study of sociocultural differences, hereditary (genetic) differences cancel each other out, leaving ‘experience’ as the most significant variable.”¹⁹ This thesis, which has been the heart of the liberal spirit since the days of Turgot, Rousseau, and other great thinkers of the eighteenth century, has important implications for psychiatry. It is basic to our concepts of the mental apparatus functioning as an intermediary between instincts or drives on one hand and the conditioning, repressing forces of cultures on the other. Géza Róheim²⁰ credits Adolf Bastian, professor of ethnology at the University of Berlin and one of Franz Boas’ mentors, for this seminal idea—that psychic unity is a fundamental characteristic of the human species.

Tylor’s view of culture reflected the spirit of optimism that pervaded much of Western society during the latter part of the nineteenth century—a spirit that included faith in rationality, adherence to the principles of Social Darwinism, and belief in progress stemming from evolutionary views of man’s development and the inevitability of progress through science. But the Age of Reason that, in Spengler’s²¹ words, had made the eighteenth century “a very carnival of abstract and immaterial thinking, in which the great masters of analysis and . . . a small group of rare and deep intellects revelled in the most refined discoveries and speculations,” was in its twilight phase. Principles of relativity and uncertainty were beginning to penetrate Western thought as the nineteenth century drew to a close. The concept of the unconscious was being accepted even before Freud’s early writings in the 1890s. And the significance of emotion and subjectivity were replacing convictions about infallibility of reason and objectivity. The concept of culture elaborated by Franz Boas expressed this change. According to Hatch,²² the basic premises of Boas’ concept were that (1) culture was an emergent system; (2) a culture could be understood only by seeing it through the eyes of a participant—by experience; and (3) emotion, not rationality, was the guiding principle responsible for institutions, customs, and behavior.

Anthropologists’ interest in culture and mental illness stem directly from Franz Boas’ attempts to understand Eskimos’ migrational patterns, customs, and adaptation to the Arctic regions according to geographical and other environmental factors. Following his famous trip to study the Eskimos of Baffin Island in 1883–1884, however, he rejected geographic and environmental determinants of culture to focus on psychophysics or “physiological and psychological mechanisms” that could explain cultural life. Boas’ emphasis on gathering data systematically and objectively, and his striving for methodologic rigor were a sharp contrast to the haphazard, anecdotal work of most of his contemporaries. Margaret Mead²³ states that

he was “the man who made anthropology into a science.” Later Boas’ interest centered on culture as the product of mental processes—human institutions were expressions of mental life. His concept of culture emphasized the dynamic role of emotion and the binding role of tradition. And he insisted that a people’s mental life could be understood only by knowing their history, accepting their emotions, and seeing their behaviors from their point of view. In *The Mind of Primitive Man* (1911), he asserted: “We must remember that, no matter how great an influence we may ascribe to environment, that influence can become active only by being exerted on the mind; so that the characteristics of the mind must enter into the resultant forms of social activity.”²⁴

The Convergence of Interests

As we have seen, early psychiatric investigators had raised many of the important issues that would lead psychiatrists and anthropologists to discover a common ground of interest. And in anthropology the doctrine of psychic unity and Boas’ emphasis on emotions and on the necessity to study relationships “between the individual psyche and the forms of culture”⁹ led to the development of the field of personality and culture. Freud’s discovery of psychoanalysis provided the stimulus for studying mental illness in aboriginal groups—an endeavor that anthropologists were ready to undertake. Freud conceptualized neurosis as a resultant of the struggle between the individual’s instinctual drives and civilization’s repressing processes, and theorized about the development of the mental apparatus. His psychoanalytic model specified links between interpersonal and intrapsychic events and the mechanisms responsible for pathological outcomes. Anthropologists were faced with the provocative question: Could this model be applied to groups with social structures and interpersonal behavior codes vastly different from those in Western society?

In *Totem and Taboo* (1913), his first major work that had an anthropologic perspective, Freud stated:

If we may regard the existence among primitive races of the omnipotence of thoughts as evidence in favour of narcissism, we are encouraged to attempt a comparison between the phases in the development of men’s view of the universe and the stages of an individual’s libidinal development. The animistic phase would correspond to narcissism both chronologically and in its content; the religious phase would correspond to the stage of object-choice of which the characteristic is a child’s attachment to his parents; while the scientific phase would have an exact counterpart in the stage at which an individual has reached maturity, has renounced the pleasure principle, adjusted himself to reality and turned to the external world for the subject of his desires.²⁵

Caudill²⁶ thinks that anthropologists should not discount these ideas too quickly. He quotes Rieff: “However fanciful these conjectural proto-

types . . . appear, Freud's basic point remains a valid one: that human culture is established through a series of renunciations." Caudill notes that Freud saw that primitive societies were repressive, often in different ways, and often in varying degrees, but that repression was a universal characteristic of a culture. Thus, culture could be linked inextricably to neurosis.

Géza Róheim,²⁷ a student of Freud, was one of the first anthropologists who tried to determine the applicability of the psychoanalytic model to primitive groups. He found that the classical neuroses were rare in the Australian tribes he studied in the late 1920s, and speculated that this was a result of the weaker intensity of repression in primitive races than in European societies. He believed in an ontogenetic view of culture and, in accord with Freud's conjectures, analogized between the infant's psyche and the primitive tribe's cultural processes. Róheim thought that continued comparative studies of groups in various stages of cultural development would show how the mind of modern man evolved. Also, he hoped that psychoanalytic anthropology would become a new science and that eventually the mind of the group, analogous to the mind of man, could be analyzed with therapeutic results.

Modern anthropologists tend to be critical of Róheim's work because of his Freudian orthodoxy and consequent biases and his penchant for speculation. But Harris²⁸ credits Róheim for the statement: "There can be many types of personality but only one Unconscious." This thesis—the existence of a universal unconscious—is fundamental to the doctrine of psychic unity and to Claude Levi-Strauss'²⁹ "Structural Anthropology." Also, Róheim emphasized the importance of studying child-rearing practices as a basic requisite for understanding a group's customs and projective systems.

In contrast to ambitious theories about the origins of culture and the development of the psychic apparatus, Malinowski³⁰ believed that a particular culture's kinship patterns, child-rearing practices, customs, and taboos persisted because they had functional value for the group. After studying the Trobriand Islanders and other groups in Melanesia 1914–1919, he concluded that "repressions of sexual instinct and some sort of 'complex' must have arisen as a mental by-product of the creation of culture." Malinowski's study of the kinship patterns in the Trobriand Islanders showed that it was a matrilineal society; instead of the European boy's repressed desire to kill the father and marry the mother, the male Trobriander desired to "marry the sister and to kill the maternal uncle." Malinowski asserted that Freud's theories "roughly correspond to human psychology . . . [and] follow closely the modification in human nature brought about by various constitutions of society."³¹

The Trobrianders permitted their children to express sexual drives; few of the Islanders were hysterical, neurasthenic, or obsessive. However, the Trobrianders recognized that two types of mental disorder—*nagowa*,

corresponding to mental deficiency, and gwayluwa, corresponding to mania—were common in the Amphlatt Islanders, a matrilineal society about thirty miles away. Malinowski's strongest impressions of the Amphlatts were "that this was a community of neurasthenics"³² and that the culture was sexually repressive. Also, he found that some of the natives of another island, Mailu, who had patrilineal kinship patterns and strict sexual mores were neurasthenics. Finally, homosexuality was almost unknown to the Trobrianders (until they were exposed to Western civilization), but was a prevalent practice among the Amphlatt natives.

Malinowski's work supported Freud's views that linked repression to neurosis and to sexual deviations, although their frequency and manifestations varied with differing cultures' kinship patterns, child-rearing practices, and both quality and quantity of repression. Malinowski concluded that "many maladjustments within the mind and in society can be traced back to the faulty cultural mechanism by which sexuality is suppressed and regulated or by which authority is imposed. . . . Thus the building up of the sentiments, the conflicts and maladjustments which this implies, depend largely upon the sociological mechanism which works in a given society."³¹

Thus, cultural psychiatry was born of psychiatrists' curiosities about the prevalence of mental illness in primitive societies and anthropologists' traditional concerns with native groups' healing practices. The field of culture and personality grew slowly; fusion of anthropology's and psychiatry's interests did not really occur until the period between World War I and World War II. In their early form, Freud's conjectures about the development of the human psyche, paralleling the development of social organization and each individual's recapitulating the evolution of culture, did not provide either psychiatrists or anthropologists with an adequate frame of reference for elaborating their observations about cultural relativity and for interpreting their data about the functions and purposes of customs.

The Ethnic Psychoses

In the meantime, "uncivilized groups" became the prey for economic conquest and exploitation. For example, the development of the rubber industry in Malaya in the 1880s led to rapid exploration and colonization of even the remote inland areas, first by the Dutch and later by the British. As a result, the ethnic psychoses were discovered. In 1883 O'Brien described a case of *latah* in Malaya, and in 1897 Gilmour Ellis defined *latah* as a paroxysmal state in which suggestion is followed by uncontrollable actions such as repetitive gesticulations or bodily movements and foul, often coprophilic verbalizations. Earlier, in 1893, he described *amok*—sudden, savage, homicidal rages—in southeastern Asiatics. Abraham³³ noted that the frequency of *amok* declined greatly after the death penalty was

instituted for persons who committed violent crimes, including those whom the natives considered to be suffering from amok. This illustrates the influence of laws and regulations on the prevalence of some of the mental disorders, and has implications for social psychiatry, since it points to the relationship between social control and mental illness.

During the next two decades other culture-bound syndromes were described: (1) *koro*—a mental disturbance of the southern Chinese, characterized by the patient's belief that his penis is shrinking into his abdomen; *koro* is now considered to be an acute anxiety state approaching panic that occurs in some people with sexual problems; (2) *piblokto* or Arctic hysteria—characterized by the person's screaming for one or two hours, imitating the cry of an animal, and then thrashing about on the snow and ice, nude or partially undressed; (3) *whitigo* (*windigo*) psychosis—observed in Cree Eskimos and the Ojibwa Indians of Canada, is characterized by symptoms of melancholia, sometimes followed by cannibalism. Yap³⁴ and Meth³⁵ state that the victim of *whitigo* believes that he has been transformed into a giant monster that eats human flesh, a delusion that derives from tribal mythology and reflects the struggle for survival in the stark Arctic environment; (4) *susto* or soul-loss—a mixed anxiety-depressed state, found in children and adults who usually have psychophysiological symptoms or manifestations of concurrent organic illness. This syndrome, described in Andean and Central American natives in the sixteenth century, increased greatly in frequency a few years ago in Mexico. The sufferers believed that spirits had removed their souls—the resultant hopelessness alarmed medical authorities; (5) voodoo death—the sudden death of a member of a primitive tribe (in South American Indians and Central Africans) after he had been condemned or ostracized officially by the medicine man and the assembled clan—was described by the great physiologist Walter B. Cannon¹⁴ in 1942. The offending member is ceremonially ostracized, leaves the tribe, and is found dead within 24–48 hours, without apparent cause. Cannon hypothesized that death was produced by “shocking emotional stress—to obvious or repressed terror.” Since his early report, others have verified this striking phenomenon that illustrates the influence of group processes on an individual's life or death.

Recently, Lester³⁶ reviewed Cannon's hypothesis that voodoo death is caused by prolonged pituitary-adrenal stimulation, resulting in hypovolemic shock; and he also reviewed Richter's work which showed that wild rats placed in an experimental situation where they could neither flee nor fight “gave up” and died in a parasympathetic condition of hopelessness. Lester notes that phenomena such as voodoo death have been reported among Negroes in the southern United States. He views voodoo death, and its equivalent forms seen in medical and surgical patients who “give-up,” as being the advanced condition of helplessness and hopelessness de-

scribed by Engel, Schmale, and their colleagues. Lester uses Kalish's terminology; the individual is first "socially dead" and once he accepts this as a fact, he dies—psychologically and somatically.

The discovery of the "culture-bound" syndromes provided an impetus to the field of cultural psychiatry. Although the syndromes display the influence of culture on the content of symptomatology, most investigators agree that they can be understood within the framework of our more conventional disease categories. Early in this century, Kraepelin³⁷ reported that "a visit to the institution in Singapore at once showed me that in the most different constituent parts of the mingling of nations there, among Chinese, Tanils, Malays, there were clinical pictures to record which wholly resemble the forms of dementia praecox known to us." Kraepelin believed that about 80% of the patients whom he saw could be classified as having dementia praecox.

Clyde Kluckhohn³⁸ states that cultures supply "blueprints for human relations"; these blueprints encompass pathologic as well as healthy patterns. Just as the blueprints differ and change, the manifestations of mental disorder vary among such wide-ranging groups as Eskimos with piblokto, southeastern Asiatics with amok, or Algonkian hunters with windigo psychosis. And, they vary (even among those in close proximity) among ethnic groups in the United States. Wallace³⁹ points out that windigo psychosis in Cree Eskimos and Ojibwa Indians, with its somatic delusions involving change from human to animal form, ideas of reference, supernatural persecution, and "cannibalistic panic," is a culturally appropriate picture of paranoid schizophrenia that in our cultural system would more likely involve suspicions about Communists, ideas of persecution by the FBI, and sexual themes (e.g., homosexual panic). He concludes: "Most such 'ethnic psychoses,' which reflect in their behavior the specific cultural content of the victim's society, are simply local varieties of a common disease process to which human beings are vulnerable. In this light, then, all mental disorders must be considered to reflect, in symptomatic content, the victim's past and present cultural environment."

Culture and Personality

Changing views of the ethnic psychoses—from exotic native syndromes to culturally tinted types of the more usual mental disorders—coincided with the development of the subject of culture and personality and with more sophisticated ethnographic researches. Malinowski's³⁰ work in the South Pacific had established a foundation for the functionalist school of anthropology. Its adherents held that a society's functions reflected its culturally developed institutions' mutually complementary capabilities to maintain social order at the societal level and simultaneously

satisfy basic needs at the individual level. Kiev⁴⁰ explains:

Through adherence to traditional customs and social relationships, institutionalized rituals and beliefs strengthened the meaning of the particular symbols expressed and reinforced the values of the group. . . . [G]roup rituals—like religious practices, sports, warfare, and drug-taking—contribute to (a therapeutic) reduction and rechanneling of energies and drives that might otherwise be pathologically repressed or misdirected.

The field of culture and personality flourished under Franz Boas' tutelage. He insisted that cultural anthropology's task was to study man's mental life by field work that gathered facts systematically. Harris states that the field of culture and personality was an American version of "synchronic functionalism."⁴¹ Early workers focused their efforts on describing personality characteristics typical of members of a particular group and on unraveling the sociocultural processes that produced certain personality types. Ruth Benedict's *Patterns of Culture*¹³ was an ambitious effort to depict entire societies' dominant psychological characteristics as representations of prototypic character types. Influenced by Franz Boas and by Oswald Spengler's gigantic erudite discourse on the cultural history of mankind, she portrayed the Kwakiutl Indians as Dionysian—individualistic, intemperate, megalomaniac-paranoid—and the Pueblo Indians as Apollonian—group-oriented, restrained, ritualistic, and nondemonstrative. Thus, Benedict looked for relationships between psychocultural configurations and societal integration at certain levels: emotions, character traits, and projective systems. Her conclusions have been criticized. Kiev notes that the word "paranoid" which she used to describe the Kwakiutl Indians does not have the same meaning in that context as in Western society. He continues: "This approach also led to psychodynamic formulations of social processes, despite the fact that psychodynamic concepts are derived from a different level of analysis and are inapplicable to examination of social forces."⁴²

Dunham⁴³ points out that Benedict's approach "merely made a case for the relativity of certain behavior deviations, but did not establish a case for the relativity of functional psychoses that, as Linton and other investigators report, are to be found in every culture." Furthermore, Dunham concludes that the early work on culture and the modal personality structure has not contributed significantly to our understanding of the role of cultural factors in mental illness.

But the field of culture and personality was in an exciting phase in the 1920s and 1930s. New ideas emerged from numerous sources. Margaret Mead's^{44, 45} *Coming of Age in Samoa* (1928) and *Growing Up in New Guinea* (1930) are classic ethnographic studies, highly regarded for their methodological rigor and incisive analyses of tribal customs, particularly various cultures' methods for conditioning their adolescents. Her contin-

ued study of the effects of accelerated social change on ensuing generations is a definite contribution to the history of culture and to psychiatry; and her sustained interest in the vicissitudes of childhood and adolescence is a haunting remonstrance to the conscience of our era.

In the *Future of an Illusion* (1928), Freud⁴⁶ analyzed the developmental need, in man and in a culture, for a projective system. Kardiner and Preble⁴⁷ state: "For the first time, Freud describes here the origin of what may be called a *projective system*, that is to say, a system for structuring the outer world and one's relations to it in accordance with a pattern that is laid down in an earlier experience during ontogenesis. This is a powerful idea and one with many uses." And in the 1930s, Sapir and Whorf⁴⁸ developed their famous hypothesis; linguistics was seen as "the quest for meaning" and also as a method for investigating "the semantic geometry of a culture." Linguistic analysis of a group's language, therefore, offered the cross-cultural researcher a tool for understanding their customs and rituals and also their abstractions, world views, and projective systems. Kardiner and Linton⁴⁹ formulated the concept of the modal personality, which theoretically could be described for any cultural group and understood through psychoanalytic interpretation of typical life experiences. Harris emphasizes that Abram Kardiner came close to synthesizing Freudian theory and cultural influences on personality development. Furthermore, he broadened the narrow Western society base, to which psychoanalytic theory had been restricted, to include diverse cultural variations.

The Concept of Culture

Current views of cultural psychiatry utilize a broad definition of culture that provides various stances for conceptualizing relationships between culture and mental illness. For example, Clyde Kluckhohn⁵⁰ states that culture is (1) man's social legacy, (2) the part of the environment created by man, (3) a design for living, (4) the channel for biological processes, (5) a way of thinking, feeling, and behaving, (6) a group's distinctive ways of living, and (7) a regulator of our lives. Moreover, cultures both produce needs and provide means for fulfilling them, and also supply "a set of blueprints for human relations."

Thus, the concept of culture is fundamental to our understanding of mental illness because man is a biosocial organism molded not only by his interactions with others and influenced by customs and the objects of his material culture, but also, endowed with a cultural legacy. Furthermore, the individual's biological, social, and spiritual needs and the means by which they are gratified, frustrated, or sublimated—the conflicts intrinsic to mental illness—are culturally as well as biologically determined. Any

view of a mentally ill person that does not place him in a cultural perspective is bound to be myopic.

Transcultural Psychiatry

Both psychiatrists and anthropologists now agree that mental illnesses exist in all cultures. For example, in "The Future of Psychiatry," Leon Eisenberg⁵¹ asserts that one of the strongest proofs against the "myth of mental illness" thesis is that, although explanations of the cause and nature of mental illness differ from culture to culture, all cultures "recognize and label mental disorders." Wallace⁵² states flatly that: "There are no human societies in which mental disorders, of one sort or another, never occur." And, after studying the Hutterites, Eaton and Weil⁵³ mention wistfully that there is no mental health Utopia (see page 190). Thus, in agreeing about the ubiquity of mental illness, researchers have focused their efforts on transcultural comparisons of the frequency and types of mental disorders and on specific social processes which may have implications for mental health.

Some results of studies of the frequency of mental disorder in various societies have been presented by Wittkower and Prince.⁵⁴ They note that there are many difficulties with transcultural research. For example, after using the Cornell Medical Index in a health survey of North Alaskan Eskimos, Chance⁵⁵ concluded that only items referable to physical symptoms were understood by the Eskimos; cultural distance and the Eskimos' distinctive attitudes toward mental symptoms invalidated correlations between their responses and the responses obtained in our culture to mental illness items.

Between 1946 and 1953, Rin and Lin⁵⁶ found that the total mental disorder lifetime prevalence rate for 11,000 aborigines in Taiwan was 9.5 per 1,000, very close to the rate of 9.4 per 1,000 found for 20,000 Chinese in Taiwan. However, one primitive and poverty-stricken group of aborigines had higher rates of psychoses than the Chinese. H. B. M. Murphy⁵⁷ found differences in mental illness rates among the inhabitants of 14 culturally diverse Quebec villages. He believes that the high rates of schizophrenia in the French Canadian women could be attributed to role conflict—their attempts "to escape from, or to destroy the type of marriage which their society sought to tie them to."

In 1967 Murphy, Wittkower, and Chance⁵⁸ sent questionnaires on the symptoms of depression to physicians in 30 countries throughout the world. They found that the frequency of psychotic depression correlated with the level of cohesion in the community, and postulated that depression was not common in the less cohesive communities because individuals could direct hostility outward. Also, the association between guilt feelings

and depression was most prominent in societies that had a Judeo-Christian tradition.

Culture and Mental Illness

How culture promotes mental health or induces mental illness is the crucial question. The quality of family life, types of child-rearing practices, the balance struck between expression and repression, the availability of material resources, kinds of social control processes, and, importantly, values appear to be the factors in this equation. Each must be evaluated; studying just one of them can yield only incomplete results, but studying all of them and their interrelations exceeds our capabilities both in terms of conceptualization and methodology.

Wallace⁵⁹ has proposed an "essentially homeostatic" biocultural model of mental illness that includes the interaction between biological and cultural variables. An episode of mental illness, involving both organic and functional disorders, can be conceptualized in four stages. The first is that of normal function. In the second stage, with the onset of organic interference (biochemical, circulatory, etc.), psychological dysfunction also occurs. This involves difficulty in organizing cognitive material, finding the meaning of perceptual data, maintaining motivation, and relating affect to rational considerations. Wallace terms such shrinking of the semantic matrix *desemantication*. Behavioral disturbances also appear. The third stage is characterized by negative self-evaluation, anxiety, depression, and other painful affects that lead to loss of confidence in one's ability to control behavior, to master one's environment, and to relate systematically to others. The fourth stage is that of cognitive damage which develops as a defensive response to the negative self-evaluation. Such damage may alleviate the anxiety and depression or even improve the self-image, but at a cost that can involve the overutilization of denial and projection, paranoid oversimplification, delusions, or withdrawal from society.

This model is appealing because it encompasses the biological, psychological, and social factors involved in illness. Throughout the second, third, and fourth stages, the victim's community evaluates and responds to him. Thus, the community influences the illness, favorably or unfavorably, and either tolerates or extrudes the person in accord with the given society's beliefs and values.

Other workers postulate that "psychocultural stress factors" produce mental illness. Wittkower and Prince⁵⁴ classify these stress factors in three major categories: cultural content, social organization, and sociocultural change. Major elements referring to cultural content include taboos, value saturation, value polymorphism (conflicting values), role deprivation, and sentiments. Those referable to social organization are anomie and social

rigidity. And the third category, the rapid rate of social change, has been a major concern during the last 50 years when technological developments have transformed the character of life throughout most of the world.

Culture Change and Mental Illness

As early as 1922, William F. Ogburn⁶⁰ began to develop the theory of culture lag which he later defined: "A cultural lag occurs when one of two parts of culture which are correlated changes before or in greater degree than the other part does, thereby causing less adjustment between the two parts than existed previously." For Ogburn, an early example of culture lag was the change in family life that occurred when many women's customary household activities were changed by the use of appliances while, concurrently, the dominant ideology required that her "place was in the home." Thus, he foresaw the blurring of roles that has been a problem for women in Western society during the last 25 years. Culture lag, Ogburn believed, produced maladjustments that appeared as mental or physical illness.

Numerous studies have attempted to draw relationships between various types of social change—industrialization, war, migration, acculturation, etc.—and the occurrence and type of mental disorder. Dunham⁶¹ cites Murphy's review of these studies: complex associated factors are more likely than social change to be responsible for observed increases in mental illness. Dunham also emphasizes that rapid social change produces behavior changes in those involved and that various groups are differentially affected, some to advantage and others to disadvantage. "But in either case, it should be clear that the effect is a behavior change and not a mental disorder." This point reminds us of the complexity of interacting factors that fall under the rubric "social change" and of our need to specify mechanisms by which changes in institutions affect the emotional adjustment of individuals.

Margaret Mead contends that rapid culture change has implications for mental health. When there is an accelerated rate of change: "the prefiguration of the future and the consolidation of the past, or finally, the increase in automatic behavior and sureness with age—all these are missing."⁶² Therefore, the rapidity of social change can be disorienting and this disorientation can be transmitted to the next generation. Some characteristics of the effects of a disorienting rate of change are that values are estimated on a single scale (e.g., money), that experience becomes "atomized into units" which have no relationships, that the approach to life is tentative, and that there is a tendency for personality fragmentation.

Cultural Psychiatry in a Complex Society

Current views of the relationships between culture and mental illness have been classified by Anthony F. C. Wallace⁶³ according to (1) cultural

epidemiology, (2) culture as a pathogenic process, (3) culture as a therapeutic process, and (4) the influence of mental disorder upon culture. As we have seen, mental illness is present in all cultures, and the exotic types of mental disorder are now considered to be local variants of basic psychiatric syndromes. We know that the variable manifestations of mental illness are culturally shaped to some extent. But we know little about the frequency and distribution of the mental disorders transculturally.

Those previously concerned with interrelations between culture and mental illness searched for isolated primitive societies where such relationships might be easier to investigate than in complex urban groups. But today we are living on a shrinking planet inhabited by almost four billion persons; transcultural psychiatrists find it almost impossible to locate discrete groups to study. The accelerated rate of change accompanying the technological revolution—fantastic achievements in communications, the emergence of the developing countries, sprawling urbanization, and the centralization of power in the dominant nations—is spreading a veneer of homogeneity over most of the globe. One result may be that these vast changes will be reflected by parity in some mental illness rates. Depression, for example, was considered to be rare in underdeveloped nations and even among the blacks in the United States; but modern studies show that it is a common mental disorder throughout the world. Also, the veneer of homogeneity may be very thin; in the United States differing cultural groups are squeezed into a few blocks of an inner city ghetto. Moreover, certain mental illnesses—previously considered to be exotic—have become visible. These illnesses require description so that they will be recognized by the general physician (most likely a middle-class white American male) who often needs to understand the cultural factors underlying the causes and manifestations of various psychiatric and medical illnesses. Sometimes the ill persons require treatments administered by indigenous or native healers; exorcism and dehexing takes place in modern hospitals in the United States. Thus, one critical task for cultural psychiatry is the propagation of the concept that Western society encompasses a collection of subcultures and that it is necessary both to delineate culture-specific symptoms and syndromes and to discover effective therapies.

Culture's Pathogenic Influence: A culture is considered by Wallace to exert both indirect and direct pathogenic influences on the mental life of those who share it. He cites the mental symptomatology (a schizophrenia-like syndrome) accompanying trypanosomiasis as an example of the indirect pathogenic influence of culture. In Africa a common variety is "sleeping sickness" caused by the trypanosome that is transmitted by the bite of the tsetse fly. Symptoms include tremors, incoordination, mental aberrations, apathy, and coma. Since the fly lives near watering places, cultural factors pertaining to the technology of water supply and use, migration, and adequacy of public health measures influence the incidence of the disease.

Cultural restrictions against the expression of sexual and aggressive impulses, and certain types of child-rearing practices can be seen as evidence of culture's direct pathogenic influence. In addition to the repressing influence of culture on the individual, Wallace lists other ways in which culture can be pathogenic. Primarily, these center on cultural change and culture conflict, and involve role expectations and functions. But they also include factors that predispose to the development of epidemics of mental illness, shared delusions, etc.

A quantitative analysis of culture and stress has been carried out by Spradley and Phillips⁶⁴ in their investigation of culture shock—"the difficulties and frustrations of living in a foreign culture." They developed the Cultural Readjustment Rating Questionnaire (CRRQ), modeled on Holmes and Rahe's Social Readjustment Rating Scale (SRRS), and administered it to three groups: (1) 83 returned Peace Corps volunteers, (2) 34 Chinese students in the United States, and (3) 42 U.S. students who had never lived in a different culture. The perceived stress involved in adjustment to a different culture was measurable. Spradley and Phillips suggest that there are universal stressors (e.g., difficulties with the language spoken, pace of life, general standard of living, privacy, and intimacy) that are associated with adjustment to a different culture.

Acculturation: The problem of acculturation is of growing massive importance. A view of modern technological civilization is spread all over the globe by movies and television; and, with advances in transportation and the relentless search for sources of energy, engineers and other scientists (as well as tourists) probe formerly remote areas.

Alexander Leighton⁶⁵ described the problem of acculturation poignantly in his short essay, "Cosmos in the Gallup City Dump." Early studies of the Navajo Indians showed that those who lived on the "septic fringe" and were bombarded by the rapid forces of acculturation, demonstrated many symptoms of psychiatric disorder. He states:

. . . personalities being formed in such culturally confused and depriving circumstances were heavily exposed to noxious influences—according to any psychodynamic theory from Freud to the commonsense psychiatry of Adolf Meyer.

Subsequent studies of other Indian groups, Eskimos, and the survivors of Hiroshima showed that "order in the environment, or at least the resources to create that order, was essential to the human psyche. Without this it seemed that man quickly becomes alien to himself and prone to the conditions he calls psychiatric disorder." Thus, there is an urgent need for cultural psychiatrists, with their awareness of the toll exacted from individuals as America's subcultural groups are thrown deeper into the melting pot.

Culture Against Man: One of the most damning descriptions of culture's pathogenic influence is presented in Jules Henry's⁶⁶ *Culture*

Against Man. He maintains that America is “a driven culture”—dominated by competitiveness, the need to consume, and a spiraling desire for an ever higher standard of living. He thinks that the deliberate creation of needs by advertising and the “modern commandment, Thou shalt consume!” exert a deleterious influence on psychic life and on impulse controls. Fear, obsession, and isolation have become culturally produced hallmarks of the American character generated by the economic system that stimulates competition in the home and trains children to become consumers and to be fearful and hostile. The cultural system is self-perpetuating, out of control, and affecting several generations adversely. Henry states: “just as the relations of parents to children and those of adolescents to one another are determined by the system, so does the system inescapably define how the aged shall be viewed and treated. It could scarcely be otherwise.”⁶⁷ His grim descriptions of the aged in both private and public nursing homes reveal that ours is a culture of death as well as of life: “Death struts about the house while Life cowers in the corner.” *Culture Against Man* is a frightening, pessimistic study of modern American life.

In the 1930s Julian Steward⁶⁸ proposed a theory of cultural evolution that began with ecologic factors. Environmental conditions produced varying adaptive forms of culture and levels of cultural integration. But, with the development of complex, industrialized societies, “components of the social superstructure rather than ecology seem increasingly to be determinants of further developments.” Thus, stratification within a society, the distribution of economic resources, and related processes are dominant aspects of the culture. And in the 1950s Leslie White⁶⁹ advocated the concept of cultural determinism: “It is, therefore, culture that determines the behavior of man, not man who controls culture.”

These views are important social psychiatric considerations; by implication, the sociocultural system in a complex, technological society is responsible for economic and other inequities that are related to disproportionate frequencies of mental disorder in various social classes. They can be linked with Jules Henry’s thesis that culture is now against man. The rising poverty rates in the last few years—from 11.1% of the population in 1973 to 12.6% in 1975—are further evidence of the problems in maintaining homeostasis in the sociocultural systems.⁷⁰

The “culture of poverty” is described by Oscar Lewis⁷¹ as “both an adaptation and a reaction of the poor to their marginal position in a class-stratified, highly individuated, capitalistic society.” From his comparative study of various societies, particularly in Latin America, Lewis found that the culture of poverty develops when a stratified socioeconomic system is breaking down or being replaced. The salient characteristics of the culture of poverty are (1) at a societal level—lack of integration of the poor into the

larger society; (2) at the community level—poor housing, crowding and minimal organization; (3) at the family level—the absence of childhood or a protected stage in life; and (4) at the level of the individual—feelings of marginality, helplessness, and dependency. All of these levels have been found to be associated with behavioral disturbances. Durkheim⁷² related anomie in the society to suicide. The Leightons and their colleagues⁷³ found that community disintegration was associated with mental disorder. Social indicator analyses link poverty with familial inadequacies and deviancy. And feelings of marginality and helplessness are symptomatic of the futility syndrome observed in depressed persons in the lower socioeconomic strata.

Culture's Therapeutic Influences: Culture also exerts preventive and therapeutic influences. Wallace⁷⁴ lists these as cathartic strategies, the institutional binding of anxiety in compromise formations, social control mechanisms, and more direct provisions for outpatient and hospital care. Examples of cathartic strategies are festivals, holidays, vacations, and, particularly in the United States, sports. Harvey Cox,⁷⁵ in *The Feast of Fools*, deplores the progressive decline of festival and fantasy in our modern world. He believes that the diminishing importance of festivals is leading to a cultural aridity that may be linked with obsessionism. The popularity of sports, however, is increasing to the point that football is becoming a national institution. Konrad Lorenz⁷⁶ points out that contact sports may release aggression, even for the nonparticipant spectators, and thus may be an acceptable, culturally sanctioned mechanism for the expression of destructive hostile drives.

Projective systems, especially religion, utilize ritual and prayer to bind anxiety and relieve guilt. Wallace notes that rapid social and culture change can interfere with established, traditional religious systems and can be "productive of severe anxiety, and either would lead to outbreaks of neurotic symptomatology of kinds destructive of the social order or to the rapid development of new projective systems by religious cults. Such a relationship has been cited as one of the factors responsible for the dual phenomena of delinquency (alcoholism, violence, sexual promiscuity, and so on), and of the innumerable separatist churches among detribalized Africans who are unable to continue the practice of native ritual in labor compounds and urban ghettos."⁷⁷

Social control strategies, as we have seen, are exceedingly complex mechanisms, utilized to maintain social order, that have a bearing on the treatment of the mentally ill. The frequency of a disorder such as amok was reduced by making the presumably mentally ill person legally responsible for his acts of violence. On the other hand, the plea of temporary insanity or of the irresistible impulse has enabled many accused of criminal acts to obtain psychiatric treatment in lieu of penal incarceration. (See Chapter 2 for a discussion of psychiatry's role as a social control mechanism.)

The Cost of Mental Illness

In his discussion of the impact of mental illness on culture, Wallace states that: "The fulcrum of such a causal relation is the 'cost' of illness."⁷⁸ In their monograph, *The Cost of Mental Illness—1974*, Levine and Levine⁷⁹ estimate that the direct costs (professional fees, hospitalization, etc.) of mental illness were \$14.5 billion, the indirect costs (disability, time lost from work, etc.) were \$19.8 billion, and administrative and other costs were \$2.47 billion, totaling \$36.8 billion that could be calculated.

Wallace points out: "The more subtle 'cost,' however, of mental illness, probably resides in the gradual warping of cultures as they undergo changes whose function (not necessarily intention) is to minimize socially disruptive symptomatology."⁸⁰ Such warping of a culture is integral to the question of "The Sick Society," a question that has numerous facets. How many persons must be suffering from mental disorders to label a society as sick? What protective, usually isolating, measures are required to maintain societal health and what do they cost—not only in dollars, but also, in character deformation, a possible loss of altruism, and a decline in humanistic impulses and endeavors? What health-illness balance is necessary to insure sociocultural integration? And finally, the question of a sick society involves the broad historical problem of cultural decadence: Do cultures inevitably proceed through life cycles analogous to those of organisms?

Wallace states that different cultures utilize strategies to minimize the cost of mental illness: "The problem is a universal one and a solution is devised by every culture."⁸¹ About the universality of the problem there is no argument, but whether every culture devises a solution is debatable. A Spenglerian view of the history of the world's cultures would probably include a negative answer about the capabilities of man and his culture for always finding satisfactory solutions.

These are only a few of the serious issues confronting cultural psychiatry—not in the future, but today—in our complex, rapidly changing world where man's cultures are being forced together, hastily, without planning and with an outcome yet to be determined. But it can be hoped that the cultures which have now spread to the four, no longer distant, corners of the earth will survive in peaceful commensalism.

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17

Findings and Issues

At the time of the first volume (1957) an imperative question in the minds of the authors, editors, and most of the readers was how to make life better for more people. The selection of frontiers of knowledge for exploration was guided by this goal.

At present, the guiding question is survival. This is because we realize more clearly that mental health and illness are interwoven with problems of poverty, counterculture trends, and political ideologies, and all of these with the control of population, with ecology, and with biological devastation.

—ALEXANDER H. LEIGHTON¹
1976

The results of the epidemiologic studies that have been reviewed supply a number of reasonably consistent findings that constitute the core of our scientific knowledge in social psychiatry and point to major pathways for future research. In this chapter we will list the salient findings and then discuss some of the issues that they involve.

The prominent findings appear to be:

1. The prevalence of mental illness is inordinately great and seems to have increased since 1950; whether the incidence has increased is an issue that we will discuss.

2. Improvements in facilities and services are associated with increased utilization and the increased utilization, as Esquirol² noted, produces concern about whether there is an apparent or an actual increase in mental illness.

3. Mental disorders can be found universally, although their frequency varies from culture to culture and their manifestations are tinted by a specific culture's customs and beliefs. There is no "mental health utopia."³

4. Mental illnesses, like many other diseases, are selectively, not randomly distributed in the general population. This has been observed since the days of Hippocrates and confirmed epidemiologically by the work of Hinkle and his colleagues.⁴

5. Mental illness is more common in the lower socioeconomic strata in Western society except in Sweden.

6. Large numbers of the mentally ill never receive treatment, a historical fact noted by Andrew Halliday⁵ in Scotland and reported much later in different parts of the Western world by investigators such as Roth and Luton in the United States⁶ and by Strömngren in Denmark.⁷

7. Lower-social-class patients receive different types of therapy from the middle or upper class.⁸

8. Genetic processes are at least partially responsible for some types of mental illnesses, although the environment modifies the expression of genetic defects, and outbreaks of mental epidemics show that mental disorders can be transmitted by contagion.

9. Stressors and adverse life experiences are definitely, but not consistently, related to increased risk for mental illness.

10. The theory of social selection explains in part the unequal distribution of mental illnesses in populations. But the theory is not sufficiently developed to explain associations between mental illness on one hand, and the dynamic sorting and sifting processes that occur within a society, the complexities of migration, and the influence of social change and culture lag on the other. Furthermore, social selection theories must account for the intricacies of population genetics and also consider the age-old questions: To what extent does the community shape the lives of its inhabitants? To what extent do the inhabitants determine the quality of life in the community?

Studies in psychiatric epidemiology have yielded a number of findings that are indisputable, and have led to questions about the nature of mental illness, how to provide treatment, and ultimately how to find preventive measures. Some of the findings have raised issues that are immediate concerns.

Is Mental Illness Increasing?

Studies of the prevalence of mental disorder indicate that the percentage of the population seeking mental health care in Western nations has risen steadily during the last two centuries. In the nineteenth century, data from records, and occasionally from key informants, revealed that less than 1% of the population, and more often about 0.5%, had been hospitalized or otherwise considered to be suffering from mental illness. But by the 1920s and 1930s the percentages reported as mentally ill (again, mainly from rates-under-treatment studies) often were in the 4–6% range. And, in 1950, Strömngren⁷ concluded that the expectancy rates for mental abnormality were about 12% in Western European nations.

Since 1950 the percentages found to have psychiatric disorders have risen markedly. Dohrenwend's 1974⁹ analysis of the results of seven

investigations since 1950, in which the subjects were both interviewed and examined, indicated that from 10.9 to 64.0% of the populations studied had functional psychiatric disorders; *the median was 18%*. The higher percentages reported since World War II have produced concern and controversy about a possible increase in mental illness rates.

Almost all of the studies have reported *prevalence* rates; scientific evidence of a true increase in mental illness rates, however, can be furnished only by studies that show an increased *incidence*. Unfortunately, there are few studies of the incidence of mental disorder from which to draw conclusions about changing rates. Therefore, many epidemiologists do not think that there is scientific proof that the rate is increasing. Dunham¹⁰ states: "The psychoses of the central age groups have not been increasing over the past century." He and others cite Goldhamer and Marshall's¹¹ study of admissions to hospitals in Massachusetts 1840–1940 as evidence for this opinion. The problem of mental illness in our society, however, is not limited to the major psychoses of a particular age group; instead, it includes the diverse types of behavioral disorders seen so often in the young and the high frequency of mental illnesses, especially organic brain syndromes and depression, observed in the elderly. Also, the first-admission rates studied by Goldhamer and Marshall and by Dunham and Medow¹² do not extend beyond 1950, and consequently may have little applicability for assessing a possible recent increase or decrease in rates. Moreover, in view of the sweeping societal changes in the United States since the mid-1960s, it is imperative that we obtain current data before we draw conclusions about changing rates. Finally, we should keep in mind that those first-admission rates included only a portion of the mentally ill before 1950, and that admission rates now have even less utility for estimating prevalence since many of the ill are treated in Community Mental Health Centers.

There is little doubt that the reported *prevalence* of total mental disorder has been increasing during the last few decades. Some possible reasons are (1) longer life expectancy produced by scientific advances and the quality of life, (2) increased treatment facilities, (3) the broadened definition of mental illness, (4) changing fashions in diagnosis, (5) development of the office practice of psychiatry, (6) changing attitudes toward mental illness, and (7) varying methodologies used in prevalence studies. (For example, even before 1950, the percentage reported to be suffering from mental disorders increased with the intensity of the investigation; studies that relied mainly on data from records usually reported smaller percentages of cases than those that also included the untreated.)

To a large extent, the greater prevalence of total mental disorder can be attributed to the lengthened life expectancy resulting from advances in sciences and changes in the quality of life that place an individual at risk for a longer period of time. This is evidenced by the three million elderly

Americans needing mental health care primarily for arteriosclerotic, senile, and other degenerative brain diseases. But also, use of psychotropic medications, group therapies, deinstitutionalization, and the Community Mental Health Movement, have been influential; for example, the schizophrenics' fertility rate has jumped from 70 per 100 females in the population in the 1930s to 130 per 100 in the 1960s and is producing concern about an increased incidence of this disease.¹³ And increased treatment facilities and services, including office practices, have been known to be associated with increased utilization for 200 years. Many epidemiologists tend, however, to emphasize that the broadening of the definition of mental illness and changing fashions in diagnosis are the major factors responsible for the reported increase in prevalence. But the more comprehensive methods used for case-definition, especially before World War II, cannot be dismissed. B. P. Dohrenwend recently reviewed the medians and ranges of percentages of total cases of "functional psychiatric disorder" reported before and after 1950, according to the intensity of the investigation. Before 1950 the median percentage of cases reported by five "indirect contact" studies (mainly data from records and key informants) was 2.3%; since 1950 the median for six studies of the same type was 3.0%. The median percentage for the six studies before 1950 that involved "direct contact" (interviews with subjects) was 3.6%; since 1950, the median for 47 studies utilizing the same methodology was 18.2%. Thus, the median percentage of "total cases of functional psychiatric disorder" has quintupled since 1950. B. P. Dohrenwend¹⁴ states: "The tremendous increase is not a function of the increasing stresses and strains of the times in which we live. Rather, it is a function of the tremendous expansion of psychiatric nomenclature on the basis of experiences with psychiatric screening during World War II."

The higher rates reported in the 1960s in the United States may be attributable to all of these factors. But, in view of the results of Essen-Möller's¹⁵ and Hagnell's¹⁶ excellent studies in Sweden, we should be exceedingly cautious about "explaining away" the data showing an increased prevalence and dismissing the findings as evidence only of changes in nomenclature, treatments, and attitudes. Such explanations may discount the seriousness of the inherent problem. Essen-Möller's intensive investigation showed that 67% of the females and 60% of the males had some type of psychiatric diagnosis. And the only major study of the *incidence* of mental disorder, Hagnell's Lundby study, showed that the estimated cumulative risk for all mental disorders up to the age of 60 was 43% for men and 73% for women.

In Western society, the psychotics, mental retardates, and those with severe neuroses and major personality disorders constitute 12–15% of the population,¹⁵ but about an additional 50% have been judged or diagnosed as having some type of psychiatric disorder in at least three major studies—

Nova Scotia, Manhattan, and Sweden. Moreover, recent mortality data show that, of the 15 leading causes of death in the United States, only the rates for suicide, cancer, and homicide have risen from 1973 to 1975.¹⁷ Dramatic societal changes in the United States—the culture of violence—and the shifting of the age base for suicide and homicide toward younger age groups indicate a possible increase in the frequency of mental disorders such as depression. Thus, we do not know whether the incidence of mental illness is increasing, but the question may have more theoretical import than practical significance in light of the magnitude of the mental illness problem.

Alexander Leighton¹⁸ describes the present situation vividly:

Whichever way one chooses to look upon the psychological and somatic conditions, they are distinctly miserable for those who experience them, and they are not under voluntary control. They are nonrational, counterproductive, and compound the difficulties both for the sufferer and those around him. Of particular importance is that as the prevalence of people with such difficulties increases in the population, there is a corresponding further reduction in the coping ability and competence of the community. When prevalence rates of mental disorder become as high as those shown in various surveys—between 15 and 20 percent, with subgroups running much higher—this is not a trivial matter in the total question of community welfare. Nor, obviously, is it a minor matter for mental health.

Lower Social Status and High Prevalence—Social Causation?

Repeatedly, higher rates of mental disorder have been found to be significantly related to lower-social-class status. Moreover, lower-social-class patients receive different types of treatment (usually somatic therapies or institutionalized care) than do their middle- and upper-class counterparts who are more likely to obtain psychotherapy. Early studies showed that the high rates for mental illness among lower-social-class respondents could be geographically delineated in major metropolitan areas. But, with the changes that have taken place in American cities since World War II, the geographic patterns are not well defined, and the “ecology of mental illness” is now much more a function of socioeconomic than of geographic boundaries.

The association between poverty and high mental illness rates raises the major question: Do poverty and the other conditions of life associated with lower-social-class status cause mental illness, or are intricate, dynamic social selection processes responsible for the accumulation of those predisposed and mentally ill in the lower social strata?

The influence of poverty on mental illness was described poetically by Burrows¹⁹ in 1820: “While the condition of a people is prosperous, and uninterrupted by violent and sudden changes, insanity never exceeds. But when the dispensations of Providence fail of their accustomed bounteous-

ness, or man by trouble is afflicted beyond his nature, or by his own wilfulness o'erleaps the bounds which nature and reason define; then insanity is engendered; and an increased number of lunatics indefinitely swells the catalogue of human calamities."

Recently, Brenner²⁰ tested the hypothesis that "a significant relation exists between economic conditions and admissions to treatment agencies." His comparisons of the index of employment with admissions to state and private mental hospitals in New York between 1914 and 1967 showed that economic downturns were associated with increased rates of hospitalization. Brenner states: "Furthermore, when groups identified by sex, age, economic status, ethnic group, and diagnosis are specifically examined, the inverse relations appear to be far more predictable." Brenner also evaluated relations between the state of the economy and rates of mental illness during 1841 and 1960 by comparing *Ayres' Index of Industrial Production in the United States* with admission rates to Utica State Hospital. Admission rates were "highly inversely correlated with the Index of Industrial Production."²¹

Findings such as those presented by Brenner emphasize the significance of the quality of life in a society, particularly the relationship between economic forces and diagnosed illness. Brenner's study showed that even individuals with reasonable financial resources were affected by recessions—the numbers admitted to private hospitals, as well as to public facilities, increased during periods of economic decline. And Kohn²² maintains that lower social class "is related to schizophrenia primarily because the conditions of life built in to lower social class position are conducive to this disorder." These conditions of life include the hardships of poverty, frequent exposure to stressors, and a lack of resources for coping.

Thus, findings from numerous investigations support the social causation hypothesis. Critics do not dismiss it, although they diminish its significance by including it as only one of many factors in the theory of social selection, along with drift, voluntary segregation, assortative mating, and others, that account for stratification and the accumulation of the mentally ill in the lower social strata. But the burden of proof is on the critics. Convincing evidence for social causation—the influence of poverty on mental illness—is supplied by Hagnell's²³ finding in Lundby, Sweden, that: "The rate of developing a mental disease [in the lowest occupational groupings] does not differ for men or women from the total population . . . [and] that the lower income groups tend to show a lower rate of contracting mental diseases than the average." Hagnell explains that his findings may reflect "the effect of the Swedish social system with its relatively extensive social service." As we saw in Chapter 12, none of the Lundbyites was considered to be poverty-stricken. Thus, in the absence of poverty, no

association was found between lower social status and a higher frequency of mental illness.

The Problem of Untreated Mental Illness

Repeatedly, intensive investigations uncover large numbers of persons with untreated mental illnesses and, also, incipient cases in the community. Specifically, as many as one-half of the psychotics have never received treatment. The many cases brought to light by community studies reveal the inadequacies of our current treatment programs and the necessity to develop more efficient approaches to services. Newer approaches to the delivery of mental health care—deinstitutionalization and the Community Mental Health Movement—appear to be foundering. In the 1840s, Dorothea Dix spearheaded a reform movement to provide moral treatment for the mentally ill, most of whom were either confined in squalid institutions and jails or at large in the slums and ghettos of the community where they were easy prey for exploitation. Humanitarian concerns, optimism about the efficacy of moral treatment, and, just as importantly, economic considerations led to the opening of more than 30 state hospitals where it was believed that patients could be treated with a monetary saving for the states.²⁴ But these institutions became wretched, overcrowded barracks, and, by the 1940s, “snake pits.” A century after Dorothea Dix’s reforms, humanitarian sentiments, the efficacy of the therapeutic community, and faith in the psychotropic drugs sparked the development of the Community Mental Health Movement which was seen by public officials as a method of providing care at lower costs. During the 1960s, the state hospitals were emptied, but only about one-third of the envisioned Community Mental Health Centers were opened because of a shortage of funding. Deinstitutionalization of the mentally ill has become a national disgrace.

In view of the vast prevalence of mental disorders, the “culture of violence,” the fears of a possible increase in incidence, and the Community Mental Health Movement’s lack of effectiveness, only a broadly gauged, systems-oriented, well-funded public health approach can hope to alleviate the current crisis in mental health care. Such an approach requires the extensive development of emergency psychiatry programs, provisions for intensive short-term hospitalization, massive efforts to insure aftercare, a well-linked network of outpatient and partial hospitalization facilities, and, above all, integration of these components and services into a coordinated system.

As early as 1919, Freud²⁵ recognized the limitations of individual psychiatry and the necessity for public health measures.

Against the vast amount of neurotic misery which is in the world, and perhaps need not be, the quantity we can do away with is almost negligible. . . .

One may reasonably expect that at some time or other the conscience of the community will awake and admonish it that the poor man has just as much right to help for his mind as he now has to the surgeon's means of saving his life; and that the neuroses menace the health of a people no less than tuberculosis, and can be left as little as the latter to the feeble handling of individuals.

The Need for Theory That Has Explanatory and Predictive Power

No general theory that explains the findings from psychiatric epidemiology has been developed. The theory of social selection is a set of postulates that attempts to account for the association between high rates of mental illness and low SES. Drift down the social scale following a mental illness episode or voluntary segregation in lodgings and neighborhoods characterized by social isolation, lack of communication with others, and the absence of support systems may be responsible in part for the findings showing that disproportionate percentages of lower SES persons are suffering from mental disorders. But there is no convincing evidence that these are significant processes. Furthermore, the theory of social selection must account for the complexities of migration within one's country and emigration. Generally, migrants to large urban areas have higher rates of mental illness than nonmigrants (see Chapter 10). But moving into the suburbs is often associated with lower-than-expected mental health risks; however, these migrants are usually young, educated, and reasonably affluent individuals—thus they may represent a group already selected as mentally healthy. Since the 1850s, investigators have found that emigration is associated with higher mental illness rates. Whether disproportionate numbers of those predisposed to mental illness emigrate, or whether the problems of acculturation and other difficulties are responsible for their increased mental health risk has not been scientifically determined.

A social selection theory must also consider the influence of genetic processes. Hereditary factors, as demonstrated by genealogical, twin, adoptive, and other types of investigations, significantly increase the risk for schizophrenia, manic-depressive illness, and some other mental disorders. But whether a genetically predisposed individual will develop the disorder is determined by numerous familial and other environmental factors. The expression of genetic defects depends on "many interactions taking place before, at, and after birth."²⁶ Thus, population genetics, involving mainly assortative—not random—mating is one of the fundamental components of social selection theories of mental illness. Individuals tend to intermarry within stratified social groupings, thus influencing the genetic composition of a particular social class.

Neither genetic models that explain the greater risk for a mental disorder in family members, nor sociocultural models that link community

disintegration to an increased frequency of mental illness provide an adequate scientific framework for understanding the etiology of mental illness. They offer partial explanations and raise intriguing questions about how much of the variance in mental health risk is accounted for by the hereditary and how much by the environmental factors involved. To account for the selective, unequal distribution of mental disorders within populations, we are compelled to postulate that certain *X* factors—stressful events—are also predisposing and precipitating causes. The concept of stress has been developed from demonstrable physiological and pathological processes that can be observed in the laboratory. But adapting the model so that it includes intangible and often symbolic events as well as poorly understood psychological processes is a formidable task just being approached.

The fundamental questions—to what extent does the community determine whether its inhabitants will be mentally healthy or ill? and to what extent do the inhabitants determine the quality of life within the community?—have become even more complex. As A. Leighton¹⁸ notes, the current high prevalence rate of mental disorder is bound to exert a deleterious effect on the character of the community. With the progressive decline in the importance of secondary institutions in our highly mobile, technological society, the communities' capabilities of providing meaningful social support systems for individuals and families are limited. They may be reduced further by the presence of the numbers of mentally ill at large so that they cannot supply the key components of community life, identified by Wilson²⁷ as the "*material resources, human interaction, and symbolic expression,*" requisite for a sense of dignity as well as mental health.

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18

Social Psychiatry: Concepts and Models

We emerge from the stream of life as individuals and then sink back into the larger flow of contemporaries and those who follow us in our family, our race, and our nation and whatever we are just a part or a more or less thoughtful representative of. It does not take much thought for us to realize the relativity, the dependencies, and the varying range of the sphere of action and influence of even the greatest of the individual entities in the larger flow of mankind.

—ADOLF MEYER¹

As we have seen, social psychiatry has its roots in early nineteenth-century concerns about the nature of society and the health of its members. Those concerns that included fears that insanity was increasing because of the social turmoil accompanying the American and French revolutions and industrialization, prompted early studies of the number afflicted, inquiries into the causes of mental illness, and demands for humane treatments. However, lacking sufficient conceptual and factual bases, these efforts could not lead to the scientific development of social psychiatry.

By the beginning of the twentieth century, the works of Kraepelin, Freud, and Bleuler were supplying nosologic, psychodynamic, and phenomenologic foundations on which the theory and practice of clinical psychiatry could be constructed. They and the other great psychiatrists of the era were interested in social change and mental illness, but their concerns went relatively unnoticed in an era that had faith in science and optimism about man's future. In America, Adolf Meyer's "Psychobiology" emphasized the importance of habits inculcated in childhood, the role of life events, and the influence of the environment on personality and behavior. Meyer conceptualized mental illness as a maladaptive reaction. Lief² explains: "As mental illness was the undeclared war of man and social forces, situations must be seen in terms of real life, everyday strain and stress; therefore, joint efforts must be undertaken in all the realms, economic, social, political." Meyer's theories, his interest in mental hygiene, and his

influence on numerous colleagues and students fostered a social psychiatric orientation in American psychiatry.

Since 1950 we have witnessed a resurgence of interest in social psychiatry. The twentieth century's catastrophic events, World War I, the Great Depression, and World War II, shook the traditional social, political, and economic framework of Western society. And, since 1945, the proliferation of technology, the displacement and migration of millions of people, and the population boom have imposed a shift of orientation away from the individual and toward groups and societies. Social psychiatry has achieved status, along with biological psychiatry and psychoanalysis, as one of psychiatry's three major fields. As medicine's most humanistically oriented specialty, and in view of the quantity and complexity of man's dilemmas, psychiatry needs to encompass social psychiatry as one of its fundamental orientations.

Rabkin³ thinks that we have moved historically into an era in which outer space (where a person interacts with others), not inner space (the individual psyche), is the dominant consideration in our conceptualizations of mental and behavioral processes. He has developed a metapsychological model for social psychiatry.⁴ Basic personality disturbances can be produced by and reflected in distorted relationships with others, particularly at the critical stages in the life cycle. Also, throughout life the quality and quantity of individual and group interactions at many interconnected points in the social network and the influence of sociocultural processes—visualized metaphorically as the spaces in a fishnet—can be either conducive to the development of mental disorders or preventive or ameliorative. Thus, an individual exists in relationship to others and is subject to the dynamics of the various social systems that surround him. Disordered behavior is the result of numerous physical and sociocultural influences and it almost always involves more than one person. Rabkin states: "It is difficult to conceive of psychopathological behavior occurring in a social vacuum and impossible to label it as such in the absence of a fellow man who assigns the diagnosis."⁵

Rabkin's social psychiatric concepts are derived in part from C. S. Peirce's⁶ doctrine of "concrete fallibilism": "much of what we take for granted actually consists of judgments or inferences and is thus open to error." This doctrine holds that no knowledge, perception, or behavior is innate or intuitive; instead, knowledge, particularly as it relates to perceptions and behaviors, is learned in such a way that there may or may not be consensual agreement about it. Rabkin explains: Adherents of the organic school consider a hallucination to be the result of cerebral impairment; for psychoanalysts, the hallucination is analogous to a dream; but, the doctrine of "concrete fallibilism" considers it to be the inability to correct an error. He states: "in relatively rare instances such individuals are deemed

mentally ill as a function of two things: their social undesirability and the community's intolerance of error by its failure to encourage repair."⁷

Rabkin's views have a certain degree of face validity and are stimulating to those interested in social psychiatry. He emphasizes that only a systems approach offers an understanding of individual, interpersonal, group and far-reaching social processes and advocates the development of family and group therapies. He calls for replacing the notion of insight with that of candor. *Candor* is defined as "honesty or accurate observation about what men do or are disposed to do to each other." Such an approach may result in the social psychiatrist's opening "a Pandora's box of all the inhuman things" that people do, but Rabkin believes that it will also promote behavioral changes and lead to healthy patterns of communication.⁸

Undoubtedly, mental illness is an interpersonal disturbance, but acceptance of this basic tenet does not preclude a recognition of the influence of genetic processes or diminish the value of psychoanalytic concepts of the mental mechanisms and of psychodynamics. "In essence," as Jules Masserman⁹ has said, "all psychiatry is social psychiatry." And to realize its therapeutic potential, social psychiatry must utilize the range of therapeutic modalities—psychotropic medications, individual therapy, and a variety of social therapies, as well as family and group therapies.

The resurgence of social psychiatry is one aspect of the mid-twentieth century's sociopolitical and scientific revolutions. In the *Structure of Scientific Revolutions*, Kuhn defines a revolution as a "change involving a certain sort of reconstruction of group commitments."¹⁰ An increasing awareness of groups, of the fundamental importance of their identities and processes, and of how an individual relates to them has, in almost revolutionary fashion, relegated individualism to a topic of limited social scientific interest. Fifty years ago social scientists, such as G. H. Mead, Charles Cooley, Ralph Linton, Talcott Parsons, and others, were formulating social psychological theories of the development of "the self" and role theories to explain how the individual interacted with the social system. Incongruities between "the self," role expectations, and role performance could be manifested as mental or behavioral dysfunctions which would be labeled as either mental illness or deviance. George Herbert Mead¹¹ stated: "Social psychology studies the activity or behavior of the individual as it lies within the social process; the behavior of an individual can be understood only in terms of the behavior of the whole social group of which he is a member, since his individual acts are involved in larger, social acts which go beyond himself and which implicate the other members of that group."

Talcott Parsons'¹² *General Theory of Action* was developed as a series of overarching constructs embracing society and personality. These con-

structs are critical elements of role theory which Parsons thinks is American sociology's greatest contribution to the field. He emphasizes that the personality and society are systems and that role participation is at the boundary, linking the individual personality and society. Interaction, even between two persons, is an elementary social system: "One particular crucial aspect of the articulation of personality with the social system is the organized system of interaction between ego and 'alter' based upon role expectations."¹³ The degree of integration or disintegration in a society is manifested at the points of articulation of the personality and social systems. But role, rather than personality, is the social unit. Role expectations and role participation, therefore, are subject to strain when there are either sufficient dislocations in the social systems or disturbances within the personality. Parsons' concepts have implications for health and illness. He states that "the primary criteria for mental illness must be defined with reference to the social role-performance of the individual. . . . It is as an incapacity to meet the expectations of social roles, that mental illness becomes a problem in social relationships."¹⁴

Parsons' theory, as a whole, obviously cannot be tested. But more finite segments of it, such as role expectations and performances are measurable. To some extent, they enter into our accepted concepts of functioning and impairment; systematic research in this area has a potential for increasing our understanding of interpersonal processes and behaviors and of gaining information about the influence of social and culture change on mental health and illness, since such change usually involves role change.

Some of the ramifications of this twentieth-century social revolution—the ascending importance of groups and their processes and the consequent decline in individualism—were described by Riesman and his colleagues¹⁵ in *The Lonely Crowd*. About 25 years ago they noted the disappearance of the "inner-directed" character type who relied upon his internalized and highly individualized guides for behavior. The emerging "other-directed" character type, whose identity and behaviors are determined by the group's norms and mores, is one "whose conformity is insured by [his] tendency to be sensitized to the expectations and preferences of others." Thus, we are confronted with the task of acquiring greater knowledge about groups, especially the ways in which their structure and dynamics influence behavior. Consequently, the group and its ideologies and values are a determinant of the individual's personality type, his perception of conflicts, and responses to them.

The dominant importance of the group, the emergence of the "other-directed" character type, and cognizance of the immensity of societal change in recent decades provided a background for a Consciousness, Personality, and Behavior model for social psychiatry.

Consciousness, Personality, and Behavior

Our thoughts about a model for social psychiatry concern the individual's consciousness, personality, and behavior, each of which must be viewed as an individual-group process. These vary with changing beliefs and standards both as the individual proceeds through life's stages and as group norms and ideologies shift.

Consciousness is the sense of self in relation to one's membership in social groups with their traditions, standards, and ideologies. It can be conceptualized as a function of an individual's simultaneous identifications with numerous social groups. His birth into a family with its social class, racial, and other statuses determines many group memberships, whether the individual identifies with them, or, as a reaction formation, attempts to escape them and find others. Aptitudes, education, opportunities, and chance will decide additional group allegiances. And one's moment in history also will influence the options available. Moreover, this is an age of emphasis on group identities, as evidenced by arm bands and "isms." Thus, the individual is related to society through his group memberships; all of these memberships are shared with other persons, but the processing of these group identities—his consciousness—provides for some distinctiveness.

William James¹⁶ asserted that consciousness is a process, not a condition—not a state of the organism. The mind contains a spectrum of possibilities; the action upon these—comparison, selection, and suppression—is the process of consciousness. James stated: "The mind, in short, works on the data it receives very much as a sculptor works on his block of stone."¹⁷ Thus, beginning in infancy and childhood, the individual's consciousness is shaped by family, peers, larger groups, and the wider society. In our modern world, the young child participates in group activities, for example, in Head Start programs, day-care centers, or nursery schools. He is exposed to the manifold stimuli emanating from the mass media that influence his developing awareness at an early age and during the succeeding stages in the life cycle. But these multiple group identities potentiate tensions and conflicts both within the individual's consciousness and in society as varying groups prescribe modes of behavior and strive for status.

The biosocial needs of the organism are expressed through the personality, which Sullivan¹⁸ defined as the "relatively enduring pattern of recurrent interpersonal situations which characterize a human life." Thus, personality expresses the consciousness as interactions with others. The selection of others and the situations in which the interactions occur, situations involving expression-frustration, acceptance-rejection, and satisfaction-dissatisfaction utilize energy and appear as patterns. The personal-

ity, therefore, can be viewed as the way consciousness—as derived from group memberships and life experiences—is manifested. And personality can add another component of distinctiveness to the individual.

Behaviors are the manifestations of consciousness and the more active expressions of the personality, subject to the personality's selective and processing functions. Personality and, in particular, behavior are subject to group regulations and judgments. Mental health-illness is an evaluated condition; behaviors are judged according to group norms. When behaviors are deemed aberrant, the label "mental illness" is applied and the individual is selected for treatment. And when behaviors violate certain group proscriptions, other steps are taken; the person may be institutionalized as a deviant or a criminal. The borderline between mental illness and deviance has become a murky no-man's land in the United States, particularly in the last 25 years. This is illustrated dramatically by changing views on homosexuality and by changing attitudes which have resulted in alcoholism being given status as an illness.

The consciousness, personality, and behavior model is schematized in Fig. 16.

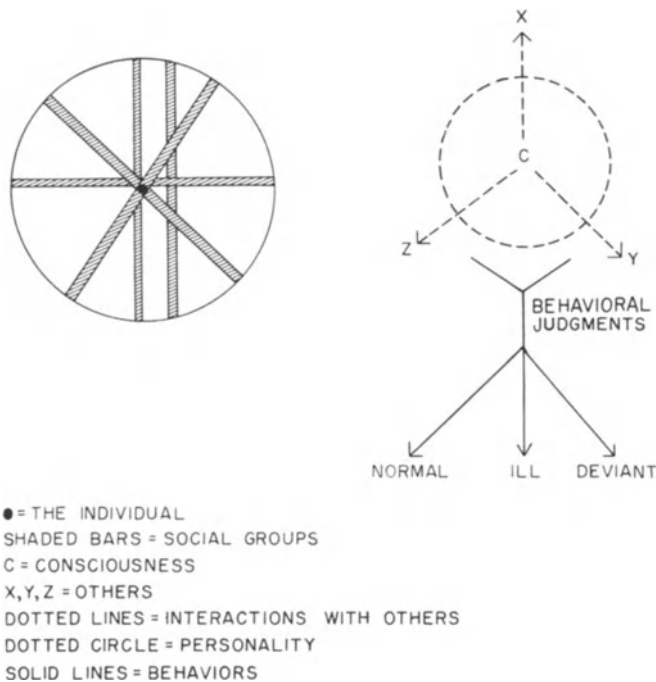


Figure 16. Consciousness, personality, and behavior. ● The individual; Shaded bars, social groups; C, consciousness; X, Y, Z, others; dotted lines, interactions with others; dotted circle, personality; solid lines, behaviors.

The circle on the left represents the wider society containing a number of groups depicted by the shaded bars. An individual, represented by the dot, can be located in relation to membership in the overlapping and intersecting groups that mold consciousness. Consciousness, or C, is expressed through patterns of interactions with others (X, Y, Z)—the personality (dotted circle). The expressions of the personality—the actions or behaviors—are judged by others and then categorized as normal, ill, or deviant.

From this social psychiatric viewpoint, dysfunctions, resulting in illness, occur at one or more of the levels: (1) consciousness, (2) personality, or (3) behavior. At the level of consciousness, dysfunctions may be attributable to:

1. *Incapacity for identification* with any social group, resulting from genetic defects, disease processes early in life, or prolonged deprivation. Incapacity for identification is illustrated in its most severe form by the mental retardate who is biologically limited in his ability to function as a member of a social group other than as a dependent in a protective family or institution. In addition to congenital defects, encephalopathies in early life or severe social deprivation can produce the same result. Social deprivation includes neglect, isolation imposed by parents or physical illness, lack of social stimulation, and a paucity of opportunities for obtaining group membership. Schizophrenic processes also can be conceptualized as the result of relative incapacities for identification produced by genetic, familial, stressful, or other unidentified factors. The incapacities of identification are evidenced by the schizoid person's introversion and, when the illness becomes manifest, by an inability to share the realities held by others in the sociocultural environment.

2. *Deficiencies in identification*, resulting from difficulties in patterning and socialization which preclude the incorporation of any group's ideals and values. The sociopath epitomizes the individual who superficially possesses the capability to identify with others, but is incapable of incorporating the values of the wider social group into his consciousness. As a result, consciousness is dominated by self-interest, and the deficiencies of identification with others are evidenced by demands for immediate gratification, insensitivity to the needs of others, and the inability to comprehend the implications of one's behavior for society as a whole or, often, even for self.

3. *Clashing within the consciousness* resulting from identifications with differing groups whose standards and values are incompatible. Such identifications produce clashing within the consciousness that can appear as psychiatric disorder. This dual existence is illustrated by the dilemma of the "marginal man," described by Park and Stonequist.^{19, 20} Early descriptions of the marginal man, typically a Mulatto or a Eurasian, but also a migrant or others suspended between two cultures, emphasized that he was

caught in the midst of culture conflict. Stonequist observed that "double consciousness" results from identification with two clashing cultural positions. And Park noted that the psychological effects of this predicament were "spiritual instability, intensified self-consciousness, restlessness, and malaise."

Earlier, Marx²¹ had described double consciousness resulting from identification with two social classes whose traditions and values differed. Notable examples were the servants in England who identified with the middle and upper classes to the extent that they sought little opportunity for developing personal identities or obtaining satisfactions other than vicariously. Others were the millions of poor families who lived in wretched, unhealthful, squalid conditions, while accepting the upper classes' convictions that they were inferior; Marx believed that their apathy in the midst of distress was attributable to their adoption of those opinions.

In modern America, the effects of "clashing within the consciousness" were vividly demonstrated by the plight of blacks leading lives of economic deprivation and racial segregation. Kardiner and Ovesey²² pointed out the frequency of psychosomatic disorders in blacks whose struggles for achievement and middle-class status involved denial of self, emotional restraint, and identification with the dominant white society.

In 1971 M. Schwab²³ compared the Health Opinion Survey (HOS) responses of 56 black respondents in a small, semiisolated Florida rural community with those of 39 blacks from Stirling County who also lived in such satellite areas. On most of the 19 items, significantly more of the Stirling County than the Florida group reported symptomatic responses. A comparative anthropologic analysis of the communities revealed that the Florida community supplied sustaining social support systems that reinforced a member's sense of identity as a black whose allegiances and activities were tied to his life in the black community even though he might work 40 hours per week in the nearby, largely white city. Thus, the stress of marginality experienced by the blacks in that southern community was diminished, and their active community life helped maintain a requisite level of self-esteem that served as a countervailing force to lessen the possibility of clashing consciousness.

4. *Multiple identifications* resulting from distorted or excessive experiences with role models and groups in early life. Multiple, fractional identifications can be hypothesized as conducive to the development of the hysterical personality and related disorders, such as conversion and dissociation, which appear when an individual is stressed sufficiently. The numerous fragmented identifications preclude the development of an adequate sense of identity and become manifest as clinical disturbances—e.g., amnesias, somnambulism, and even the more dramatically publicized "split personality."

At the personality level, affective and cognitive interchanges emerge in interpersonal situations that produce gratification or frustration. Feelings and thoughts are expressed and defended against, depending upon either acceptance or rejection, which in turn influences the patterning of future interactions. At this level, illness resulting from persistent rejection can lead to withdrawal, isolation, and, eventually, failure to obtain consensual validation and an inability to distinguish between fantasy and reality. Continued relationships with others who are ill may be conducive to illness by association, such as *folie à deux* or, less dramatically, the paranoid person's acting out another's suspicions and hostilities. Disorders at the personality level can become apparent also when, for example, an individual enters the drug scene. There he finds his dependency needs gratified psychologically and physically by his experiences with drugs and the reinforcing influences of the drug culture.

The third level, the behavioral, is the more obvious manifestation of the three and can be considered in more discrete terms since behaviors are judged as normal, ill, or deviant. The judging and consequent labeling process is itself subject to shifting social and cultural processes so that, as a consequence, an individual exhibiting a certain type of behavior might be judged healthy in one culture but ill in another.

The labeling process, however, involves more than the judgments applied to an individual's behavior. It is perceived by the individual and incorporated into his consciousness. This can lead to a sense of being ill, inferior, or different, often in some pejorative way. And, in turn, the flawing of the self-concept results in personality disturbances, for example, avoidance or delinquency that appears as abnormal behaviors and solidifies the labeling. Labeling, furthermore, is a social control mechanism. As we saw in Chapter 7, there is evidence that society seemingly needs to exclude a certain segment of its population, those labeled undesirable, for a variety of reasons. Witchcraft and, subsequently, institutionalization were means employed by Western society during the last few centuries to maintain social order. But in the last 15 years, during which time the state hospitals have been emptied (not earlier when they contained more than 500,000 patients), the civil rights of the mentally ill have become a prominent issue, and psychiatry, as a profession, is charged with functioning as a social control mechanism.

A conceptual basis for social psychiatry that embodies consciousness, personality, and behavior as processes that are interpersonally and socially determined provides a frame into which many of the components of the scope of social psychiatry can be fitted. But it does not point directly to many research opportunities for testing hypotheses about associations between the social environment and mental health or illness.

The major tasks confronting social psychiatry are to enlarge its

scientific base and to develop a general theory because, as Kuhn states in *The Structure of Scientific Revolutions*:

No natural history can be interpreted in the absence of at least some implicit body of intertwined theoretical and methodological belief that permits selection, evaluation, and criticism. If that body of belief is not already implicit in the collection of facts—in which case more than “mere facts” are at hand—it must be externally supplied, perhaps by a current metaphysic, by another science, or by personal and historical accident. No wonder, then, that in the early stages of the development of any science different men confronting the same range of phenomena, but not usually all the same particular phenomena, describe and interpret them in different ways.²⁴

In this early stage of the scientific development of social psychiatry, investigators are searching for a theory that relates sociocultural processes to the cause, manifestations, and treatment of mental illness. In the absence of a comprehensive theory, but we hope as precursors of its development, the investigators are working with models that provide a frame of reference for their research, enable them to interpret results coherently and meaningfully, and enhance our understanding of the individual and the group in relation to each other. All models attempting to relate individual and group processes, however, are limited inherently because the individual and the group processes are different levels of abstraction. As early as 1950 Robinson²⁵ showed that “an ecological correlation is almost certainly not equal to its corresponding individual correlation,” and warned against making inferences about human behavior from aggregate group data.

As we have seen, the Stirling County and the Midtown Manhattan studies tested hypotheses derived from conceptual and analytical frames of reference that postulated mechanisms to explain how sociocultural processes are associated with mental illness.

Community Integration-Disintegration: As described in Chapter 11, this frame of reference for the Stirling County Study²⁶ is based on two fundamental assumptions: (1) that an individual’s essential psychical condition is dependent upon the personality’s striving for security, love, recognition, and belonging to a social group;* and (2) that a disturbance of the essential psychical condition occurs when there is a basic defect in the personality, when it is striving toward a defective object, or, when sociocultural factors interfere with striving. Mental disorder may be the end result of the disturbance, but is not necessarily an inevitable outcome since an individual may be able to employ defensive mechanisms, compensations, or coping processes successfully. The sociocultural environment influences this outcome either by interfering with striving (lacking objects and values) or, conversely, by abetting it (providing objects, alternatives, or satisfactions). Communities were ranked for degree of integration-

* See page 192 for the ten “Essential Striving Sentiments.”

disintegration according to indices that reflected the extent to which they interfered with or fostered an individual's "ability to satisfy his essential striving sentiments." The results showed that psychiatric disorder was more frequent in disintegrated than in integrated communities.

This is a thoughtful, appealing model and has been tested. But, to obtain enhanced validity, it needs to be tested a number of times in differing areas since it is based on universalistic views of man, culture, and society. The major criticism of the integration-disintegration frame of reference is that perhaps it is tautological, that people determine the character of the community in which they live and that integrated communities, therefore, contain fewer mentally ill persons than disintegrated ones.

Stress-Strain: The stress-strain model used in the Midtown Manhattan Study²⁷ is the only other major one that has been tested systematically. As described in Chapter 10, the investigators postulated that stress (noxious or potentially noxious factors such as adversity) leads to personality deformation—strain. The quality and intensity of the reaction to stress is determined in part by the availability and utility of mediating factors and coping resources. Low socioeconomic status can be stressful, whereas higher SES can serve as a buffer to stress or supply options that palliate its effect. The number of stressful events sustained by an individual was directly related to the presence and degree of impairment. This work helped supply the foundation for the development of Life Events scales that are now used widely but stress always involves some degree of subjectivity and is difficult to quantify. Moreover, only prospective studies can determine whether many supposedly stressful life events are either precipitants of mental illness or manifestations of existing mental disorder.²⁸ (See Chapter 14.)

These major studies are at the frontier of social psychiatry but, as we have seen, most of its domain consists as yet of unexplored territory. Advances depend on enlarging the scientific base by a series of investigations designed to evaluate relationships between discrete social processes on one hand and, on the other, the cause, course, and treatment of mental illness. Psychiatric epidemiology is in an embryonic but developing stage. Further cross-sectional surveys can have only limited value; their main utility is for the assessment of need for mental health care, planning for health services, and evaluation of need-utilization-outcome and cost effectiveness. One carefully developed investigation of a scientifically selected sample of families and household aggregates that includes genetic, medical, social scientific and psychiatric evaluations of all the subjects annually for 10 to 20 years might well be the most important study of the century in this field.

To complement the revolutionary social changes that have occurred 1950–1975 and are evidenced in part by the importance of groups and the resurgence of social psychiatry, a social scientific revolution is also

needed. For Kuhn,²⁹ such a revolution involves the replacement of one paradigm by another. He defines paradigms as “universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners.” A paradigm has two fundamental characteristics. (1) It attracts “an enduring group of adherents away from competing modes of scientific activity.” And (2) it is “sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve.”³⁰

Social psychiatry and particularly its applied form—community psychiatry—were termed “mental health’s third revolution” by Hobbs²⁸ in 1964.* Psychoanalytic theory provided a paradigm during the first part of this century. But rapid societal changes have increased the visibility of previously submerged, oppressed groups and their needs for mental health care, exposed the limited applicability of the psychoanalytic paradigm, and required an orientation which includes group and community processes as well as individual and family interactions.

Social psychiatry is in a preparadigmatic stage, characterized by a variety of opinions about the field’s fundamental assumptions, definitions, and proper avenues of inquiry. In this stage, we have only a collection of approaches and models, with little consensus about their validity and applicability. A paradigm is needed; it is more than a model or pattern—its current validity is so widely accepted at a given time that replication is not necessary. A paradigm supplies the essential core around which the field can develop further along the extensions of its theoretical lines. And a paradigm loses its status when it is supplanted by another that appears to have greater explanatory power and opens new avenues for problem-solving.

Such a scientific revolution, moreover, must take into account the influences of an accelerated rate of social change. Heightened interest in social psychiatry since World War II springs from the increasing awareness of the significance of groups and of the rapidity of social change—interrelated processes. With the astounding technological developments, a vast increase in population, dramatic advances in transportation and communications, and the resulting shrinkage of our planet, even in the United States “rugged individualism” is passé, replaced by the growing conviction that individual survival is dependent upon group survival.

Whether the accelerated rate of social change is associated with changes in mental illness rates is a broad, complex question that defies our research capabilities. But as we have seen, rapid social change incites fears of increased mental illness. Odum³² has pointed out that folkways, the more enduring habits and customs developed through time, are casualties of the accelerated rate of social change. They have been supplanted by technicways, the shifting, evanescent habits and customs that appear as

* Pinel’s unchaining of the insane in 1793 and Freud’s development of psychoanalysis were considered psychiatric revolutions by Zilboorg.³¹

behavioral responses to the immediate demands of a technological society. And in the absence of traditional standards, these behaviors are difficult to evaluate in terms of mental health and illness. Although we do not know whether social change is associated with an increase in mental illness, certain groups seem to be affected differentially by it.

Thomas and Bergen³³ offer a social psychiatric model which relates social change to psychological malfunctioning. Social processes define roles and role expectations; personality organization at several levels mediates between role expectations and the needs of the self. Furthermore, social and cultural change affect the way an individual expresses the needs of the self, for example, either by approving increased opportunities for such expression or by limiting expressive modes. Either way, change requires some degree of personality reorganization. From this point of view then, the impaired, elderly black's compliance and acquiescence represent, for example, limited self-expression, in accord with the caste system's restrictions on his aggression. Clinically, his apathy may be confused with depression. In contrast, many young adults strive for full self-expression, exceeding boundaries established by the dominant society. As value systems clash during this period of rapid social change, we can see that the identity crises of the young are probably linked to the increased availability of expressive modes and the blurring of boundaries.

Invention and technology, the ingredients of social change and culture lag, yield demonstrable benefits for some. We think, from our research, that those who had low rates of impairment are those who are in phase with the rate of change at this time. But those with high rates of impairment, not receiving the benefits of change because they are unprepared for it, left in the wake of it, or disoriented by it, are out of phase with the rate of change.³⁴ Ogburn's theory of culture lag set forth such views. He maintained that continuing social maladaptation occurs during periods of rapid social change, when material culture (invention and, particularly, technology) proceeds at a faster rate of change than the adaptive culture (beliefs, role prescriptions, and institutions).³⁵

Despite the fluctuating interest in social psychiatry during the last 200 years, the field has endured and its future is promising. To quote Aristotle, "Man is by nature a social animal. . . . Society is something in nature that precedes the individual. Anyone who either cannot lead the common life or is so self-sufficient as not to need to, and therefore does not partake of society, is either a beast or he is a god."³⁶

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