

Understanding Population Trends and Processes 5

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# Understanding Family Change and Variation

Toward a Theory of Conjunctural Action

 Springer

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# Understanding Population Trends and Processes

## Volume 5

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In western Europe and other developed parts of the world, there are some very significant demographic processes taking place at the individual, household, community and national scales including the ageing of the population, the delay in childbearing, the rise in childlessness, the increase in divorce, the fall in marriage rates, the increase in cohabitation, the increase in mixed marriages, the change in household structures, the rise in step-parenting and the appearance of new streams of migration taking place both within and between countries. The relationships between demographic change, international migration, labour and housing market dynamics, care provision and intergenerational attitudes are complex to understand and yet it is vital to quantify the trends and to understand the processes. Similarly, it is critical to appreciate what the policy consequences are for the trends and processes that have become apparent. This series has its roots in understanding and analysing these trends and processes.

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# Understanding Family Change and Variation

Toward a Theory of Conjunctural Action

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# Introduction

Tolstoy's *Anna Karenina* begins with the observation that "All happy families are alike. Each unhappy family is unhappy in its own way." Regarding the unhappy, Tolstoy is likely right. But happy families differ, too. Indeed, the diversity of family form and function is striking, particularly when viewed in a broad comparative or historical context. Is childbearing limited to marriage? What about sex? What rights and obligations does marriage confer? Who is permitted to marry whom? Who does, empirically, marry whom? How many children do women bear, when, and with whom? Is remarriage practiced after the death of a spouse? What about divorce? The answers to these questions differ widely across contexts, and have significant social and demographic consequences. Understanding family change and variation is critical both for making sense of the broad social and cultural patterns of late modernity and for explaining demographic rates. Studies of the family are therefore of central importance throughout the social sciences.

The importance of family change and variation has not gone unnoticed; to the contrary, it is the focus of a large and vibrant body of research. So vibrant, in fact, that one component—social demography—has become an independent subfield. The wealth of data on American families, ease of their analysis with new developments in computer hardware and software, and wealth of important questions needing answers have together given rise to a plethora of studies on the correlates of single motherhood, divorce, and age at marriage, to name only a few. This vibrant literature in social demography has become increasingly separate from the rest of the social sciences, even on similar topics. Patterns of citation, loci of publication, even the division of labor in graduate training programs all show a separation between social demography and social theory. It has come to a point where a senior professor can say that he studied demography because it meant that he could earn a PhD in Sociology without ever reading Weber, Marx, or Durkheim . . . and no one laughs.

This increasing isolation of social demography is the primary impetus for this book. All the authors view ourselves as social demographers, either full-time or hyphenated with other titles, and we want our work and our discipline to be in dialogue with the broad issues in contemporary social science. We are concerned that in its partial isolation, social demography has missed some critical opportunities for richer, better, more compelling explanations of social phenomena—opportunities



derived from recent findings or standard approaches in other social, human, and in some cases even biological, sciences. We therefore orient this book to other social demographers specifically, and to scholars interested in family change and difference more broadly. We draw our examples from social demography, and hope to show that the model we develop will be useful for it. However, we do not see the usefulness of our theoretical framework as bounded by substantive domain; the approach advanced here is very general and should be a useful guide to any study of social change or difference.

The book has a long and unusual history. Morgan and Bachrach began formally collaborating in 2004 as part of a large, multisite and multidisciplinary NICHD contract to review and critique existing research, theory, and practice in the social demography of the family.<sup>1</sup> Part of the charge of that contract was to think boldly about potential “next steps”—how could studies of the family be done *really differently* in order to advance knowledge? Responsible for the topic of fertility, Morgan and Bachrach took this part of the charge especially seriously, and recruited Johnson-Hanks and Kohler to join the project of rethinking fertility studies from the ground up. (In one meeting, the phrase “tip the tables over” was used repeatedly.) We began with a shared dissatisfaction with current theoretical models and a sense that minor alterations to existing approaches were insufficient. We did not begin with a predetermined theoretical framework but rather with the realization that existing theories of family change and difference have both empirical and conceptual limitations. In particular, we were struck by the many empirical and conceptual advances in sociology, anthropology, psychology, and biology over the past two decades, and by how little these advances have transformed social demography. Concretely, we sought to incorporate research from psychology (on the pervasiveness and importance of schemas and on identity), from neuro- and cognitive science (on brain function and its implications for action), from behavioral economics (on the importance of heuristics and biases), and from sociology and anthropology (on the interplay of material and ideational aspects of structure, and on the mutual constitution of selves and contexts).

Although we are concerned about the theoretical state of much contemporary demography of the family, there is also a lot of wonderful, creative work being done—Fisher (2006), Swidler and Watkins (2007), Watkins and Swidler (2009), or Weinreb (2006), for example. And we are by no means the only ones to call for a rethinking of the theoretical basis of contemporary social demography. In recent years a number of demographers have voiced concerns about the limitations of current scholarly paradigms and have made efforts to address them (see for example Hobcraft, 2006). Although these works are quite diverse, each parallels our work here in drawing attention to one or more of three central themes: developing demographic science that is consilient with the knowledge from evolutionary biology and cognitive science; integrating cultural theory into demographic research; or arguing for alternatives to dominant “positivist” perspectives and methods in the field.

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<sup>1</sup>The work of this broader group is described elsewhere (Morgan et al., 2008; Seltzer et al., 2005).

These works reflect a widely shared sense that productive change in the methods and approaches of demographic research is both possible and desirable.

Massey's *Strangers in a Strange Land* (2005) and his Presidential Address to the American Sociological Association (Massey, 2002) parallel our efforts to understand social life and social action while accounting for "human nature". While Massey's substantive focus is on inequality and urban life (and we focus on family), both his efforts and ours are firmly anchored to key biological mechanisms developed over the course of human evolution, especially the evolution of the brain. In particular, the challenges that brain modularity poses for rational choice models of human behavior are front and center in Massey's approach: "we . . . should ground our theories and models in established knowledge about how people think and interact using both their emotional and rational brains" (2002, p. 25). In this book, we try to do exactly that.

In another recent work, *Culture, Biology, and Anthropological Demography*, Eric Roth (2004) argues that population studies would benefit from a synthesis of knowledge from two branches of anthropology—human evolutionary ecology and cultural anthropology. Roth argues that demographic strategies—decision rules about how we adapt demographic behaviors to particular contexts or circumstances—are deeply influenced by both biology and culture. Indeed, because demographic strategies are so central to mechanisms of natural selection and reproductive success, they provide an essential link between biology and culture. Two other volumes that integrate knowledge of human evolution and biology with demographic research were published by the National Research Council. *Between Zeus and the Salmon* (Wachter & Finch, 1997) integrated biological, evolutionary and demographic knowledge about human longevity. *Offspring* (Wachter & Bulatao, 2003) undertook a similar integration focusing on human fertility behavior. We echo their emphasis on thinking about demography through a biosocial lens.

*Anthropological Demography: Toward a New Synthesis* was an effort to revitalize the sporadic and often ambivalent relationship between demography and anthropology. In arguing for the value of such a move, volume editors, David Kertzer and Tom Fricke (1997) argue persuasively that anthropology offers demography not only an extension of methods but also richer theory. They suggest that demography, while embracing the importance of context, has had limited success in extending notions of context to the ideational realm. Rather, consideration of cultural variables has generally been limited to factors such as attitudes and beliefs measured at the individual level. They stress the potential for embracing anthropological theories that engage culture at both micro- and macro- levels and concepts of culture as variable and dynamic. The model we develop here traces its roots to anthropologists as well as sociologists and historians who have contributed to the development of new theories of culture; it is no surprise that our argument is highly supportive of the agenda laid out in the Kertzer and Fricke volume.

The call for greater attention to cultural phenomena is also implicit in Arland Thornton's (2005) *Reading History Sideways: The Fallacy and Enduring Impact of the Developmental Paradigm on Family Life*. Although Thornton carefully acknowledges the many contributions and continuing value of quantitative approaches in

demography, he argues that demographic theory and methods were powerfully shaped by what we would label a powerful cultural *schema* of development or “progress.” This developmental paradigm, in which all societies were seen as moving towards the achievement of Western economic, family, and institutional structures, shaped scholarship on global family patterns and, through the dissemination of scholars’ ideas, schemas of the family held in many parts of the world. Thornton is one of many demographers (e.g., Lesthaeghe & Surkyn, 1988; Cleland & Wilson, 1987) who have called for greater attention to ideational factors in demographic analysis of family change. His analysis of how schemas about the “modern” family—developmental idealism—were spread through structural forces such as the power of intellectual elites and Western aid programs is highly consistent with the mechanisms for family change that we suggest.

The concern with scholarly “mindsets” highlighted in Thornton’s work emerges even more strongly in *Demography in the Age of the Postmodern*, by Riley and McCarthy (2003). Riley and McCarthy push back against the search for universals such as causes of fertility decline—they question “totalizing theories, the universal, and the possibility of a ‘God’s eye’ view of the world; (they lean) toward difference and localized knowledge” (2003, p. 13). The focus that we develop here on mutually constructed schema and materials is related to this approach. An appreciation for the multiple ways in which given events can be interpreted and the importance of those interpretations for subsequent events is a key feature of postmodern perspectives, and one that we share.

We share many concerns with critical or postmodern scholars, including concerns with the narrowness of dominant models of explanation and causality and the need for questioning assumptions about the meaning of categories and concepts. However, we doubt that our proffering of a consilient scientific theory would be considered compatible with a postmodern rejection of “universalistic” theories. While we agree that universal theories in the social sciences (for example, of the demographic transition) have proven unhelpful if not harmful, we also believe that universal theories may be helpful in understanding mechanisms of human cognition and their relation to environmental experience. We believe it is important for social science to acknowledge and respond to well-established bodies of knowledge about these mechanisms, while maintaining a healthy skepticism for potential problems in the underlying science. Ironically, it is precisely these cognitive mechanisms that provide the foundation in biological science for explaining the different perspectives and frames that different groups and actors bring to a situation, and the ways in which these are incorporated into structure. In short, this “universalist” theory of cognition implies the need to examine the situatedness of action.

We differ from a post-modern perspective as described by Riley and McCarthy in two additional ways. One is in our unwillingness to relinquish the idea that objectivity, while unobtainable by any human being in a pure sense, is an important scientific ideal. The problem here may be the use of different definitions. Objectivity can be used to characterize a human’s *judgment* (in which case it is arguably an oxymoron)

or a *proposition* the truth value of which is “mind-independent.” The goal of science, in our view, is to develop the latter despite the impossibility of pure objectivity on a part of any human being: to be “somewhat less wrong over time”. Another way in which we adhere to traditional scientific values is in our reluctance to espouse a stance that deliberately entangles scholarship with social activism. We view this stance as narrowing the universe of frames through which social life can be observed and understood. While we believe strongly that scientists should be aware of and transparent regarding the frames they bring to research, we do not assume that all scientists bring, or should bring, an activist stance.

In *Categories and Contexts: Anthropological and Historical Studies in Critical Demography*, editors Simon Szreter, Hania Sholkamy, and A. Dharmalingam (2004) argue that the context and funding of demographic research has led to narrowness in its theory and methods. The authors contributing to the volume challenge demographers to recognize that the categories used by demographers may not correspond to meaningful concepts and categories in the populations they study. They also argue, as do we, that meanings are powerfully influenced by cultural context and history (see for example p. 230), and that that these contexts need careful investigation prior to the formulation of quantitative models. They argue that an interdisciplinary synthesis drawing in the contributions of anthropology and history is necessary to move demographic science forward.

Thinking with and against these and other authors of our time, we argue that some of the key questions for future family research will require a fresh look at theory. For example, can the near-replacement levels of fertility currently seen in the United States be sustained? Existing theories suggest various ways of approaching an answer. Microeconomic theory suggests a focus on the costs and benefits of children. Others would point to processes of ideational change that will universally lead to greater secularism, individualism, and lower fertility. Still others would point to global economic processes that reduce the certainty of employment contracts. We sought a theoretical frame that could integrate these various processes and relate them to one another. Another key question that may require new theoretical models concerns the effect of advances in new reproductive technologies on fertility patterns, a question that requires attention not only to the costs and benefits of specific timing patterns, but also to the impact of new technologies on the meanings of—and perceived control over—reproduction. A third key question is whether non-marital childbearing will continue to rise as a proportion of U.S. births, and whether it will remain as sharply differentiated by educational status as it is now. Here again, a complete and coherent approach will require attention to both ideational and economic change, as well as to institutions, habitual practices, and networks of interaction across the socioeconomic spectrum.

Thinking about these empirical questions and others like them, we realized that a new theoretical framework would have to do an awful lot. In particular, we identified features as crucial for any potential approach to family change and variation.

1. *Consilience*<sup>2</sup>: Theory must be consistent with what we know from other disciplines, including social history, psychology, and biology, and incorporate recent scientific progress in understanding human behaviors at various levels, ranging from the social embeddedness of human behaviors to the workings of the brain.
2. *Multiple scales*: It must be able to explain both aggregate patterns of human behavior and changes in these patterns. To do this, it must address both the causes of individual behaviors and the mechanisms that link individual behaviors to aggregate patterns and vice versa, over time. It must be able to account for rapid period change as well as less dramatic and more gradual cohort change. It must also be able to account for dramatic and persistent difference across groups.
3. *Complex causal webs*: the new approach should move us away from seeking to isolate pure effects of specific variables on outcomes and toward understanding how outcomes emerge from the confluence of circumstances. Existing approaches in the quantitative social sciences focus on trying to identify exogenous effects, however socially insignificant, at the cost of sometimes ignoring big, real—but endogenous—empirical phenomena. We need to think about selection processes not only as confounders to be controlled, but also as part of the reality to be explained.
4. *Agency and structure*: The key causal mechanisms must acknowledge the role of both individual agency (the ability of individuals to make decisions and act to change the environment) and the structured environment (in influencing individual actions and decisions). Attention to agency implies accounting for the understandings of persons involved as well as the processes that produce action; attention to the environment implies attention to both the material and ideational elements in the environment that can suggest, constrain, or facilitate action.

It became clear that we would need to become effective foragers, exploring the social, behavioral and to some degree biological sciences for theories and concepts that might be usefully integrated into a model of family change and variation. We would then integrate them, assess the compatibility of various insights, and translate this theory into language accessible to broad social science and scientific audiences.

We focused our efforts first on explanations for macro-level change, that is, change in cultural, social, and economic institutions that we take to be the primary drivers of contemporary family change and variation. Of course, there are many such approaches, varying not only in how they account for change, but also in how clear and accessible they are to scholars outside their immediate conversation. We were quickly attracted to the “duality of structure” argument of William Sewell (1992, 2005). Sewell rejects the confusing distinction between culture (or ideology) and structure (or economic base), arguing that they are mutually determined and constructed. In this way, Sewell’s approach is broadly consistent not only with

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<sup>2</sup>*Consilience*, or a “jumping together” of knowledge from different domains, is a term popularized by Wilson (1998, p. 8).

Giddens (1979, 1984), whom Sewell cites extensively, but also Bourdieu (1977, 1998), and indeed much of contemporary social theory. We were excited by the way that Sewell conceptualizes micro–macro linkages, providing a framework for broad social structure to influence individual action, but also for individual action to influence structure. This micro-to-macro influence is usually small and incremental, but in his work on the French Revolution, Sewell also suggests how specific historical events that can transform structure very quickly (1996). We also saw that Sewell’s approach embraces the path dependence of social structure, viewing existing beliefs, norms, and organizations as part of the initial conditions that give rise to new institutions and to the transformation of existing ones. Finally, Sewell’s work explicitly treats individual agency as dependent on social structures, such as institutions, and identifies mechanisms through which individual action can shape those structures in turn. For all of these reasons, we were optimistic that we could use Sewell’s duality of structure model as a basis for integrating concepts necessary for a new approach to social demography.

Next, we began to map Sewell’s conceptualization of macro-level change onto common social science conceptualizations of individuals’ life courses. An individual’s life-course events parallel macro-historical events in many ways: they have histories that matter, and can also alter the structure of the life course (i.e., transform identity and affect subsequent behavior). This innovation produced a parsimonious theory of structure and change operative at both the micro and macro level that could account for path-dependent macro structure and change and for the tendency for structural change—particularly in relation to fertility and union formation—to be relatively sudden and pervasive. In this way, our work parallels research in social psychology that tries to map micro and macro theory in a similar way (Ridgeway, 2006).

Then we sought to relate Sewell’s theory of structure to knowledge generated within social demography and in more distant fields, particularly related to the brain sciences. Here we needed a lot of help: there was too much to read, and the competencies of the different authors, which had seemed so diverse at the start, now seemed too similar. We settled on a strategy of small conferences that would bring together experts from relevant disciplines. We would ask these experts to tell us about their fields and models and then to react to the approach that we were constructing. We attempted to translate their insights into a single set of concepts and ask them if our translations were consistent with their discipline-specific understandings, and if not, to help us improve.

Our first attempt to assess our theory of family change and variation took place in June 2004. We convened a small conference at NICHD that brought together experts on “culture,” “structure,” and “identity.”<sup>3</sup> We read the invitees’ work and discussed its implications for our evolving conceptualizations. Although not all participants preferred our terms and categories to their own, we were heartened by the degree to

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<sup>3</sup>See the EFC Final Report (Morgan et al., 2008, appendix 3) for details on this and subsequent meetings, including attendees, summaries, and highlights of the proceedings and discussions.

which this wide range of scholars agreed with our basic framework. These interactions were important for refining our conceptualizations. These conceptualizations and an initial statement of the theory were described in the draft paper that became the focus for subsequent discussions with collaborators on the NIH contract, with other colleagues, and at two additional conferences. In its latest iteration, this paper is presented here as [Chapter 1](#).

We next organized a conference on “Religion and Family” at UCLA in February 2006. Our rationale for this conference was that some of the interesting and large differences in the contemporary American family fall along lines of religion and religiosity. We invited scholars doing empirical work on religion and family. We read their work and assessed the extent to which their findings and explanations were consistent with our emerging conceptualizations. We also asked these scholars to read the then-current version of our theoretical statement and to assess its potential usefulness to them. William Sewell also attended this conference and commented on our attempts to adapt his conceptualizations to understand family change and variation.

A third conference was held at Northwestern University in June 2006 on the topic of “Consilience and Family Change.” The goal of this conference was to assess our understanding of cognitive processes represented in our emerging conceptualization. In short, we argue that “schemas” as used in our development of Sewell’s approach (representing virtual structure or “mental maps”) are highly consistent with emerging understandings of cognitive processes in linguistics, developmental psychology, and elsewhere. This conference sharpened our understandings of these concepts and provided broad confidence that, while simplified, our approach accurately captures important aspects of cognitive functioning. Particularly in light of the co-evolution of human cognition and culture, our conceptualizations are consistent with an evolutionary perspective on the brain.

We call our modified and expanded version of Sewell’s dual structure model the *Theory of Conjunctural Action* (TCA). We do not claim that it is new. Indeed, part of why we are confident of its value is that it draws from such large, and well-established findings in other fields. However, we think that it *is* new to social demography, and new in the ways in which we have integrated work from a range of social, human, and—to a limited degree—biological sciences. By “theory,” we mean an organized system of knowledge that applies in a variety of circumstances to explain some set of phenomena. In this view, theories are conceptual frameworks through which empirical observations are organized and interpreted (see Calhoun, 2002, pp. 480–482 for a discussion; a related perspective is found in Burch, 2003). We realize that this use of “theory” is not shared across all disciplines, and the reader should feel comfortable substituting another term, such as *framework*, *model*, or *paradigm*, if she prefers. Social science theories, in the sense we intend here, seek to capture the fundamental processes of human behaviors and social interactions as tersely as possible; good theories therefore simplify from reality to draw attention to specific elements or processes, necessarily ignoring others. We hope that the approach outlined in this book will be useful, drawing attention to important aspects of demographically relevant behavior, offering a way to think



about macro and micro in conjunction, and enhancing new and productive cross-disciplinary approaches. In the spirit of Gorski's (2004) "constructive realism", we seek ultimately to develop a model of family variation and change that not only gets the extensional outputs right, but also corresponds—in simplified fashion—to the biological, psychological, social and cultural processes at work in the world.

In the first substantive chapter of this book, we describe the theory of conjunctural action in some detail. [Chapter 2](#), called "Consilience" traces some of the connections between the TCA and research in sociology, anthropology, psychology, behavioral economics, cognitive science, and elsewhere. It is a very long chapter, but necessarily so. Social demography has been handicapped in recent years by its isolation. Marriage and reproduction are topics of profound importance across disciplines. How people respond to social and economic change cannot be completely different in demographic than in non-demographic domains. We need to be in conversation with scholars across the human sciences. [Chapter 3](#) outlines how the TCA fits with models of fertility decline and contemporary low fertility. [Chapter 4](#) uses the TCA to explore and explain contemporary differences in reproductive behavior by class in the US. [Chapter 5](#) uses the TCA to talk about the emergence of a social field of infertility in the US over the last four decades. Finally, in the conclusion, we discuss the implications of our approach for subsequent theory and research and the necessary next steps to make our approach broadly useful to social scientists.

Our work is not complete, and we do not have answers about how some aspects of the theory should be operationalized in survey-based social demographic research. Although we have focused on thinking across paradigms and disciplines, some potential connections and conflicts between relevant literatures remain undeveloped. This book captures our work to date. The project is enormous, and of course unfinished. We offer this new model for understanding family change and variation as a potentially useful alternative to current conceptualizations, an incitement to debate, and as a stepping-stone for additional work.



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# Chapter 1

## The Theory of Conjunctural Action

This chapter describes the theory of conjunctural action (TCA). In developing it, we draw primarily on the “duality of structure” model developed by Sewell (1992, 2005) in his account of historical change, and on the related models of society and history in Bourdieu (1977, 1998) and Giddens (1979, 1984).<sup>1</sup> However, we also begin to draw on a broad array of recent work in human development and cognition that demonstrates the modularity of mind, its predisposition to particular modes of perception and interpretation, and the importance of environmental inputs for shaping the development of brain, mind, and self (Quinn, Hugenberg, & Bodenhausen, 2004). Just as societies have histories and structures that matter, so too do individuals. One critical argument in our extension and refinement of Sewell’s work concerns its simultaneous application at the individual and social levels. We argue that the social and psychological literatures support one another in a variety of ways that have not thus far received enough attention: human societies, the product of human agency, are structured through processes that emerge from the social capabilities and propensities of human organisms. These points of psychosocial consilience are explored more fully in the next chapter.

The theory of conjunctural action begins with the premise that the vital events that constitute the object of social demography should be treated as the products of social action, and that understanding social action requires a conception of social structures. The term “social structures” has accumulated multiple meanings in various social science traditions, ranging from the set of relations among different classes, race or gender groups to the tangible array of laws, policies, and institutions that shape social action. The term “structure” is used to refer to durable forms of organization, patterns of behavior, or systems of social relations (see for example Fortes, 1970; Levi-Strauss, 1969; Parsons, 1949; Radcliffe-Brown, 1932; Sahlins, 2000; Turner, 1969). In some branches of anthropology, “structure” has been used as a synonym or substitute for “culture”, particularly in recent decades as scholars have moved away from a view of culture as monolithic and all-encompassing. In all

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<sup>1</sup>This is not to imply that these approaches are interchangeable—indeed, there are some very dramatic differences between them—only to say that we draw here on their similarities, which are also considerable.

of these different uses, however, structure is something powerful: structure “structures” social action, that is, shapes and directs it, leading to debate on the relative importance of structure and agency in driving human action (Emirbayer & Mische, 1998; Giddens, 1979; Moore, 1975; Sewell, 2005).

In our work, we adopt Sewell’s minimalist, yet broad, definition of structure as “the recurrent patterning of social life.” This definition has many advantages. It makes no implicit claim about what structure *does*, or the extent of its power to do what it does. It identifies a broad range of social phenomena as structures, including capitalism, language, the ways in which people greet each other, and the patterning in the routines of a children’s playgroup. The simplicity of the definition confers analytic power—it opens the door to the analysis of how structures differ and why, how, and under what circumstances they affect human action in more or less profound ways. It captures the essence of what we want to understand: how patterns of family behaviors change in a social group.

With Sewell, we view societies as “sites of a multitude of overlapping and interlocking cultural structures” (2005, p. 209). By “multitude”, we mean many—at least hundreds, probably thousands of structures make up a society. These structures vary in scale, from dating and family dinners to systems of social services and economic exchange. They are “overlapping and interlocking” not only with respect to the domains of action to which they refer, but also in relation to the individuals and groups that populate societies. Some structures permeate an entire society while others are constrained to a limited domain of action or a local social group. Frequently, multiple—even contradictory—structures pertain to the same domain. This is particularly true of culturally dense domains such as family and fertility, where legal, religious, emotive, and economic logics overlay one another.

A “dual” understanding of structure (Sewell, 1992) draws attention to the fact that family forms and other structures are shaped and sustained through the interplay of schematic and material elements. Schematic elements—such as ideas, values, and “habits of mind”—and material elements—such as objects and performances—propel, support, constrain, and transform each other in tangible ways over time. The theory of conjunctural action accounts for family change through the interaction of structure (schematic and material) and contingency, through an analysis of conjunctures, or historically specific turning points, whereby structures are reconfigured or reconfirmed. TCA thus situates an understanding of family change and variation in a basic conceptualization of how human action occurs in, and changes, the world.

## Schemas

The schematic components of structure are the largely underdetermined, and often taken-for-granted, ways of perceiving and acting through which we make sense of the world and motivate our actions. Using Sewell’s vocabulary, we call them “schemas.” Like “structure”, the term “schema” is used variably throughout the

social sciences.<sup>2</sup> We use it as an umbrella term for a range of related—although distinct—cultural and cognitive phenomena, including, for example, categorization, social scripts, and mental representations. Schemas are—definitionally—schematic, that is, underspecified and therefore potentially enactable in a variety of ways in a range of contexts; they are generally learned by induction through recurrent exposure rather than through direct instruction; they carry with them expectations or evaluations pertaining to the object or situation beyond what is directly perceptible at the time. They are therefore a critical part of the background knowledge necessary to get by.

Geertz has argued that culture provides models “of and for life” (1973). We call these models schemas, and emphasize their partiality, overlap, and occasional contradiction. The move from “culture” to “cultural schemas” draws attention to both the complexity and contradiction of the schematic components of structure and recent findings in developmental psychology, cognitive- and neuroscience concerning the centrality of construal to perception and cognition (see for example Griffin & Ross, 1991; Kunda, Sinclair, & Griffin, 1997; Prasada, Ferenz, & Haskell, 2002). Construal is the process by which things or situations are apprehended as examples of particular types—that is, through schemas—rather than *de novo* in all their particularity. Humans almost invariably experience and respond to the world through schemas broadly defined, not by choice, but because of a design feature of the human brain. Schemas are an unavoidable component of ordinary human perception and interpretation. In addition to guiding construal, schemas provide mental maps for action—Geertz’s models *for* life (this dual use of culture is elegantly explored in Vaisey, 2009). Schemas provide the means through which we know how to greet a friend or a teacher, pay for our purchases at the store, or prepare for the arrival of a baby. They are how we make sense of contraceptives and the idea of family limitation, as described by Watkins (2000).

Schemas are virtual. This implies that we do not observe them directly, any more than we observe hopes, beliefs, expectations, or decision-making directly. Like these other mental states, however, we can observe the effects of schemas. Because their effects are sometimes quite powerful, we can identify and measure schemas indirectly. Indeed, demographers have done so for years, using for example Likert scales to measure levels of agreement with statements like “the man should be the head of the household,” or asking whether abortion would be an acceptable choice in cases of rape or incest. To answer these questions, our respondents rely on schemas about what is moral, legitimate, and socially appropriate. Using these kinds of questions—and other methods that we discuss in the conclusion—we can therefore measure schemas inferentially.

Multiple schemas—some partially contradictory, others mutually reinforcing—can circulate in a given social field (see Garro, 2000). Partnering and parenthood and other similarly salient domains of life are particularly culturally dense. For example,

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<sup>2</sup>For example, in psychology or pragmatics it is generally used in a narrower sense, applying only to what we call relatively shallow, non-visceral schemas (see Medin & Smith, 1984).

middle-class American schemas about parenting reverberate through the design of suburban housing developments, patterns of consumption, and political discourse around public education. This example also shows how culturally dense domains necessarily entail a large number of crossovers with other life-domains. That is, almost inevitably, schemas regarding reproduction often also entail or respond to schemas about marriage, women's work, social class, or the legitimate role of the state. For this reason, a focus on cultural schemas and the duality of structure implies models of reproduction that go beyond the traditional demographic focus on child numbers, treating child timing, child characteristics, and the integration of reproduction and other life domains as central to an understanding of reproductive behavior.

### *A Typology of Schemas*

Although what we are calling “schemas” includes a wide diversity of things that psychologists often distinguish, all schemas share a couple of characteristics. They are generally learned by habituated exposure, rather than explicit rule. They are abstract, implying only what is a “typical” enactment of a schema, but not the many ways in which its performance or actualization could vary. Schemas simplify perception, memory, and decision-making (see e.g., Mellers, Schwartz, & Roitov, 1999). But perhaps most importantly, schemas are *schematic*—that is to say, underspecified and therefore applicable across a range of real-life situations, and transposable from one kind of situation to another. Thus, schemas for interpersonal relations in a business hierarchy can be transposed onto the family, making Dad into a domestic CEO as in some Evangelical families (Bartkowski, 2001). Schemas of fairness and the market can be transposed onto adoption or surrogacy, creating uncomfortable debates about birth-mother compensation and “baby selling.” In both cases, the schema imports a richness of information or expectations beyond what is perceptible in a given situation or domain. Thus, construing a check to a surrogate mother as “payment” implies a very different set of rights, obligations and social relations than does construing it as “financial support” during pregnancy. Construing a pre-implantation blastula as a “baby” invokes very different emotions and expectations than does the clinical term.

Beyond the shared characteristics of typification, cognitive simplification, and underspecification, schemas vary on a number of dimensions. We focus on three aspects of difference: schemas may be shallow or deep; they may be categorical, procedural or evaluative; and they may be more or less visceral.

### **Deep Versus Shallow Schemas**

We call schemas “deep” when they are very general and underlie a number of other schemas. Shallow schemas, by contrast, refer to only to a specific context or limited set of cases. The deepest schemas may be universal ones, such as interpreting

temporally associated events as causes and effects. However, even among cultural schemas, some are more foundational than others. In the United States, we would argue that a set of deep schemas relates individual effort, simplification by analysis, and self-fulfillment. Confronted with a wide range of circumstances, many Americans devise responses that draw on one or more of these deep schemas. We break problems into their constituent parts, work hard to solve them, and aspire to self-fulfillment as a consequence. The specific form that this takes depends on whether we are talking about hard work as an element of successful marriage (see Quinn, 1996), suitable forms of childrearing, or the grounds of citizenship and legitimate claims on the state. That is, deep schemas may have nested within them shallow ones, more specific and limited in their application. Shallow schemas notably include interaction scripts analyzed by Goffman (1967), but also any schema that applies only to a narrow set of contexts.

### **Categorical, Procedural, and Evaluative Schemas**

Schemas may be of—at least—three kinds. We call results of processes of typification “categorical” schemas: What is a house? What is a marriage? Categorical schemas define types, often through paradigmatic examples. “Procedural” schemas define how to do things; they provide “characteristic repertoires,” from which actors may develop lines of action (Swidler, 1986). For example, “how to complete a service transaction” is a shallow procedural schema, but procedural schemas may also be deeper. Procedural schemas show importantly that no one chooses from a boundless range of alternative possible futures. Identities, futures, family structures and so forth come in bundles, which can be slow to change. When our female graduate students want to know how they can write a dissertation, get tenure, stay married, and also have children, they are looking for a procedural schema. “Evaluative” schemas refer to what is good, right, honorable, and desirable, or conversely to what is shameful, disreputable, or disagreeable. Of course, many schemas are jointly categorical and evaluative (The “good mother,” or the “problem child”), procedural and evaluative (a “stellar thesis defense”), or even all three.

### **More and Less Visceral Schemas**

The last axis of variation in the analysis of schemas is their viscosity, by which we mean the degree to which the schema is corporeally experienced. Some schemas are only cognitive—they are mental dispositions or attitudes—whereas others also entail a set of physical feelings. The aura of closeness that ritual bedtime reading imbues in a father and child; the stomach-churning discomfort of witnessing a child being harshly punished; the solemn hopefulness of wedding vows: the schemas that shape these experiences are intensely physical, and the physicality matters for how the schemas are deployed in action.



## *Where Do Schemas Come from and How Do They Change?*

People learn cultural schemas primarily through social interactions in which the schemas are invoked by the participants (Carley, 1986; Levine & Resnick, 1993). Schemas are virtual, but they become perceptible—and therefore learnable—when they are applied to a specific conjuncture, or instantiated in some material form. Because any instantiation of a schema is by definition specific and not abstract, schemas are learned piecemeal and over time, and differences in understanding are common. Think about learning a shallow categorical schema, like “what is a bird?” You will engage in a series of social interactions where someone will deploy the category “bird” to make sense of the world around them. First you might be at the zoo, watching penguins and emus. You may have a pet cockatoo at home, or have turkey for dinner. Big Bird may be your favorite character on Sesame Street. Humans are predisposed to infer types out of this kind of imperfect information, and out of these disparate examples you will develop a mental schema for “bird” (see Waxman & Lidz, 2006). Almost certainly, you will make mistakes as you learn—perhaps calling bats “birds” or failing to include penguins. But social interaction will normalize your schema to the culturally prevailing one, as people laugh at you, fail to understand you, or outright correct you.

Notice that the process of schema acquisition and alteration is largely social, and therefore observable (albeit perhaps best by ethnographers). Although schemas are virtual, they are shaped through interaction with the material world: often through conversation (see Rutenberg & Watkins, 1997 for a nice discussion). The social nature of schema learning becomes even more important in deeper schemas, including of course most family-relevant schemas. Our interaction partners rely on the schematic components of structure in navigating specific social conjunctures, normalizing the schemas as they go. Each successful reiteration of a cultural schema legitimates and strengthens it, making the schema appear non-ideological and non-controversial.<sup>3</sup> Uncontested schemas, hegemonic ones, are experienced as normal and transparent modes of being or acting—not as options, but as “just the ways things are.”

There are at least four ways that social actors invoke and thereby share schemas. Explicit cultural production—such as films, television shows, paintings, fairy-tales, or urban legends—draws on cultural schemas to make the stories and characters recognizable to their audience. Monstrous villains and reluctant heroes, innocent schoolgirls and charismatic Casanovas: cultural representations draw on a largely familiar cast of characters and a limited number of scripts. The other three primary ways that schemas are deployed refer to immediate contexts of social action: social actors employ schemas to determine how to act, to account for their actions, and to evaluate the actions of others. In all three cases, the use of schemas is usually less of a *choice* than a process of apprehending “what is this an example of?” or “what is

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<sup>3</sup>This basic idea is found throughout social theory, in work as disparate as Bourdieu (1977), Butler (1999), and Foucault (1979).

going on here?" We read the world through schemas, usually without reflection or attention: the *strategic* deployment of schemas is thus more the exception than the rule.

Any instantiation of schemas simultaneously draws on and risks transforming a collective repertoire of categories. If a politician talks about her respect for "family values," we understand her through a shared frame of reference of what that category means in contemporary American political discourse. And if she further argues that because of her "family values," she is pushing a bill that will expand federal funding for foster care and adoption, then she has—perhaps—slightly transformed the category. Schematic components of structures can only be changed if they are first successfully deployed; that is, if our interlocutors accept our instantiation of the schemas as legitimate. Each iteration of a schema, including those represented in films and books, carries the potential both for reinforcing existing structures and for changing them.

In part because of the processes through which schemas are transmitted and shared, members of a single social group usually have access to a variety of schemas that could relate to any given interaction, and some of these schemas are mutually contradictory. As Americans, we have access to multiple schemas about the family, including on the one hand the idea that parents should allow their children to develop as individuals and on the other the idea that parents are responsible for supervising children's behavior, guiding their choices, and shaping their characters (On schemas of American parenting, see Harkness et al., 1992). We know both schemas that emphasize the value of hard work and commitment to a cause, and schemas that valorize personal freedom and self-actualization above all else. Most of the time, we cohabit easily with these contradictions, unaware or unconcerned that our preferences cannot be strictly ordered. Specific interactions may elicit one or the other schema more strongly, but we are rarely forced to attend to them and choose between them. However, whenever something of significance is at stake—and many of the issues in family change and variation can become "significant" in this sense—contradictions between schemas must be dealt with somehow, if only on a temporary, ad hoc basis, and if only without a satisfactory resolution. For example, the cultural schemas that one should only marry for love and only bear children within marriage produce an important conflict to the 40-year old woman who has not found a man she loves and wants to have children, especially in the context of alternatives to unassisted biological reproduction, such as sperm banks, donor eggs, and surrogacy. However, they are not always easily resolved. The tension between schemas of women as mothers devoting themselves selflessly to their children and schemas of women as entitled to pursue self-actualizing, economically rational careers (Hays, 1996; Blair-Loy, 2003) remains, even after decades of social change accommodating the large-scale entry of women into the labor force.

We have said that schemas are generally unequally distributed: some schemas are shared by all or nearly all members of a population, whereas others are highly circumscribed. This distribution is of course not random. Given the processes through which social actors learn the schematic components of structure, those who interact with each other, view or read the same cultural representations, and respect the same authorities will often have similar schemas. But because individual social

actors in highly differentiated societies participate in a variety of social groups—as dentists, Parent Teacher Association (PTA) members, Newsweek subscribers, and Republican party organizers, for example—they regularly interact with people who share only some of the same schemas, or who are mutually aware of each other’s schemas although they reject them.

## Materials

The material constituents of structure are the objects, performances, and organizations that sediment schemas in the perceptible world. Any object, physical form, or reserve of value that has an existence outside of the schemas it manifests we call a “material”. Materials instantiate schemas in the world of objects; they instill and reinforce them on the minds and bodies of social actors. Although materials are not necessarily physical objects, they invariably do have some perceptible, sharable form, be it tangible, visual, or auditory. They include not only things like a piece of land or a stock certificate, but also legislation, news stories, or a musical performance; not only schools, but also curricula and graduation ceremonies; not only a wedding ring, but also the spoken vow to remain faithful to one’s spouse. Like schemas, materials can be mobilized to advance a line of social action; unlike schemas, they are incarnated in some directly shareable form.<sup>4</sup> Thus, the notion that babies are best born to married couples is a schema, whereas a radio campaign to advocate that schema, a welfare policy that provides disincentives for non-marital childbearing, and a social club that mobilizes public opinion to prevent non-marital pregnancy are all materials.

Sewell calls the material components of structure “resources” (see Sewell, 2005, pp. 132, 214). However, as we circulated previous drafts of this chapter, the term “resources” confused readers not familiar with Sewell’s work, because of the ordinary-language usage of the term. The concept “material” is quite different from the ordinary-language use of the word “resource,” because materials need not be physical objects, and physical objects need not be materials. By calling this analytically important category “materials,” we retain the term “resources” to refer to the more canonical set of capital, labor, and land, regardless of whether and how they are schematically embedded. Structures are social products, and so are their schematic and material elements. Materials therefore exclude objects or physical phenomena that do not instantiate schemas. Thus, natural resources, cell division, the climate, or your present longitude are all potentially useful physical phenomena; however, they only become materials when they are interpolated into schematic structure.

Let us clarify that common language is messy, but the analytic categories to which it refers are nonetheless clear. In some cases, the same terms may be used

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<sup>4</sup>Recall that schemas may be visceral, even highly so. The visceral reactions accompanying schemas that are “tagged” with strong emotions are material, and often even socially perceptible (although not always consciously so; Gladwell, 2005).

to refer to materials and structures, or schemas and materials. For example, when used to refer to the patterned ways in which young people are given the knowledge needed to function in society, “education” refers to a structure, the emergent product of a system of institutions, curricula, and socially shared beliefs about how, when, and what children should learn. However, when used to refer to the specific information, cognitive abilities, and degrees that an individual acquires as a result of passing through an educational system, education is a material. It is observable in the person’s speech, writing, and job performance and documented in diplomas and curricula vitae. It is deployable in the service of getting a job, reading a newspaper, or negotiating complex medical advice regarding infertility. Similarly, “information”—a fundamentally important factor in understanding decisions about family behaviors—is schematic when it refers to an underspecified representation stored in the brain, but material when it refers to something that is accessible in perceptible form. For example, I may hold a schema that contraception can rightly be used to avoid pregnancy. By contrast, the schedule for the family planning clinic is a material, even though I may commit it to memory.

Differentiating the schematic and material aspects of complex social phenomena like education and family planning is important because they relate to the unfolding of individual action and social change in different ways. Educational structures may change if the material endowments they confer no longer match socially shared values or expectations; think about, for example, Title IX requirements for women’s sports or special programs for pregnant teens. Material endowments conferred by education may have different implications for behavior depending on local educational structures. For example, in some educational structures, getting a high school diploma signals the arrival of adulthood and a green light for family building; within other structures, it is simply a milestone on a much longer path. By focusing attention on the interplay of schemas and materials in the constitution of structure, TCA gives explicit attention to each of these elements and to the conceptually distinctive, although closely interdependent, ways in which they influence social action.

### *A Typology of Materials*

Like schemas, materials are not all of the same kind. Although they have many potential axes of variation, we focus here on four that are particularly salient. Material structures can vary in their complexity, in their replicability, in whether they are alienable, and in whether they are limited.

#### **Complexity**

By definition, all materials must have the potential to instantiate at least one schema in at least one perceptible form. Some material structures, however, draw on many schemas and have complex material forms. Thus a bookmark is a very simple material, and a neo-natal intensive care ward is a complex one. Many of the materials

relevant to partnering and parenthood are complex: job skills and Internet employment services, family leave and flextime policies, or social behaviors that reward marriage and childbearing.

### **Replicability**

Some materials are unique and others replicable. Unique materials include the house that I live in, yesterday's press conference, or the birth control pill I took this morning. But materials also include things that can be reproduced multiple times and in different forms. For example, the text of *Paradise Lost* is itself a material, accessible to perception through oral readings, published books, photocopies, or Internet pages. A news story is also a material, taking form in television broadcasts, newspapers, and the Internet.

### **Ownership and Alienability**

Some materials can be clearly attributed to a specific bearer or owner, whether individual or corporate, whereas others are held loosely by a population or society, or not "held" at all. Thus I alone am the bearer of my property and my person, whereas we as a civilization hold the Ten Commandments and *Madame Bovary*. The US Public Health Service owns clinics and their supplies; the Population Council holds the patent on RU486; and we as a society possess "motherhood and apple pie". Some non-replicable materials, such as a performance of a play, may be held only fleetingly.

Some materials cannot be removed from their original bearer and assigned to another, whether by theft, sale, barter, trade or gift. This can apply both to materials held by individuals and to collective materials: at the individual level, skills, accreditation, beauty, and intelligence are all inalienable, while for a society, legislation and public rituals are inalienable. Inalienable materials may be lost, but their loss cannot take the form of their being transferred to another; some inalienable materials may be shared (for example, they may be taught), but sharing them does not diminish the stock held by the original bearer.

### **Limitation**

This axis of variation concerns whether the quantity of the material available is reduced by its use, even if the supplies of the resource are vast. Thus, natural resources are limited, as are time or commodities. In other cases, using a material either has no effect on its future availability, or even increases it. Legislation is a good example: my effective use in court of a law mandating fair accommodation of pregnancy makes that law more serviceable for future claimants through the precedent it sets.

Materials that are both privately held and limited constitute an important subclass. These are the resources whose allocation by individuals (or couples, families,

companies, etc.) is studied in microeconomics. When Johnson-Hanks' (2006) interlocutors say that they are waiting to have children "because of the lack of resources," these are the resources that they have in mind. Yet, it is critical that limited, individually held resources are only one sub-class of materials, and arguably not even the most important. The materials components of structure have many forms relevant to parenthood, including many that are neither limited nor privately held.

### *On the Distribution of Materials*

As with schemas—and for some of the same reasons—access to materials of many kinds is unevenly distributed across social and geographic space. An individual's ability to mobilize resources to build lines of action is a function of the environment into which she is born, as well as of her own developmental trajectories. McPherson (2004) uses the concept of "Blau Space" to describe the distribution of individuals within society along socially meaningful dimensions such as age, sex, income, and education. Individuals are also distributed geographically—in rural, urban and suburban places, in cold, temperate, and arid places. Many structures are differentially distributed across geographic and Blau Space: two-biological-parent intact families are more common among the college-educated; welfare systems are relevant mainly in poor populations, and 4-H clubs in rural areas. An individual's location within society—both geographic and social—influences his or her exposure to and identification with specific structures and the material and schematic components of which they are made.

People similar to each other in social and economic position will tend to be similar in the nature and type of materials available to them (McPherson, 2004). This similarity comes both from the fact that they are likely to perceive and categorize materials in similar ways, as well as from common relations of power and inequality. Siblings are likely to share genetic endowments, human capital resources like education, and a set of schemas that give meaning to that education, as well as the laws of their state, practices of their religion, infrastructure of their city, language of their country, and cultural heritage of their civilization.

Even collectively held materials can be unequally distributed. In theory, all Americans share access to a set of laws that protect us from discrimination, such as being fired for pregnancy. However, this law is not equally invocable by all; people are unequally able to mobilize the law to advance a line of action. Highly educated women with desirable skills who work in professional settings are unlikely to be fired if they get pregnant, and unlikely even to have their request for federally mandated parental leave rejected. If they do suffer discrimination, these women are likely to be able to hire a lawyer and sue for damages. Other women—less educated, working in unskilled and non-unionized positions—may know of the law, but it does not serve them if they are unable to deploy it in their own defense. It is therefore not only access to privately held, limited materials that is unequal, but also access to other kinds of materials. This inequality is partly the result of variation

in schemas, since material structures depend on schematic ones for their meaning. High-quality, low-cost day care is not a salient material for a couple that considers any form of non-maternal child-care to be abandonment. A policy that allows female junior faculty to stop the tenure clock for childbearing is not an effective family-friendly material as long as senior faculty view women who take that benefit as less than serious scholars. However, the policy may still be an effective material in recruitment, in protecting the university against lawsuits, or even in inhibiting the establishment of more successful policies.

In addition to being unequal, the distribution of materials across social space is also “lumpy,” by which we mean that certain materials tend to cluster and the variation between individuals is not continuous. As an example, think about the relationship between profession, education, income, neighborhood type, and health insurance status. Not only are these things highly correlated, but more importantly, if we attribute every American to a box in this five-way matrix, we will find that the vast majority of boxes are empty, and just a few boxes each contain several million people (for a richer discussion, see Abbott, 2001, pp. 37–40). Many kinds of material clump together and reinforce one-another. Education is a powerful resource in part because of how it is mobilized in the labor market; religious communities are powerful resources in part because of how they can be mobilized in electoral politics. This mutual reinforcement between different kinds of materials makes social organization much more complicated and more densely interconnected. Social systems resemble ecosystems, where small interventions at the margin may have enormous consequences as they are magnified and multiplied through mutually reinforcing relations. Like ecosystems, social systems are highly structured, even if the limits of the system are ill-defined. Like ecosystems, social systems are not the sum of their parts, but rather the product of their relationships.

## **Schema-Material Interdependency and the Emergence of Structure**

The schematic and material components of structure each make possible the other, both synchronically and diachronically. At any moment, materials can only be mobilized in relation to some schema, and their value follows from the schema that they embody. For example, virginity is only valuable on the marriage market in an institutional context where social actors share a schema of feminine virtue based on chastity. Similarly, existing schemas influence which material structures are developed over time, and how. Oudshoorn (2003, p. 6) points out that the last 50 years have seen 13 new contraceptive technologies for women, whereas no new male methods have been developed since the 1890s. As she argues in different terms, this disparity results from widespread schemas about sexuality and responsibility for reproduction. Materials are the partial product of schemas.

At the same time, however, schemas cannot float free of materials, or at least not for long. Social institutions, the distribution of material resources, and the structure



of social networks all maintain and diffuse particular cultural representations while inhibiting the development and flow of others (see Urban, 2001). People internalize existing schemas from their public manifestations in materials. Infertility clinics reiterate the centrality of biological relatedness to “proper” parenthood; provisions in welfare laws send messages about the value of work and marriage. As the perceptible incarnation of structure, materials ground schemas in the world.

Although material and schematic components of structures are interdependent, they are not perfectly mutually determined. The partial misfits occur in part because the mapping between materials and schemas is many-to-many. For example, materials such as frozen, ready-to-eat peanut butter sandwiches (yes, they really do exist!) instantiate a range of partially incongruent schemas, including the importance that mothers feed their school-aged children healthy food that they will like, the social undesirability of school lunch, and the legitimacy of market replacements for domestic labor. Conversely, the schema of food-as-maternal-care has many material manifestations in American society: not only food products and the advertisements used to promote them to consumers interpolated as caring mothers (variants of “they’ll love the taste, you’ll love the nutrition”), but also the political mobilization of mothers around vending machines in public schools, Michelle Obama’s organic gardening campaign, and even social science research on the relationship between family dinner and school achievement. One schema is manifested in many, many materials; most of those materials manifest more than one schema.

This many-to-many mapping of schemas and materials means that changes in one social domain can readily move into another. Changes in school lunches are linked materially to the supply chain for industrialized foods and schematically to notions of what is appropriate, healthy, and enjoyable for kids to eat. As members of the PTA start to construe child health in new ways, they insist on vitamin D in milk or lower-fat snacks, and suppliers are forced to respond. As the supply chain starts to change, so too does advertising, moving not only the new materials, but also the schemas that make sense of them. The many-to-many mapping also implies that in the normal course of affairs, many schemas remain unsettled, because they are somewhat differently enacted in different materials. The everyday lack of fixity becomes dramatically more consequential when circumstances change, and minor or secondary schemas suddenly take on central importance. Because we necessarily make sense of the world through schemas (categories, paradigms, metaphors, typologies, etc.), new phenomena require us either to stretch and transform available schemas or to develop new ones. In turn, schematic transpositions or extensions inspire new materials.

Together, schemas and material comprise structures, the recurrent patternings of social life. Structure, as we use the term, is the product of schemas and materials interacting over time. Like schemas and materials, it has considerable inertia, but does change. For example, marriage in the contemporary United States follows some relatively invariant patterns: couples select each other on the basis of mutual love, they announce the intention to marry prior to the wedding itself, the wedding is witnessed and ceremonially marked, followed by cohabitation—separate from other adult relatives—and sexual activity. These patterns emerge from the



interaction over time of schemas regarding the need to regulate and protect the process of reproduction and the importance of intimacy and commitment in a good life with materials such as laws that give unique rights and responsibilities to married men and women, the representations of marriage in bridal magazines, family health insurance policies, and the design of bedroom furniture. The interdependence of schemas and materials give structures both inertia and the potential for change. In the United States, some aspects of marriage have changed little, for example, the expectation that the husband must be capable of supporting a family and the form of the wedding ceremony. Other aspects, however, have changed dramatically—the ordering of marriage in relation to childbearing, its permanence, and even its limitation to heterosexual couples. These changes in structure have been possible because schemas—such as those valorizing personal fulfillment—can be transposed into the domain of marriage, and materials—such as divorce laws—can be modified to reflect the schemas. This provides a nice example of how a minor or secondary schema can overtake a more central one. Changes in many material domains arise as the result of schematic change on what looks at first like the margins.

## Identity as the Embodiment of Structure

Structure as we have used the term inherently occurs at the social, or supra-individual, level. However, structure shapes people in profound ways, inculcating them with particular habits, hopes, and views of the self. Most importantly, social structure is reflected in identity. We use the term identity in its broad sense, to refer to the psychological structure or system that organizes diverse schemas about the self and its relations to others. Thus, our usage of the term encompasses ego-identity, or the basic continuity of the self (Erikson, 1959); personal identity, the characteristics and behavioral repertoires that differentiate the self from others (Côté & Levine, 2002); and social identity, the roles and self-categorizations that position the self in social space (Howard, 2000). While social identities are most closely linked to structures, all aspects of identity are shaped by, and “embody” structure in some way.

Identity resembles an individual-level counterpart to “structure” in many ways. Identity, like structure, has a dual character. The identity “soccer mom” draws on schemas of devotion to children that underlie middle-class American parenthood and takes material form in attendance at games and the planning of family routines around game schedules. Personal identities such as “good worker” similarly emerge from schemas (e.g., the value of hard work) and behaviors that give the schemas material form (e.g., staying late to meet a deadline, carrying a briefcase home). A schema will not generate an identity unless enacted, and behavior does not create an identity unless it gives a self-schema material form. Identities are created and sustained through the interaction of both schemas and materials. Like structure, this duality imbues identities with both inertia, resulting from the mutual reinforcement of virtual and material components, and the capacity to change over time in response to new experiences.

Identity develops through time and space as individuals experience the world. At a particular point in time, individuals occupy positions in social space and experience the structures pertaining to those positions in every day life. Over time, they appropriate the structures' constituent schemas, by storing ideas, meanings, and values in the brain, and their constituent materials, by cultivating abilities, knowledge, and behavioral repertoires. The structures that social actors inhabit inculcate them with intuitions and inclinations as well as habits, with aspirations as well as the human, social, and financial capital necessary to pursue goals. Structures shape identities by providing the raw materials for their construction, but individuals are not merely the passive recipients of structurally-determined identities. Rather, individuals shape their own identities out of the schemas and materials available to them through their choices about courses of action.

Identity and position mutually influence each other. Identities not only develop in response to social positions; they also influence the ways in which individuals position themselves in and move through social space. They influence who the social actor interacts with, who he respects as an authority, and his motivation to acquire specific material resources. They influence the specific contingencies that an actor experiences in the course of daily life, and hence the potential opportunities she has to experience particular structures and to transform them through her actions.

## Conjunctures and Construal

We do not generally encounter a single structure alone, or a complex structure in its entirety. Rather, we face “conjunctures”<sup>5</sup>: short-term, specific configurations of structures in which action can occur (Bourdieu, 1977, p. 78; Sewell, 2005, pp. 220–223). We confront an unintended pregnancy, a job offer in Chicago, the expiration of a birth control prescription, a chance to buy a dream house. In these moments, a range of structures are in play—some more actively, others more in the background—and so the schemas and materials that constitute each are salient to our action. In contrast to relatively stable structures, conjunctures are temporary. They open up, are resolved, and new ones emerge. Conjunctures are where stuff happens—people get pregnant, married, or divorced, they convert to a new religion, go back to school, or move across the country. At a very real level, therefore, conjunctures are the relevant unit of exposure. But thinking about change and variation in demographic rates as the product of differential distributions of conjunctures, TCA thus takes a very traditional demographic view. We argue that social demography should focus on the distribution of contexts in which events might occur, rather than on the characteristics of individuals: More Keyfitz, less Becker.

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<sup>5</sup>One reader was particularly uncomfortable with the term “conjuncture” and chose to mentally substitute “situation” throughout. Readers are welcome to make this kind of substitution if they prefer. However, we retain the word “conjuncture” because it has such wide use in social theory, in precisely the sense that we intend.

Following Sewell, we use the concept of conjuncture rather than the more general ideas of “context” or “situation” because we want to emphasize two things. First, for some specific action, only certain elements of context will be relevant: which elements of context matter and how those elements are related both constitute important parts of the explanatory story. Thus, as we write, the ongoing discussion about gay marriage in the United States occurs in a context of the war on terror, rising oil prices, new turmoil in the Middle East, greater sexual freedom, decreasing marriage rates, and aging baby boomers. All of these facts constitute part of the context, but only some of them are part of the conjuncture. Second, part of what is compelling and surprising about the conjunctures of social life is what they bring together, or “conjoin.” Decisions about fertility are notoriously dependent on work, and cross-country moves may hinge on a child finishing high school: “conjuncture” nicely captures the fact that the specific configurations of context in which action occurs are striking juxtapositions of different life domains. Is work the context for reproduction? Or reproduction the context for work? Thinking instead about “conjunctures” in which work and reproductive trajectories become mutually salient and their futures equally indeterminate renders the question moot.

Social actors make sense of what is going on in a given conjuncture through the schemas accessible to them. Social actors can neither experience nor respond to the world except through some set of schemas that, like the cognitive processing necessary for vision, interpret an unordered array of dark and light into trees, vistas and faces. These construals are routinized, but not fixed. Indeed, part of our uniquely human heritage is the ability to construe a given object, situation, or utterance in multiple, different ways (see also Hanks, 2005). Yet, although we have access to multiple possible construals, structures make particular construals more accessible than others. In many circumstances of everyday life, a single construal is highly regularized, so that consociates or onlookers would consider any alternative aberrant. When the priest says, “Speak now or forever hold your peace!” it is not construable as an invitation to reflect aloud on local gas prices. However, in other circumstances, more than one construal would be possible, opening up uncertainty regarding which schemas social actors will employ in a given situation, and how. For example, an interaction might be ambiguous, such that a participant asks herself: is this a collegial coffee break? A chance to discuss my recent performance in the company? A date? Sexual harassment? Because it may be any of these, or several at once, and because both parties may reinterpret the event as it unfolds and even afterwards, cultural schemas do not inhibit agency or social change (see also Shore, 1996). To the contrary, the underspecification of schemas enables social transformation, as schemas are stretched or transformed to fit new circumstances.

Construals are highly consequential for subsequent experience and action, because reading this-here-now as a case of some abstract schema both focuses the actor’s attention on certain elements of the conjuncture over others, and imports a set of expectations from the schema into the specific context. For instance, whether you construe a meal shared with an attractive, single colleague as a date or a business meeting will imply different sets of expectations about who pays the bill and how

the evening ends. Whether you construe your child's misbehavior as a normal phase or willful disobedience implies different kinds of disciplinary practice.

The inescapability of construing conjunctures through existing schemas does not render social actors powerless or mindless. In addition to the possibility of alternative construals in the moment, much of what people do has the effect, or even intent, of placing themselves into new demographic categories, with their associated schemas, materials, and stereotypical conjunctures. We choose whether to marry, to become a college graduate, and whether to volunteer at Planned Parenthood. These decisions influence with whom we associate, to what schemas we are exposed, and which of these come to seem natural and appropriate in a given situation. We select ourselves into and out of social groups, sometimes even *in order* to acquire specific schemas. However, this power is limited. Most people cannot choose whether to be Black, whether to attend a high-quality local public school, or to choose a course of action that is outside "the calculus of conscious choice" (Coale, 1973). Demographic models of family change and variation have tended to assume that social actors have enormous freedom in choosing the form of their families (see especially Becker, 1981; Bongaarts, 2001). While we agree that family making is in part a goal-driven, intentional process, the TCA treats these goals as social products, the products of structures.

## Events and the Remaking of Structure

We can usefully think of the material and virtual elements of structure existing in equilibrium, like fertility and mortality in a stationary population. Perturbations set off homeostatic mechanisms that either transform the equilibrium or reestablish the status quo ante. Many conjunctures are perturbations of this kind. They regularly emerge, and the individual or individuals involved in them take action to work through them. The "action" may be non-action, such as failing to use contraception in a sexual act, or not proposing marriage, but it nevertheless resolves a conjuncture in which action could have occurred. Conjunctures remain "open" as long as two or more alternative possible futures remain in play; they close when the path forward again becomes unambiguous—if only briefly (see Johnson-Hanks, 2006, pp. 194, 261–262). The resolution occurs both in a social arena, and also in a psychological one. For this reason, evidence from cognitive science and its kin regarding the "short-cuts" that people employ in responding to complex and dangerous situations is particularly salient (See discussion in the next chapter. Also Bechara, Damasio, & Damasio, 2000; LeDoux, 1995, 2000; Lerner & Keltner, 2001; Slovic, Peters, Finucane, & MacGregor, 2005). Yet much remains to be learned about the processes involved in actions that are not the result of reasoned decision-making, and about those that result in creative or innovative as opposed to habitual actions. Although beyond the scope of this chapter, these processes are critical, because they are at the heart of the human agency that drives much of social change. The next chapter addresses them at some length.

We call the resolution of a conjuncture an “event.”<sup>6</sup> Events remake structure, both reinforcing it and transforming it. Although nearly all events reinforce some aspects of structure and transform others, we can distinguish between “reinforcing events” and “transformative events,” depending on which aspect is more conspicuous. Structures are residues of the history of their uses and effects. Making new use of schemas and materials contributes to that history, by for example expanding or contracting the domains over which a schema may effectively apply, or expanding or contracting the domains in which a particular material may be circulated. Structure in TCA is not like a blueprint for action that remains unaltered by how it is deployed; but rather like a creek bed, which channels the flow of water but is, over time, deepened or altered by the flowing water, social structure shapes behavior in the short-term and is shaped by it in the long term. “Events,” as we use the term, vary in scale in the same way as do structures and conjunctures. At the individual level, births and marriages may be the prototypical examples of events, but in our framework so too are religious conversion or incorporation into a new social community. At a much larger scale, the sexual revolution saw the transposition of existing values on individual freedom onto the domain of sex, partly as a result of new commodities and new legislation. That, too, was an event.

Structure-altering events can often only be identified as such in retrospect, once it becomes clear that the structure has in some way changed. Because of this, social actors living life forward rarely know in real time whether the conjuncture that they are facing will produce a transformative or a reinforcing event.<sup>7</sup> Even something as extreme as the fall of the Berlin Wall only becomes unambiguously a transformative event once its consequences are known. Had the demonstrators been subdued, the Wall reconstructed, and the political changes prevented, the events of the 9th of November 1989 would be remembered as a failed uprising, like the protests at Tiananmen Square, and not as a history-changing event. As we write, no one knows whether the uprisings in Libya will be transformative or reinforcing events, what kind of equilibrium between schemas and materials will be established. On a smaller scale, the action of a father who, faced with an unruly daughter, draws on new schemas or materials to cope with the problem may ultimately alter disciplinary structures if others in his circle adopt his solution, or his daughter goes on someday to write childrearing manuals based on her own upbringing.

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<sup>6</sup>Sewell limits the use of “events” to transformative ones, calling reinforcing events “happenings” (Sewell, 2005, pp. 210–211, 244–245). For simplicity, and because early readers protested that “happening” gave them creepy flashbacks, we call both “events.” Note that non-action (not filling a prescription, not having sex without a condom, etc.) is also an “event” in this sense.

<sup>7</sup>Yet, individuals do experience some (life-) historical moments as being potential crucibles of transformative events, when previously taken-for-granted futures are called into question. Because of this calling into question, structure is not suspended, but rather made more explicit. Like all conjunctures, those experienced as potentially transformative may end with a transformative event or with a restoration of the status quo ante.

## *How Structures Change*

Transformative events are always possible, but they are only likely under particular conditions, when the mutual reinforcement of schemas and materials becomes unstable. In these situations, conjunctures become ambiguous, that is, not easily construable under existing schemas, and the courses of action that were previously taken for granted come under scrutiny. This can happen dramatically and even exogenously when a new schema or material suddenly becomes available, whether through an explicit campaign, population mixing and movement, or innovation. For example, Sahllins (1985) uses the example of the arrival of Captain Cook in Hawaii to show how structures can change in response to previously unknown conditions. The mutual reinforcement of schemas and materials can also become unstable more slowly and more endogenously, such that what once constituted a single, relatively coherent structure incrementally deteriorates over time. This may eventually lead to crisis, such as the storming of the Bastille discussed by Sewell (1996), or to equally slow and incremental adjustment, as could be argued occurred with fertility rates in the European demographic transition.

Regardless of its initial causes, once either the virtual or material elements of structure have been disrupted, the others have to adjust. This process is not chaotic. Like the resolution of stand-offs so elegantly analyzed by Wagner-Pacifici (2000), transformative events occur in only a limited number of ways. Occasionally, new circumstances require completely new materials or schemas. Most of the time, however, schemas and materials from other available structures are transposed or stretched to address the new circumstances. Transposition means that schemas and materials from one social field are applied in another. Bourdieu discusses transposition (or “scheme transfer”) at some length (for example in 1990:250 ff.), arguing that the “generative schemes of the *habitus*” in a can be applied “. . .by simple transfer, to the most dissimilar areas of practice” (1984, p. 175). Examples are legion. Bartkowski (2001) describes how some Evangelical families transpose management strategies and language from the workplace to the family, balancing male headship with contemporary ideas about equality: “Dad is our CEO.” Transposition is easiest and therefore most often effective when the domains are already adjacent, that is, when the materials and schemas can be simply stretched to cover the new case. Many of the schemas that Americans use in thinking about new reproductive technologies such as in vitro fertilization are products of stretching: schemas about personhood previously applied only later in pregnancy are stretched back in gestational time, so that blastocysts are called fetuses and are thought of in the same way.

During transposition, two alternative sets of schemas and resources applicable within the same social field may be “blended” (the term and concept come from Fauconnier & Turner, 2002) to produce a new, yet recognizable social form. Contemporary childbirth classes, for example, incorporate together schemas and materials from the natural childbirth movement, community college “adult education” programs, public health social marketing campaigns, and talk therapy. The familiarity of these sources makes the new structure easy for most middle-class

Americans to cope with. They have encountered the materials before (circle of chairs, sign-in sheet, grocery-store baked goods. . .) and have relevant schemas (about volunteering to share your experience when the teacher asks, taking notes, attending to your own wife and not flirting with the others. . .). Even at the first class, therefore, most participants can manage. And those who lack experience with the structures from which the materials and schemas were transposed may simply not come back.

This implies that structural changes are more likely when they involve a relatively simple extension or close transposition, or the blending of already similar schemas or materials. For example, in the US context we can hypothesize that debates around end-of-life issues would be transformed if the “quality” of death came to be viewed as a consumer good, with high value placed on the time, place, and circumstances of death—as has occurred with giving birth for upper-middle class women. Or these same debates could be transformed if Christian leaders relabeled artificial respiration and feeding tubes “unnatural hubris,” borrowing from schemas already in play regarding in vitro fertilization and stem-cell research. By contrast, we would argue that it is very unlikely that end-of-life issues in the US will be reconfigured by people arguing that the terminally ill should act with honor for the good of the group by quietly committing suicide, although this argument might gain traction in a different social context. As in this example, thinking about the transposition of structures allows us to generate hypotheses about the direction of future change. As we will see in [Chapter 5](#), social change is sometimes fast enough to allow us to evaluate these hypotheses within a decade or so.

To summarize, both the continuity of structure and its change can occur because schematic and material structure are repeatedly mobilized in the partly contingent configurations of structure that we call conjunctures. Demographic rates are, in this way of thinking, the consequence of structures in two ways. Structures determine what kinds of conjunctures are likely or unlikely, and they provide the schemas and materials through which conjunctures can be confronted. Social actors construe conjunctures through the schemas accessible to them, classifying certain circumstances as instances of abstract models or categories, and deploying materials in order to advance a line of action. This line of action has direct consequences for vital events and indirect—and usually unintended—consequences for the quality, quantity, or distribution of categories and materials themselves.

## **Structure, Power, and Inequality**

We argued earlier that access to both schemas and materials is always uneven, and sometimes dramatically so. This applies not only to limited, individually owned materials, but to all materials, albeit in different ways: printed schedules or directions are not directly accessible to the functionally illiterate; anti-discrimination legislation aids only those wealthy and savvy enough to hire an attorney; freeways serve only those with cars. Schemas, too, are unevenly distributed across social



space. And because we rarely make a conscious selection of the schema or schemas through which we will construe a given conjuncture—construals most often come unbidden and seemingly self-evident—the uneven distribution of schemas cannot be overcome by individual conscious choice. This uneven distribution allows us to think productively about power and inequality. Power means the ability to define the terms of engagement and manipulate materials to advance a line of action.

Powerful social actors and institutions are those who consistently succeed in convincing or coercing others to accept their construals at the expense of alternative possible readings of what is at play. Thus, the real conflicts are not over whether the estate tax is good social policy, but whether it is a “death tax,” and not over whether social science research indicates that gay marriage would be beneficial or harmful, but whether gay marriage is more like interracial marriage or more like bestiality. Nearly all contemporary theories of power stress the ability to define the terms of engagement (e.g., Foucault, 1979, 1980; Giddens, 1984; Gramsci, 1971), but also the ways in which this ability relies directly and profoundly on the effective deployment of materials. At the limit, powerful social actors enforce their construals through overwhelming force. Most examples in the contemporary US, however, are more complex. The media and advertising, legislatures and courts: these are structures that disseminate, normalize, and even enforce specific construals at the expense of others.

Because structures tend to produce the conditions of their own reproduction in an ongoing fashion, they can have remarkable staying power. And since many structures privilege certain people and groups over others, inequality can be remarkably persistent. It is important that this persistence does not depend exclusively on the intentions or choices of individuals, although intentional action is one significant source. Structures emerge out of many—sometimes very many—mutually reinforcing schemas and materials as they interact over time. Thus, structures are not only the means through which specific social actors acquire and maintain power, they also have a kind of power of their own: an impersonal, non-intentional, diffuse power to channel potential change, making some kinds of transformation easy and other kinds more difficult.

## Conclusion

This chapter proposes an approach through which to view family variation and change. Expanding on the work of William Sewell (2005), we have proposed that the core questions about family are questions of how material and schematic structure are invoked, and thus transformed, over time. That is, we are not arguing for a minor change in how social demographers model fertility decisions, but rather for a major change in what kinds of questions we as a discipline ask about family structure and process, about vital rates, and their causes. Whether the topic is household composition, family living arrangements, temporal patterns, relationship characteristics, or economic transfers, at issue, we argue, are structures.



These structures are neither entirely virtual nor entirely material, but rather the interplay of both over time. Virtual structures we have called schemas: taken-for-granted ways of classifying, interpreting, and engaging the world. From linguistic classification, through scripts for common behavioral sequences, to concepts of what is good, just, or honorable, schemas allow us to understand and to act. Material structure includes those reserves of value that embody schemas, but also have an existence beyond them. Materials include not only markets and institutions, but also information, physical capacities, styles, authority, rites or rituals, normative practices and legislation. Social action occurs in conjunctures, short-term and contingent configurations of structure. In conjunctures, social actors—whether individuals or groups—employ the schemas and materials available to them to make sense of what is happening, and to act. Employing the schemas and materials, it once reinforces and alters them, like the creek pushing the bank slightly to the north, even as it deepens the channel.

This framework of social life at the intersection of structure and contingency can apply at the level of the small group as well as the level of national change over the twentieth century. It allows us to think analytically about important social processes—like the cumulative macro effect of individual actions—that cannot be easily measured or accommodated in other models employed in social demography. It accounts for social stability and social change with a single set of mechanisms. For all of these reasons, we think that the theory of conjunctural action offers a comprehensive framework for thinking about the family differently and more productively than the majority of work in social demography has done to date.

But the importance of a new approach to family change and variation also rests on the considerable advances in theory and findings in related disciplines over the past four decades. The old view of demographic events as the product of independent, individual rational choice has been dramatically undermined by research in disciplines from psychology to anthropology to biology. The theory of conjunctural action is highly consilient with what we know from cognitive science and psychology about the working of human brains, and with what we know from cultural anthropology and social history about the working of human cultures. The next chapter focuses on the ways that the TCA builds on and complements research in this wide range of disciplines.

## Chapter 2

# Consilience

Our project in this book aims at *consilience*, a term popularized by Wilson (1998, p. 8) to signify a “jumping together” of perspectives and facts to produce a “unity of knowledge”. In this way, our efforts resonate with current trends toward multi-disciplinary and interdisciplinary theory and research. It is important to note that seeking consilience is different from seeking a compromise or consensus. Some perspectives and models will be partially or even completely incompatible with ours. Usually this occurs because we are convinced that the research across a range of disciplines points away from that perspective and toward a different one. For example, approaches that view family processes as dependent only on custom or only on utility maximization are not well supported by contemporary empirical research.

In its purest sense, consilient science begins with the most fundamental insights relevant to a problem from all disciplines, and integrates these in new models that transcend disciplinary frames, building theory from the ground up when necessary. More modestly, researchers may seek to identify continuities, discontinuities, and parallels in the scientific knowledge across many different disciplines and fields of research, without claiming that they are the most fundamental. The process of reconciling theory and evidence across fields can lead to the identification of flaws and gaps in theory, the development of insights leading to improved or more widely applicable theory or method. Whether in the bold or modest form, this approach to consilience is necessarily antidisciplinary, in the sense that it resists reasoning from the logic of any given disciplinary model. Instead, these efforts at consilience reason from the sometimes illogical facts of the world.

A more common form of consilience in current research is, however, strongly disciplinary: scientists bring insights or findings from one discipline into another (e.g., Tversky & Kahneman, 1974; Ridgeway, 2006). These kindred efforts begin within a discipline and attempt to “push out the sides of the box” to incorporate a broader range of phenomena. For instance, Becker’s (1981) work on the economics of the family applied economic models to a social phenomenon; it has in turn been extended and amended many times to incorporate the insights from other disciplines. Akerlof and Kranton (2000) similarly incorporate sociological and psychological notions of identity into utility maximization models.

We argue here for a more consilient social demography, trying both to “push out the sides of the box” and to start from scratch when necessary. As we described in the introduction, we began with questions in family demography that we felt had not been adequately addressed. We looked for theories and research that could contribute to a better understanding of those questions. We found, in William Sewell’s work (1992, 2005), a theory of structure that became the foundation for our efforts. We extended that model to incorporate new elements drawn in part from psychology and neuroscience. In this chapter, we assess how the elements and assumptions of TCA line up with knowledge from these and other areas of science.

Wilson (1998, p. 9) claims that “trust in consilience is the foundation of the natural sciences . . . (and) . . . the momentum is overwhelmingly toward conceptual unity.” In the social sciences, that momentum is perhaps weaker than in the natural sciences, but it is present nonetheless. Disciplinary boundaries are being challenged and efforts such as ours reach for the same kind of conceptual unity that Wilson advocates (also see Massey, 2005; Gintis, 2007; and work in neuroeconomics, e.g., Glimcher & Rustichini, 2004). We are more cautious than Wilson in that we do not seek the integration of the humanities, although science certainly has humanities implications (as do the humanities for science), and even within the sciences, our attempt at integration is primarily targeted at bridging among the social sciences and between the social sciences and some aspects of biology.

Like any such enterprise, we necessarily begin with some assumptions, which we hope will be palatable to most social and biological scientists. We take for granted that structure and cause exists in the world at many levels—for our purposes, these range approximately from society to the cell (although we are much more confident of our mastery of the state of knowledge on the former than the latter). Second, we assume that causal processes interact across these many “levels”. Third, we assume that scientists can develop standards for agreeing on the best ways to model and understand these processes. Many processes—especially social ones—are too complex to be adequately explained using a single model. There is good reason to use both a model of “marriage markets” and a model of culturally constructed “scripts of love,” depending on the aspect of marriage you seek to explain (see Burch, 2003). Nonetheless, the fact that the world is multiply describable does not mean that we should give up on a coherent, unified description when possible.

We assume causes exist and causal processes operate both within and across more micro and more macro “levels”, which have historically been the provenances of different disciplines. Thus, adequate models require unified knowledge across disciplines. Take the common but crucial example of genetic and environmental influences on behavior. If these effects were independent of one another or strictly additive, then they could be studied independently. But if they interact, fundamental understanding is lost by separate analysis. Social demography is a domain where levels interact. Reproduction is social and biological, with both an evolutionary and cultural history of consequence.

Consilience is implicit in the traditional criteria used to compare theories or models: that they are useful for an important and broad set of problems, fit the

relevant data, and are parsimonious. As unified knowledge, consilient theories address a broad array of questions within and across micro and more macro levels. Our focus is primarily on the broad array of questions related to family change and variation and their underlying behaviors. Nevertheless, the processes we described in the previous chapter apply to many other aspects and types of social change. Finally, a consilient model is highly parsimonious since, to the extent possible, it uses a core set of concepts and processes across levels.

While our goals and claims generally follow Wilson's (1998), there are several places where we differ from his views and several more where we want to distinguish our approach from some common misreadings of *Consilience*. As noted above, our project is considerably less all-inclusive than Wilson's: we are seeking to integrate some aspects of human biology, psychology, and sociality, not all of the sciences. Our claims are not reductionist: we argue that causal properties operate at multiple levels, but that processes at a more macro level only sometimes arise out of the simple aggregation of more micro level processes (c.f., Wilson, 1998, pp. 150–163). Population dynamics, for example, cannot be understood through an analysis of individual-level covariates; they emerge at the level of the population, and cannot be analyzed reductively (see Lee, 2001 for a relevant discussion). And whereas Wilson asserts that the social sciences can learn much from the procedures and content of the physical sciences, we stress that the opposite is true as well.

In this chapter, we show how key findings and theories from the biological and social sciences contribute to and align with the theory of conjunctural action. We also address ways in which we have built upon or extended these findings and theories in order to produce a framework useful for research on the family and family change. The concepts or processes that we relate to TCA are ones that are important in the substantive domain from which they are drawn and that we believe have been well established and accepted within that domain. The evidence base for these concepts and processes varies dramatically from discipline to discipline, relying in some cases on experimental evidence and in some on an accumulation of ethnographic studies. We have tried to acknowledge situations where findings are disputed, although we cannot claim to have identified all such circumstances.

The central points of this chapter are these: TCA aligns with recent findings on human development regarding the ongoing interaction between individual-level biological potentials and social processes shaped by multiple and changing social and cultural environments. In accordance with current thinking across a range of fields, TCA characterizes history—both social history and the individual life-course—as a path-dependent, dynamic process that often unfolds in difficult-to-foresee or unexpected directions. TCA is consistent with both recent findings on the process of human decision-making, especially under uncertainty, and with the recognition that much human behavior is not the product of decision-making at all. Finally, TCA highlights the need to study not only people, but also the conjunctures, or proximal contexts, in which they act.

## Two Foundational Concepts

Recent research in health behavior and developmental psychology stresses that causal processes occur both over time and across “levels” (see Shonkoff & Phillips, 2000; Halfon & Hochstein, 2002; Boyce et al., 1998). We also take these dimensions to be foundational, arguing that we should pay attention to historical or path-dependent processes, as they are worked out across multiple scales of aggregation. By “path dependence”, we mean that events are determined in part by the preceding history of prior events and their accumulated imprints on individuals and social entities, and thus that small or idiosyncratic occurrences can sometimes have significant consequences later on. By “multiple scales”, we mean that we treat family and fertility change as saliently organized from below and above—both brain structure and social structure influence family outcomes.

Work by Glass and McAtee (2006) provides an example of this emerging consensus. Glass and McAtee build a framework that integrates the natural and behavioral sciences with respect to the study of behaviors and health outcomes. The framework features two axes of influence (time and levels of social and biological organization) and important integrating mechanisms (e.g., embodiment and structured contingencies). Glass and McAtee explain the framework in terms of a topographical metaphor, based on the idea of a “stream of causation” (see Fig. 2.1). The levels

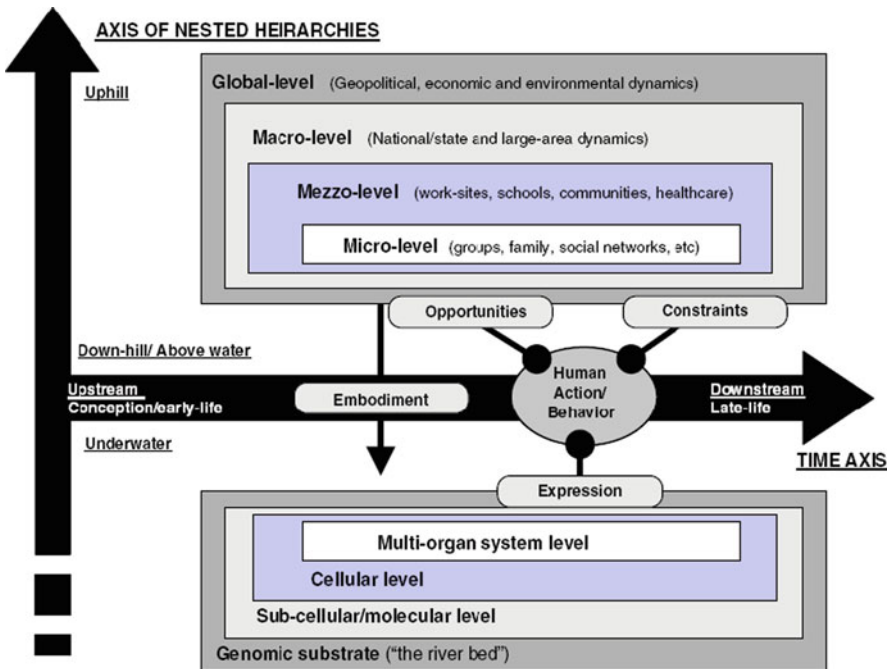


Fig. 2.1 Representation of multiple levels over time, from Glass and McAtee (2006)

of possible influence on human behaviors are represented in Fig. 2.1 as nested hierarchies. The genetic and biological domains are positioned “underwater” and the social environment is “above water”, with the water surface representing—as we understand it—the individual. Both above and below water, the domains that are positioned higher are more macro-level—levels produced by the interaction with those below (see the left-most, bold upward arrow). Higher-level domains also feed back to influence “lower” ones, for example through the embodiment of stressful experiences on physiological systems.

The horizontal axis (right-flowing arrow) represents the life-course of the individual as she or he develops and ages—represented as the inevitable force of gravity causing water to flow downhill. Human action and behavior is observed at particular conjunctures of these forces and processes. As Glass and McAtee (2006, p. 1655) say: “the proposed model seeks to stretch horizontally, across time, to better understand the cumulative, time-sensitive, historically specific, and duration-dependent effects of social context of human behavior and development”.

We find the Glass and McAtee conceptualization useful, but also potentially problematic. It is useful as a first step of conceptualization; how does one think about combining these many domains of influence? And do Glass and McAtee, we see its usefulness as a template for more middle range theorizing and for organizing data. But like all metaphors, this one has an important limit. Individual lives are more interwoven than would be suggested by the metaphor of a stream: other people and other families are not just context, but also outcome. On the other hand, the stream metaphor also suggests a point not made explicit by Glass and McAtee. The individual “flowing downhill” is guided by the shape of the embankments, made by generations of others who have flowed there before. But in the act of flowing, the individual also slightly alters those embankments—the virtual and material structures—thus changing in a small way the channel that subsequent flows will encounter.

### ***Path-Dependency***

The notion of *path-dependent processes* is central to the existing literatures on life courses and social change, and also to TCA. At its most basic, path-dependency means that the future depends on the past: history matters. History matters for individuals: developmental milestones, decisions and life-events that have occurred in the past—e.g., learning to value hard work, mastering the multiplication tables, decisions about education during adolescence and early adulthood, a decision to pursue a specific identity, or parental decisions, such as smoking during pregnancy, that affect the health of an individual at early life stages—continue to affect a person in later life, often in very different domains, and sometimes in a complex and difficult to predict manner. History matters also for social systems and structures: while structures may be modified or even transformed through various processes of change, they also possess significant inertia. Further, even when structures change, they do

so in ways that are dependent on prior history, although, again, often in complex and unpredictable ways.

Beyond the basic idea that history matters, the idea of path dependency draws attention to how idiosyncratic differences in starting condition, sequence, “momentum,” rhythm, and contingency shape outcomes. The concept includes both straightforward processes of habituation and self-reinforcement, such as how practicing a sport improves your muscles and coordination for playing that sport and makes it more likely you will play in the future, and also mechanisms such as social multiplier and bandwagon effects, whereby individual actions are multiplied by their diffusion through social networks or social systems. These differ in their dynamics and complexity, but share the fundamental characteristics that Arthur (1994, pp. 112–113) identifies for path dependent processes: They produce unpredictable outcomes; they are quite inflexible after the earliest moves, early “errors” do not cancel out but are remembered (“nonergodicity”), and they can produce very inefficient outcomes.

Path dependent processes appear to be at work in a wide range of phenomena, including the political culture of teachers’ unions in Greece (Athanasiaides & Patramanis, 2002), the degree of bureaucratization in Silicon Valley start-ups (Baron, Hannan, & Burton, 1999), pension reform in European welfare systems (Bonoli & Palier, 2007), education and child care policy in divided Germany (Hagemann, 2006); collective memory among the Zapatistas and Sandinistas (Jansen, 2007); changes in manufacturing at Toyota (Pardi, 2005); and the character of the Bulgarian transition to capitalism (Spenner, Suhomlinova, Thore, Land, & Joneset, 1998). Political scientists and sociologists have adapted the concept of path dependence to explain the development and persistence of institutions (Cox, 2004; see also discussion in Goldstone, 1998). Sociologists and economists have used the notion of path-dependence to explain how global processes—such as de-industrialization and globalization—that exert roughly similar pressures and challenges for all advanced societies have nevertheless resulted in very different and nationally varying patterns of schooling, labor force participation and other life-course dimensions as a result of historically-rooted national institutions and welfare regimes (Mayer, 2001). With respect to fertility-related behaviors, for example, Billari and Kohler (2004) point to the apparent lack of convergence between Northern and Southern European countries during recent decades with respect to important life-course patterns such as the sequencing of first birth and first marriage or the prevalence of cohabitation in early adulthood. In similar vein, Reher (1998) emphasizes enduring differences in family systems within Europe, contrasting the patterns in Southern Europe characterized by strong family ties with patterns in North-Western Europe, where weak ties have been typical of family relations for several centuries.

Path-dependency is a central concept in theory and research on the life course (see DiPrete & Eirich, 2006; Elman & O’Rand, 2007; Iwai, 2006). In TCA, we consider the life-course an interrelated set of path-dependent processes—education and career, relationships and marriage, childbearing, and so on—and focus particularly on conjunctures in which one or more of these processes becomes particularly



salient or important—such as expulsion from school, an unintended pregnancy, or a new job. In this regard, our view is consistent with most contemporary life-course theory, which emphasizes the fact that an individual's life course is a self-referential process that builds on prior experiences and resources, and that evolves in interaction with others (see Mayer, 2004).

The concept of path-dependence in a life course trajectory is also fundamental in much of the literature in psychology (e.g., Erikson, 1959; Piaget, 1954), especially developmental psychology. This literature stresses that many aspects of psychosocial development occur in ordered stages, such that the outcomes of one stage provide the foundation for and influence others that follow. Path dependence is also central to theories in the biomedical sciences: for example, the “Barker Hypothesis” posits that nutritional deficiencies during the prenatal period affect the development of physiological and metabolic systems in ways that predispose the individual to the development of chronic disease in later life (Barker, 2001). As LeDoux (2002, p. 3) aptly puts it, “People don't come preassembled, but are glued together by life.” As this process proceeds, each new developmental event unfolds in the context of what has already occurred.

These perspectives from psychology and the health sciences differ in a basic way from the dominant theoretical perspectives on family change and variation, despite the fact that they, too, use a life-course approach. The perspective on the life course common in family demography posits that individuals make decisions by weighting the costs and benefits of alternative possible actions in terms of their life-cycle well-being. For example, fertility theories often postulate that individuals or couples evaluate whether the contribution of a child to their life-cycle utility is worth its current and future monetary and opportunity costs (see Hotz, Klerman, & Willis, 1997; examples include Berman, Iannaccone, & Giusseppe, 2007). These models may incorporate path-dependence and contingency, but most do not, treating preferences as stable and future earnings as known.

A path-dependent development of the life course resembles closely what Elder (1974) in his classic study on the “Children of the Great Depression” has called accentuation. How families coped with the effects of the Great Depression depended on their initial competencies and resources. Poor competencies and poor resources easily led to “vicious circles” of deprivation and marginalization, whereas good competencies and good resources allowed one to cope with the effects of the Great Depression quite successfully. As a result, heterogeneity and inequality between families increased. Or, in studying the divergence of achievement by social class in the United States, Furstenberg (2006), drawing on Weber (1949), conceptualizes social class as a mechanism in which a set of life chances become more sharply pronounced as they play out over time. The life-course is thus seen as a set of micro-interactions that “cumulate in a patterned and successively more consequential pattern, etching a probabilistically pre-ordained trajectory of success”. Related concepts include cumulative advantage (DiPrete & Eirich, 2006; Willson, Shuey, & Elder, 2007), or increasing returns and positive feedbacks (Arthur, 1990). In colloquial terms, notions of path-dependence are often expressed with statements such as “vicious cycles”, “the rich get richer, the poor get poorer,” or “success breeds success”.



Contrary to the fairly deterministic notions of cumulative advantage implied by these terms, the notion of a path-dependent life-course developed here allows for a more complex interactions between events in the past, contemporary social contexts and long-term outcomes. This approach is consistent with findings, for example, that the consequences of moving to a poor neighborhood with limited educational opportunities differ across family members, depending on experiences prior to moving, new and old social networks, and the demographic and psychological characteristics of each individual.

Proximal contexts play an important role in path-dependent processes, which is why “conjunctures” play such an important role in the TCA. As emphasized by Nobel Prize-winner Kenneth Arrow in his foreword to Arthur (1994), the notion of path-dependent developments is particularly pertinent to situations where foresight is imperfect or expectations are based on limited information. Many important family-related decisions fall into this category. Individuals at critical junctures in their lives—e.g., deciding whether to marry their current partner, or stop contraception in order to have a first child—are often overwhelmed by the complexity of the decision, and decision-processes are often recalled as emotional or even stressful (see examples in Becker, 1999; Honkasalo, 2006; Johnson-Hanks, 2006; and discussion in McFadden, 2006). In such situations—and we would argue that they are numerous—*localized* learning and decision processes are highly important (see Lave, 1988; Lave & Wenger, 1991). Rather than fully evaluating the life-cycle consequences of various behaviors, individuals listen to their friends and engage in social learning, follow scripts—directly or in modified form—that are set by others who faced similar decisions, or they focus on the short-term and proximate consequences of their actions rather than the long-term life-cycle implications engaged in most economic approaches. The inputs to such decision-making are highly contingent on the proximal contexts of the individual’s experience, both past and present. Differences in the trajectories of individual through proximal contexts of experience can be critical for how life-courses diverge.

### ***Multi-level Interaction***

Like Glass and McAtee, we conceptualize the factors and processes that produce individual action as located in a hierarchically organized set of nested domains, ranging from the very small in scale (e.g., neurons) to the very large or aggregated (e.g., social systems). We focus on four domains: the brain, the individual, the immediate contexts of action (conjunctures), and social structure; even more, we focus on their interrelationships, from the individual/cognitive through the proximal interactive to the macro historical. In the next section, we discuss specific constructs operating at the individual, proximal, and structural levels. Here, we address how TCA’s understanding of the interrelationships among levels has been informed by relevant literatures.

A model of the world as consisting of nested levels immediately raises two questions: What defines a level as different from another one? And how do levels

relate to one another, “top-down” or “bottom-up”? We do not make strong claims regarding the first question. Although we presume that “levels” are characterized by their distinctive forms of structure and organization, most visibly at the smaller scales, this is not a claim on which we place much weight. Regarding the second question, however, we take a strong position, arguing that the integration of levels must occur in both directions—from below and from above—because causal linkages between levels in fact occur in both ways. When we identify attributes of the brain that lead to systematic biases in decision making, or hormonal forces that lead to systematic behavioral patterns, we are treating behavior as the partial product of human biology and evolution. When we stress the importance of conjuncture and structure, we are treating behavior as the partial product of context. Both of these are part of a larger project of integrating across levels, and indeed, they interact, as an important human characteristic is the predisposition to respond to social context.

Multilevel interaction has become an important domain of research in biology. Epigenetics, for instance, provides a classic case of interactive processes between the biological substrata and the external environment. Environmental influences such as diet or stress can produce (in utero, in childhood or as part of the aging process) chemical reactions that “mark” some genes for reduced or amplified expression. These environmental forces do not alter the DNA sequence itself; instead they activate or repress genes expression (see Curley, Jensen, Mashoodh, & Champagne, 2011; Gluckman, Hanson, & Beedle, 2007; Green & Han, 2011; McEwen, 2010; Sun, Sun, Ming, & Song, 2011; Waterland & Michaels, 2007). Neuroscience can take place at various levels: molecular, cellular, systems, and cognitive levels. The cognitive level addresses fundamental questions of how the brain functions and interacts with its environment. For example, how does the brain deal with grammar (Burns & Fahy, 2010; Vigliocco, Vinson, Druks, Barber, & Cappa, 2011)? How do adolescent brains differ in function from the brains of children or adults (Albert & Steinberg, 2011; Casey, Jones, & Somerville, 2011; Reyna & Farley, 2006)? What are the mechanisms and processes through which the actions of specific sensory neurons give rise to an integrated mental view of an object or a situation (Aglioti & Pazzaglia, 2010; Baumann & Mattingly, 2010; Betti, Zappasodi, Rossini, Aglioti, & Tecchio, 2009)? In both epigenetics and cognitive neuroscience, scientists are slowly coming to understand the ways in which biological processes at different levels of organization are integrated; genes not only make proteins that in turn constitute bodies, but they are also regulated by the biological contexts in which they are located. Brains are plastic in the long run, even though in the short run their connections are relatively fixed and strongly determine outcomes. Evolution has provided us with bodies, including brains, that are predisposed to seek out certain kinds of contexts and react to them in structured ways. We are glued together by life, in LeDoux’s memorable phrase, but not haphazardly.

Partly as a result of evolutionary imperative, human action is dramatically influenced by context, including social context. Thus, integration across levels must also attend to the ways in which “situatedness” makes a difference for family and fertility related behaviors. Over half a century of evidence from psychology, anthropology, sociology, and family demography demonstrate that wherever you

look for contextual effects, from the situation to the nation, you find them. Social psychology has a long tradition of focusing on the mechanisms that underlie group influences on individual decision-making. Social psychologists focus on the individual and attempt to explain how the thoughts, feelings, and behaviors of individuals are influenced by other people, groups and their environment. Social psychologists emphasize the immediate social situation and the interaction between person and situation variables.

Sociologists and anthropologists have examined the context of behavior in a wide range of ways, from the immediate “situation” (Goffman, 1972), through the neighborhood of residence, to the social field (Bourdieu, 1990), to the nation. These perspectives differ in how they construe context and its consequences for action. For example, now antiquated ideas about culture in anthropology treated cultures like boxes: a person was “in” a culture and therefore hewed close to its norms, practices, and beliefs. More contemporary approaches draw on the notion of “participation frames,” stressing that the effects of context differ for different actors in the same interaction (see Hammel, 1990 for a related discussion).

The method of integration across scales of context most widely used in social demography is multi-level (or hierarchical) modeling, which recognizes the fact that many data have a hierarchical or clustered structure by allowing for residual components at each level in the hierarchy, say, the household, neighborhood, municipality, and state. Multilevel models can thus answer the question, “how much of the variation at the individual level is within, as opposed to between, clusters?” A large number of papers now take advantage of the clustered nature of much survey data, applying multilevel models to the study of fertility (Bell, Zimmerman, Almgren, Mayer, & Huebner, 2006; Degraff, Bilsborrow, & Guilkey, 1997; Steele, Diamond, & Wang, 1996), marriage (Hank, 2003; Lievens, 1998); and infant and child mortality (Langford & Bentham, 1996, 1997; Sastry, 1997). The advantages of multilevel models are obvious and compelling. However, they share the limitations of all regression models: in the end, they can only “parcel out” associations—albeit more correctly than do models which fail to account for the hierarchical nature of some data. But understanding social causes and mechanisms requires more than the parceling of association, since some of the important action occurs in the mutual constitution of different elements of “context”.

Struck by the problem of how to think about the relationship between different scales of context, Hanks (2006) proposes a model of “embedding,” whereby the conceptually simpler contextual formations are not merely framed by the richer ones, but rather set into them like an organ of the body. The more complex formations both inherit properties from the simpler ones, but also transform them, introducing new principles of organization. For example, a specific face-to-face interaction—say, a negotiation over condom use for a specific, insipient sexual encounter—may be embedded in an ongoing relationship, which both takes its character from the face-to-face interactions out of which it has been built up, and also transforms their interpretation. The refusal to use a condom is a different act the first time the topic is broached than a similar refusal when the negotiation has yielded condom usage many times previously. This does not mean that ambiguities about “what is going

on” at the level of situation are resolved by recourse to a single, pre-given situation, but rather that they are resolved at the *level* of the situation, that is, through the richer shared history, schemas, and social materials of that level of context. Indeed, a given situation may well be embedded in two or more settings simultaneously, a situation in two or more fields. Using this framework, we can think productively about a single event as having contexts at different scales at the same time, without requiring that they be merely nested in each other like a set of Russian dolls.

## Key Elements of TCA

In addition to the key dimensions of time and level of organization, TCA depends on other important constructs that have been addressed by various scientific literatures. The main body of this chapter discusses the six central components of our framework: *schemas*, *materials*, *structure*, *identity*, *conjunctures*, and *construal*. Each of these elements is the subject of a large and significant literature. The TCA builds on these vibrant and growing literatures, and—we hope—brings them together in a productive way for social demography.

### *Schemas*

TCA is approach to understanding social structure and human behavior, which we apply particularly to family and fertility. At this broadest level, we are interested in how humans behave in response to their environment and changes in it. Schemas are important intervening mechanisms that represent, filter and interpret stimuli and thus both allow and shape a behavioral response. The importance of schemas in psychology goes back at least to Piaget (1932), and a flood of recent research continues to elaborate what schemas are and how they work. Even if the term is unfamiliar in social demography, it is standard in psychology, cognitive science, some branches of linguistics and anthropology. For example:

A **schema** (pl. *schemata*), in psychology and cognitive science, is a mental structure that represents some aspect of the world. People use schemata to organize current knowledge and provide a framework for future understanding. Examples of schemata include rubrics, stereotypes, social roles, scripts, worldviews, and archetypes. ([http://en.wikipedia.org/wiki/Schema\\_\(psychology\)](http://en.wikipedia.org/wiki/Schema_(psychology))).

Schemas are both formed by and used in perception and comprehension, and they “form a whole which is greater than the sum of its parts” (Anderson, 1984, p. 419). Schemas can also become widely shared by a community of interacting individuals and in this sense they exist at the macro-level (“in the world,” separate from any individual) as instantiated in the elements of a language, symbolic artifacts, or institutional forms and practices. At this level, they are embodied in *materials*, discussed in another section. Below we describe how insights from evolution, neuroscience, psychology, and comparative historical research “jump together”

in Wilson's terms, that is, can be integrated and are mutually reinforcing, to recommend the schema concept.

### **The Evolved Brain**

Our brains have evolved as surely as have our bodies, and through the same patchwork process. Linden (2007, p. 5), for example, emphasizes that the common characterization of the brain as “the pinnacle of biological design” is wrong. Instead he stresses the “inelegant design of the brain” produced by evolution; that is, understanding much of human behavior requires us to reject the notion of optimized design and to acknowledge the “quirky engineering” of evolution. Evolution has produced a brain that is predisposed to form schemas in interaction with the world, that is, a brain that is good at pattern recognition and generalization and in which different areas are specialized for different tasks. To use Linden's metaphor, the human brain is really three brains—one overlaid on the next like scoops of ice cream on a cone. “Through evolutionary time, as higher functions were added, a new scoop was placed on top, but the lower scoops were left largely unchanged” (2007, p. 21).

These levels, or “scoops” are associated with different kinds of mental function (see LeDoux, 2002; Lieberman, 2007). Much of the brain implements automatic processes, which are faster than conscious deliberations and which occur with little or no awareness or feeling of effort (Bargh, Chaiken, Raymond, & Hymes, 1996; Bargh & Chartrand, 1999; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977, 1984). Basic processes of learning—involving the creation, alteration, and pruning of synapses, and memory, or the stabilization and maintenance of such changes over time—are common to all areas are common to all part of the brain, and these processes of learning happen in tandem (LeDoux, 2002). As Mandler (2004, p. 91) explains, “infants represent information from an early age at more than one level of description. The first level is the result of a perceptual system that parses and categorizes objects and object movements. . . . this level of representation is roughly similar to that found in many animal species.” Most of what we perceive is at this first level; this first level of processing is not conscious or selective, but is best described as an unconscious monitoring. This level of processing is powerfully associative; “it aggregates frequency information—that is, how often something occurs, and the sequences in which they occur—and thus is responsible for our expectation about what will happen next” (Mandler, 2004, p. 55). Humans are great pattern learners, indeed, better pattern learners than we recognize “because so many (schemas) are nonconsciously acquired and operate outside our awareness” (Mandler, 2004, p. 49).

Largely through these automatic processes, humans, even human infants, can attend to particular stimuli, re-process this information and extract concepts from which they can construct schemas of increasing complexity. Many of us have heard young children say “I goed there,” or “We played house and I beed the daddy.” They have acquired and applied a grammatical schema, without being able to articulate it, and without yet knowing its limits. This ability to generate, elaborate, and combine schemas allows for increasingly complex representations. Further, this process allows concepts that are not merely combinations of previously formed schemas,

enabling us to form representations, to remember, and to plan (Mandler, 2004, p. 91). “The most important characteristic of the system is that it is accessible, first in the form of imagery and later via language, thus making conscious thought and imagination possible” (Mandler, 2004, p. 119). In associated networks models of cognition, memory is made up of a structured network of concepts linked through associated pathways (Anderson & Bower, 1973; Collins & Loftus, 1975). Individual nodes may be more or less accessible (i.e. easy to recall); and the associations between nodes can be strong or weak.

Current research on schemas includes attempts to simulate how cognition functions in real life, particularly using parallel distributed processing (connectionist) models (McClelland, Rumelhart, & the PDP Research Group, 1986; Rogers & McClelland, 2004). These are simulation models, largely conceptually consistent with the associated network view. With a simple set of inputs, these models can develop, store, and draw on conceptual and other knowledge. The models represent concepts by developing “neural network” structures that reproduce recurrent patternings of features in the environment as strong or weak connections among neurons representing bits of information in the brain (see Parker, 2010). The models generate meaningful schemas, differentiate categories of objects, generate propositional rules, and generally mimic how automatic processes in the brain seem to function.

Whether and how these models can be translated to actual neural processes has not been fully worked out. Lieberman’s (2007, p. 261) review of social cognitive neuroscience locates much of the automatic mental processing that contributes to schema formation in areas of the brain that are phylogenetically older (the amygdala, basal ganglia, ventromedial prefrontal cortex, lateral temporal cortex, and dorsal anterior cingulate cortex). However, it is clear that schema formation also depends critically on the evolutionarily more recent addition to the brain and the part that is disproportionately large in humans compared to other animals. Deliberate, “top-down,” or controlled processing takes place primarily in the prefrontal lobe (i.e., the lateral prefrontal cortex, medial prefrontal cortex, lateral parietal cortex, medial parietal cortex, medial temporal lobe, and rostral anterior cingulate cortex; Lieberman, 2007, p. 261).

Exactly how these brain systems work together to create schemas is still being debated. One likely mechanism involves “convergence zones” in the neocortex that integrate information across sensory modalities to create holistic representations of what is being sensed, a fundamental basis for schemas. The hippocampus, part of the medial temporal lobe, is particularly important as it receives input from many convergence zones. Because it can form memories about the workings of domain-specific systems, it plays a critical role in domain-independent memory and in the formation of memories that connect events to the contexts in which they occur (LeDoux, 2002).

Although much of what happens in these new parts of the brain is accessible to working memory, very little is conscious at any one time. Neuroscientists differentiate between explicit and implicit memories. Explicit memories can be recalled into consciousness, while implicit ones cannot. LeDoux (2002) cites an illustration: a woman whose explicit memory is gone may be able to play the accordion, but she

cannot explain how she does it. The schemas that represent the motor movements involved are stored in implicit memory, but those that relate those motor movements to abstract schemas and language are stored in explicit memory. As the preceding example demonstrates, both can affect behavior.

Language is overlaid on these neural processes and provides a powerful symbolic tool for evoking and conveying schemas. Waxman and colleagues argue that the categories of language are some of the most fundamental categories of thought and learning (Waxman & Medin, 2006; Waxman & Lidz, 2006). Language appears to play a role in shaping our schemas: Although the strong version of the Sapir-Whorf hypothesis—that what can be said determines what can be thought—is at best controversial (D’Andrade, 1995), weaker versions that posit an influence of language on schemas have received strong support (e.g., Roberson, Davidoff, Davies, & Shapiro, 2005; Lucy, 1992, 1997).

In sum, consistent with expectations from evolution, the brain is modular. The more recent and disproportionately large module is the prefrontal lobe that appears to be the locus of deliberative thinking; much automatic processing takes place in phylogenetically older parts of the brain. Both areas of the brain participate in the formation and use of schemas, which are somehow represented by neural structures. The complex interactions of these information processing centers is an active area of inquiry that has important implications for how we theorize about human behavior.

## Schemas Evolve

Schemas are relatively stable but they are flexible: they evolve in response to new experiences and new learning. What is more, they tend to become integrated and mutually reinforcing within particular domains through repeated application to experience. Broadly posited processes of schema elaboration (including many described by Piaget, see Mandler, 2004, chap. 2) provide for the integration of new perceptual information with existing schemas. Sometimes new information can be fit into an existing schema without requiring changes to that schema, such as by elaborating some previously simple aspect of the schema. Sometimes the existing schema is modified in subtle or not-so-subtle ways, as when it is expanded to cover whole new domains. Occasionally, new information requires a basic restructuring: a new schema that can organize the new and old information (see Anderson, 1984, pp. 418–419).

Recent work in cognitive neuroscience suggests that the brain plays an active role in managing and maintaining schemas (Raischle, 2009). The cerebral cortex engages in ongoing, spontaneous, and self-organizing network activity through which memories are consolidated, reconsolidated, and the efficiency of processing improved (Buzsáki, 2006; Nader, 2009). When a schema is retrieved into working memory, it must be reconsolidated through making new proteins in order to remain a memory. This may be one way in which schemas change over time, since, as LeDoux (2002) points out, the brain that reconstitutes the memory is different from the one that initially formed it. You can never step into the same river twice, nor can you regain the brain you had in the past in order to re-think quite the same thought.



Connectionist theories of cognition, discussed above, provide an elegant model of how schemas respond to new inputs to the brain. In these models, schemas are represented as the patterns of connectivity among the neural units that receive and interpret environmental inputs. When new configurations of stimuli do not match up with pre-existing structures, schemas must be reconstituted in new ways to permit interpretation. If the new configurations recur consistently enough, the default patterns of connectivity in the brain will change as well (Strauss & Quinn, 1997). These processes may produce schema integration as the schemas co-evolve with life-experience, but they can also lead to the differentiation and reorganization of schemas.

### **The Social Life of Schemas**

A perhaps underappreciated aspect of evolution is the co-evolution of human anatomy and behavior, critically including sociality (see discussion in Kaplan & Robson, 2002). Larger brain size requires birth at an earlier stage of development and thus longer periods of post-natal dependence. Post-natal brain development allows for long periods of training and for the acquisition of complex schema. Language development expanded the store of knowledge that could be transmitted, further increasing the survival value of large brains.

An area of immense survival value is sociability, or the ability to communicate and to work co-operatively. Human brains and human culture have co-evolved so as to facilitate communication and co-operation (see Enfield & Levinson, 2006). In our conceptualization, this process is characterized by innate capabilities (that is, materials of a particular kind), particularly including the ability and disposition to learn schemas that facilitate effective interaction. Humans crave interaction, and have hardware to facilitate it. According to Fiske (2004), humans are motivated in a core way to understand our environment, and especially the people in it; as social beings, we are highly sensitive to rewards and negativity in social interactions and we prefer to develop meanings that are shared with others. Levinson (in Enfield & Levinson, 2006) calls this the human “interaction engine”, consisting of species-wide motivations, cooperative tendencies, multimodal communication systems, and psychological endowments.

These endowments are arguably what Goleman calls “social intelligence.” Arguing that the need to navigate the social world has been a critical driver of brain structure, Goleman posits that:

[S]ocial intelligence was the primordial talent of the human brain, reflected in our out-size cortex, and that what we think of as (scholastic) “intelligence” piggybacked on neural systems used for getting along in a complex group. Those who would say that social intelligence amounts to little more than general intelligence applied to social situations might do better to reason the other way around: to consider that general intelligence is merely a derivative of social intelligence, albeit one our culture has come to value highly. (2006, p. 334)

Further, Goleman argues that we are “wired” to be social by a variety of innate mechanisms. One of the most basic of these are “mirror neurons”, which reflexively



cause us to smile when greeted by a smile, for instance. This smile, in turn, primes us for a particular interaction and can even generate visceral sensations that further predispose an interaction to unfold in a particular way (see Chartrand & Bargh, 1999). Goleman proposes that: “the neurons for mimicry are at play whenever we sense another person’s state of mind and resonate with their feelings. This interbrain linkage makes bodies move in tandem, thoughts go down the same roads, and emotions run along the same lines. As mirror neurons bridge brains, they create a tacit duet that opens the way for subtle but powerful transactions” (Goleman, 2006, p. 43). Mechanisms like mirror neurons allow individuals to be primed to respond in expected ways—that is to identify the appropriate schema for interaction. Because emotional expressions on other human faces are powerful emotional stimuli (LeDoux, 2002), interpersonal interaction can also facilitate learning.

The micro-processes of interaction help to produce schemas that are “in the world”—they exist beyond the minds of individuals and are part of the shared environment, particularly in highly integrated social networks. Affect Control Theory (Heise, 1977; Ridgeway, 2006) suggests that even when individuals enter an interaction with divergent schemas, their interaction will tend to produce convergence, because convergence makes interacting rewarding. This process can feed back to modify the schemas as they are held by the participants.

There is another, equally fundamental, reason that schemas become shared among members of a social group. We learn schemas through our experience in the world, and group members tend to experience similar worlds. In TCA, materials, as the observable instantiations of schemas, are in the world and structured in ways that give them enduring influence. These materials can send priming signals in the same way that neural mirrors do for interpersonal interactions; they carry, teach, and reinforce schemas.

Cognitive anthropologists have made significant advances in linking schema theory to shared culture. Drawing on insights from connectionist models of learning and construal, Strauss and Quinn (1997) argue that the shared, coherent, and enduring features of culture emerge from the stability and commonality of experience in the world. In other words, we learn common schemas because we inhabit similar environments. In *Geography of Thought*, Nisbett (2003, p. xx) illustrates this tendency for common experience to produce common ways of thinking by contrasting the distinct ways of thinking that characterize the East and West. These ways of thinking, “include profoundly different social relations, views about the nature of the world, and characteristic thought processes. Each of these orientations . . . is a self-reinforcing homeostatic system. The social practices promote the world views; the world views dictate the appropriate thought processes; and the thought processes both justify the world views and support the social practices.”

Nisbett’s own work (see e.g. Varnum, Grossmann, Kitayama, & Nisbett, 2010) points to a somewhat less coherent and stable model, for example by recognizing variations in thought patterns within cultures over time and across subgroups. Culture also has centripetal tendencies, the capacity to change and to accommodate variable and sometimes contradictory meanings. Individual variations in the

organization and processing of schemas can contribute to cultural change through behaviors that instantiate new schemas (Strauss & Quinn, 1997).

In this section we have outlined the ways that research in some branches of psychology, cognitive- and neuroscience, linguistics and anthropology coalesce around the point that schemas are central to human perception and action. Schemas have their basis in the architecture of the brain, the human disposition for abstraction and redescription, and the “interaction engine” of human sociality. But they have their life in interaction with the world, or more specifically, in materials. It is to research on materials that we now turn.

### ***Materials: Actualized in the World***

We use the term “materials” to refer to any perceptible thing that instantiates one or more schemas. Although materials are not necessarily physical objects, they always have some perceivable form, be it tangible, visual, or auditory: they include for example artifacts, rituals, performances, and institutions. In his theory of structure, William Sewell follows Anthony Giddens’ usage, writing “resources” where we use “materials.” In our adoption of his approach, we changed the word for this concept because the term “resources” was so often misunderstood when we presented the TCA. Materials are not necessarily limited, are often not ownable, and they function in close tandem with schema: without a schema, a physical thing is not a material. For all of these reasons, the concept of a material differs from the everyday use of the term “resource,” and we found it necessary to mark the distinction with a distinct term. In this section, we use the term “resources” in the everyday, non-Sewellian sense of relatively inert limited goods that can be deployed to achieve a variety of ends and the term “material things” as a general term when we are referring to objects that might alternatively be described as resources, capital, material culture or materials, depending on the theoretical framework.

Most social demographic approaches to fertility and family consider the role of economic resources in shaping behavior. The TCA builds on this widespread approach by integrating insights from anthropology and cultural sociology about how “value” works and is incorporated into objects. We argue that materials are not neutral means to achieve desired ends, but rather they embody schemas; materials therefore shape behavior *both* by serving as constraints or incentives and by inculcating and reinforcing particular values, meanings, and habits of mind. In addition, we take seriously the observation that the value of a material depends on its relative position in a network of other materials and related schemas. That is, we cannot assume that something—whether education or advertising, marriage or monetary incentive—will have the same effect on reproductive practices across contexts, because what a material means, indeed what that material *is*, depends on the alternatives against which it is compared.

Although analytically distinct from them, “material” in the TCA clearly has much in common with other concepts in the literature, including resources, capital,

material culture, value, and economic constraints. Unlike for schema, however, for material there is not yet a coherent “jumping together” of concepts and evidence from a range of sciences. Although certain terms, particularly “capital,” are used across the social sciences, they often have distinctly different meanings depending on the literature in which they are embedded. Cultural capital in the writings of Bourdieu, for example, functions in a profoundly different way than does capital in Marx. Nonetheless, there is some consensus that matters for our purposes.

### **Materials Enable and Influence Behavior**

In most of social and family demography, material things are thought of as resources in the everyday sense. An extensive literature explores how resources, particularly financial ones, can influence family and fertility choices by posing constraints or altering incentives (e.g. Arnstein, 2003; Calvès, 1999; Hadeishi, 2003; Handa, 2000; Lindstom and Saucedo, 2002). Indeed, many of the classic papers on demographic transition treat falling fertility as the product—direct or indirect—of changing material conditions through economic development (especially Davis, 1963; Notestein, 1945).

Outside of family demography, sociologists and anthropologists have examined how other kinds of materials—including artifacts, rituals, and institutions—are deployed as resources to advance lines of action. Nearly all of these studies are ethnographic, yet they hold exceptional promise for understanding contemporary partnering and parenting. For example, Constable (2003) and Brennan (2004) examine how women in poor countries make use of the Internet, DHL, global sex tourism, and other materials to find husbands and improve their lot. Bledsoe (1990a, 1990b) has argued that child fosterage is used strategically in Sierra Leone; more recently, she has argued that women deploy their youth and physical health in a similar way (2002; Bledsoe, Banja, & Hill, 1998). There is thus broad consensus that the distribution of material things matters for parenting and partnering outcomes because material things serve as resources, providing people with limited means that may be applied to alternate ends, including familial ones (see for example Bulatao & Casterline, 2001).

Materials also shape behavior without the mediation of schemas, by making some courses of action easy and others hard. For example, in the US, a number of materials encourage families of two (rather than one or three children). These materials are diverse, and none alone is sufficient to induce parents to choose to have two; together, however, they make two the easiest path to follow. Sedans can take two carseats; for middle-class families, having more children entails buying a minivan or full-size SUV. School districts with lotteries often reserve spots for younger siblings; thus, if you have one child in a good school, a second is highly likely to get a spot. Many employers offer parental leave for two births, but not more. Three bedroom homes are far more numerous than 4 bedroom ones in most housing markets. And so on.

The examples in the previous paragraph are clearly replete with schemas, including that of the two-child family itself. This points to the third way that materials

shape behavior: they reinforce certain schemas and undermine others, making some paths feel intuitively self-evident. The ways that materials serve as reservoirs of meaning that reinforce certain schemas has been extensively addressed in archaeology for half a century, as we will see next.

### **Materials Instantiate Meanings or Values**

A central tenet in contemporary archaeology is that man-made things inevitably instantiate meanings or values, even when made by people who intend for them to be strictly utilitarian: thus the term “material culture” (see Conkey, 1989). In one standard archaeological definition of the term, material culture is “not culture but its product. Culture is socially transmitted rules for behavior, ways of thinking about and doing things. . . . Material culture is . . . that sector of our physical environment that we modify through culturally determined behavior” (Deetz, 1977, p. 35). Although Deetz’ view of culture as a relatively coherent force that determines behavior is far from our own, Deetz’ definition of material culture could almost as well be applied to “materials” as used in the TCA.

It is not only in archaeology, but also in anthropology more generally that objects are recognized as carriers of value—that is, tangible forms of meaning with trajectories that matter. From Malinowski’s classic analysis of the Kula (1922), through Mauss’ discussion of the gift (1967), to recent work on currency, artifacts, and markets (Guyer, 2004; Maurer, 2005; Miyazaki, 2003), anthropologists have emphasized that all kinds of “things” are imbued with rich cultural schema, and that they carry those schema with them as they move through the world (see discussions in Appadurai, 1986; Myers, 2001). Perhaps most striking is the work on currency itself, the medium most explicitly intended to be value-neutral, exchangeable for anything, and without content: a strictly arbitrary medium of exchange. Yet, this is rarely the case. People treat money from different sources differently, they associate specific kinds of meaning with specific forms of money (like the Susan B. Anthony dollar), and they develop attachments to currencies, and even to their physical forms (Guyer, 2004; Maurer, 2005; Zelizer, 1994a). Following on this large and long-standing literature, we emphasize that materials are saturated with the schemas—explicit and implicit—of their makers and users.

### **Value is Relational**

Materials are things that instantiate value. “Value” has at least three cognate meanings. In semiotics, signs have value which depends on their location in the system of signification, that is, by its opposition to other members of its paradigmatic set (Grice, 1991; Saussure, 1967). In neoclassical economics, the value of a commodity is defined by what it could be exchanged for: its price (see Debreu, 1959). And in anthropology and sociology, a value is a principle that members of a specific group or culture hold in esteem and deem worthy of respect and adherence (see Péristiany, 1966). These three usages share the notion that value is relational—that what something means or is worth depends on its location in a broader system and

its opposition to specific other things. This interrelation of economic, semiotic, and cultural meanings of value has drawn the attention of Graeber (2001), Guyer (1995), Zelizer (1994a, 1994b), and others, but has not yet influenced how social demographers think about material objects or their relationship to family behaviors. For the TCA, however, it is a critical point. What materials are—or what they can be used for—depends on their location in a structure of related schemas and materials. Whether women’s labor force participation is associated with higher or lower fertility, for example, depends in part on what women’s work means, how it relates to men’s work, and what other kinds of resources women and couples have (see Rindfuss & Morgan, 2003).

## Structure

“Structure” is a fundamental concept in both sociology and anthropology, and is so pervasive that it would be almost impossible to delineate all of its uses and meanings. In a general sense, “structure” refers to durable forms of organization, symbolic systems, patterns of behavior, or systems of social relations (see for example Fortes, 1970; Levi-Strauss, 1969; Parsons, 1949; Radcliffe-Brown, 1932; Sahlins, 2000; Turner, 1969). In the TCA, structures are the durable products of the interplay of schema and materials over time. They impinge on and shape human action in multiple ways, and are usually resistant, although not impervious, to change. *Grosso modo*, this perspective is widely shared in the social sciences. At a more fine-grained level, considerable disagreement remains regarding the degree and source of the stability of structure, the relative importance of material versus schematic elements of structure, and the degree to which structure influences, constrains, or even determines behavior. The last two of these disagreements are of particular interest to us here. They are usually called the “structure-culture debate” and the “structure-agency debate”. We consider each in turn.

### *Structure Versus Culture*

When scholars in demography, political science, or sociology contrast structure with culture, they are using the term “structure” to refer to economic conditions and “culture” to refer to systems of values, meaning, or symbols (for recent examples, see Freitag, 2010; Pinto & Coltrane, 2009; Vaisey, 2009; Wilson, 2010). This debate is thus commensurate with debates about “economics versus culture”, “development versus values” and—in demography specifically—even “development versus diffusion.” “Structure” as used in this debate corresponds to a subset of what we call materials, and “culture” corresponds (roughly) to what we call schemas. Notice also that in other literatures, the term “culture” is used in as wide a range of ways as is “structure”, most of which are not strictly virtual. Kroeber and Kluckhohn (1952) were able to identify 164 different meanings for “culture” and in the subsequent

half century the number of meanings has significantly increased (see for example Hammel, 1990; Geertz, 1973; Rosaldo, 1993; Williams, 1958).

Through debates over the causes and mechanisms of demographic transition, “structure versus culture” became one of the largest dimensions of disagreement in twentieth century demography. Does fertility fall because of economic advancement (or, more recently, retrenchment)? Or does fertility fall because people acquire (for example, through diffusion), new ideas or values?<sup>1</sup> Literally hundreds of papers have taken up this question over the past 50 years, some taking a strong position in arguing that only economics or only diffusion accounts for change, others taking a more nuanced, middle position (examples include: Cleland & Wilson, 1987; Coale, 1973; Hammel, 1995; Hotz, Klerman, & Willis, 1997; Lesthaeghe & van de Kaa, 1986; Mason, 1997; Pollak & Watkins, 1993; Schultz, 1997; van de Walle, 1992; Watkins, 1990, 2000). The debate continues because both positions have empirical support. Both sides have empirical support, we argue, because materials and schemas are always interrelated, and together constitute “structure”. Fertility usually responds both to changes in materials—including changes in labor productivity or the dominant mode of production—and to changes in schemas; what is more, changes in either materials or schemas usually lead to changes in the other. What we call structures cannot be contrasted with culture, either as that term is narrowly used in the structure-culture debates or in the broader and more anthropological sense, since structures are the product of schemas and materials interacting over time.

### Structure Versus Agency

“Structure” is also used in the social science literature in contrast with “agency.” At issue here is the strength of social constraints: how much can individuals innovate in their courses of action? And how much do they, empirically, do so? (see Emirbayer & Miche, 1998; Giddens, 1979; Moore, 1975; Scott, 1985; Willis, 1977 for significant interventions in this debate). This use of the term structure is much closer to our own. As in the TCA, structure is generally portrayed in these debates as a complex, multifaceted patterning of social life.

The agency-structure debate in anthropology and sociology has largely been separate from research in psychology and cognitive science, but the potential relationships are important. Structures shape people’s thoughts, feelings, and motivations, all of which play a role in action. Human behavior arises out of a fluid interaction between controlled and automatic processes, and between cognitive and affective systems (See Dolan, 2002; Eich et al., 2000). As LeDoux (2002, p. 258) puts it, “the brain is not just a thinking device, it is an integrated system that includes, in the broadest possible terms, synaptic networks devoted to cognitive, emotional, and motivational functions. More important, it involves interactions between networks involved in different aspects of mental life”. When people act, then, their

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<sup>1</sup>Most readers will be familiar with a third alternative: fertility falls because contraception or abortion becomes available (see Potts, 1997).

actions typically reflect the operation of numerous interconnected neural systems; the emergent outcomes of their thoughts, feelings, and motivations.

In anthropology and sociology, “agency” refers to the “capacity for autonomous social action”, or the “ability to operate independently of the determining constraints of social structure” (Calhoun, 2002, p. 7, see also Emirbayer & Mische, 1998). A second, less common, usage equates “agency” with the ability to resist powerful actors or institutions, implicitly making agency salient only for the weak and disenfranchised (e.g. Scott, 1985; Willis, 1977). Both usages center on the power of institutions or social structures to shape action, and the degree to which people can act outside of it. Note in particular that both definitions focus on the *capacity* of the actor to act in certain ways, which are observed when the actor does indeed act. The term “agency” thus refers both to an attribute of persons (a capacity for autonomous action), and an attribute of certain actions (being autonomous). This implies that only some actions are “agentic”.

The anthropological and sociological focus on agency arose in opposition to the emphasis on social structure and function in those disciplines in the middle of the twentieth century (Levi-Strauss, 1969; Parsons, 1949; Radcliffe-Browne, 1932). Yet drawing the line between actions that result from the influence of social structure and those that result from agency is problematic. Sewell’s theoretical work was one proposal to resolve this debate, arguing essentially that agency and structure are two sides of a single coin. For Sewell, there is no action that is wholly free of structure—indeed, any behavior that is not made meaningful through some set of schemas and deployed some set of recognizable materials would not be “action” at all—and at the same time, structure is built up out of sometimes innovative, agentitive actions. Roughly similar arguments are found in Giddens (1979), Bourdieu (1977, 1990), and Berger and Luckmann (1966).

Most contemporary work on agency in anthropology focuses on the relationships between agency and subjectivity, emotion, and politics (e.g. Keane, 2007; Mahmood, 2005; Miyazaki, 2000; Moore, 2005), arguing that the classic liberal idea of the self as natural, self-contained, coherent and autonomous is a product of liberalism, and therefore of the west at a particular historical moment. Although these authors present quite different analyses, their views of agency and subjectivity converge around four points of significance to the TCA. First, and in contrast to theories of reasoned action or planned behavior, attitudes and norms are not necessarily prior to intentions, or even to action. The inculcation of intuitions, whether intentionally or as an unintended consequence of structures, plays a central role. Second, agentic action can be profoundly emotional; emotions may serve as the motivation, medium, or goal of action. These two points suggest that we need a much richer vision of the subject and of subjectivity than generally used in the social demography of the family. Third, they emphasize the importance of time and life course development to the forms of agency. Finally, contemporary anthropology of agency shows how what appear to be individual choices are shaped and structured by large-scale forces, both material and schematic.

Whereas in anthropology and sociology, agency is contrasted with structure, in psychology, cognitive science, and related fields, the question is the degree to which



intentions and action are free or volitional, as contrasted with instinctual or pre-determined by environmental inputs. Bandura, a leading proponent of agency in psychology, argues that, “the human mind is generative, creative, proactive, and reflective, not just reactive,” and further than “cognitive processes are emergent brain activities that exert determinative influence. Emergent properties differ qualitatively from their constituent elements and therefore are not reducible to them” (2001, p. 4). That is, for Bandura (1977) and Bunge (1977) and others in this school of thought, our experience of agency (“I wanted to do something and therefore I did it”) is real: what explains agentic behavior is the intentional choice to act. Therefore, the connections in our brains produce intentions and actions, but through interactive processes that cannot be reduced to their constituent parts. Wegner (2002) argues for the opposition. Conscious will is an illusion, he asserts, created by our brains in retrospect to make a coherent narrative for ourselves of ourselves, while in fact our actions are determined by physical processes in the brain inaccessible to our understanding (see also Carruthers, 2007).

We are not qualified to adjudicate this debate, which is both empirical and philosophical. What matters for our purposes here are the specific (and limited) ways in which psychologists and cognitive scientists working on the question of agency appear to agree: not all of our actions are agentic under any definition; some are instinctual, habitual, or otherwise unconscious. Those actions that are experienced as agentic are constituted from below through very complex and still imperfectly understood neural functions. And the experience of agency is closely related to the concept of the self. It is to the self and identity that we now turn.

## Identity

Identity is a self-structure, that is, an internal configuration that corresponds to structures in the world. Through identity, schemas about the self are integrated, self-materials are coordinated, and action (as contrasted with mere behavior) is made possible. Identity deserves special attention here for two reasons. First, as a correspondent to structures in the world, identity allows us to demonstrate some of the characteristics of structures: for example, how they emerge through path-dependent processes of the interaction of schemas and materials over time. Indeed, Bandura’s explanation of the self nicely characterizes much of the TCA view about structures: “Although the self is socially constituted, by exercising self-influence human agents operate generatively and proactively, not just reactively, to shape the character of their social systems. . . . People are producers as well as products of social systems” (Bandura, 2001, p. 15). Second, identity is “right-scaled” for many of the questions that social demographers ask. Parenting and partnering are often closely related to people’s senses of who they are in the world; identity is therefore often a highly salient in those conjunctures.

The concept of identity has its roots in the work of George Herbert Mead, (1934), Cooley (1902), James (1890), and Carl Rogers (1947); however, it received



its greatest attention after the seminal work of Erik Erikson (1959). Erickson conceptualized “ego identity” as the awareness of, and confidence in, the “selfsameness and continuity” of self and confidence in the ability to safeguard the sameness and continuity of one’s meaning for others. Erikson’s concept was echoed many years later by Giddens (1991, p. 54), who asserted “A person’s identity is not to be found in behavior, nor—important though this is—in the reactions of others, but in *the capacity to keep a particular narrative going.*” Bourdieu’s (1977) “habitus”—a system of durable and transposable dispositions, or schemes of perception, thought, and action—is also related to the concept of identity. Over the years vast literatures in psychology, sociology, and anthropology have examined the concept and its cousin, the concept of self. While differing in many respects, these literatures articulate themes important to TCA.

### ***Identity Organizes Diverse Schemas About the Self***

Identity is generally used to refer not to an undifferentiated entity within the psyche but to a set of diverse schemas that are organized in relation to each other. Identity schemas are generally viewed as high-order abstractions or “narratives” that integrate and represent simpler schemas about the self that are in turn developed on the basis of experience and perception (Côté & Levine, 2002; McAdams, 2001). Burke (2004) characterizes the content of identity schemas as “meanings,” suggesting schemas that are inherently relational. Freese and Burke (1994) view identity as comprising not only symbolic or linguistic representations of the self, but also experiential meanings that have not been translated into symbolic form.

The content of identity is complex, with elements representing multiple domains of social experience and personality. Scholars working in the tradition of symbolic interactionism suggest that individuals may have as many identities as they have social relationships, or distinct networks in which they occupy positions and play roles (James, 1890; Stryker & Burke, 2000; Stryker & Serpe, 1994; McCall & Simmons, 1978). A similar theme emerges from work in anthropology (Strauss, 1992; Holland, Lachicotte, Skinner, & Cain, 1998): the schemas that individuals develop about themselves—like those that they develop about the world around them—are many, varied, and often contradictory. We use the terms identity and identities interchangeably to refer to this complex set of internal structures.

Some identity theorists see these multiple selves as organized in some way to achieve both simplification and (relative) coherence. Many theorists postulate hierarchical arrangements in which identities are ordered in terms of salience (Stryker & Serpe, 1994); prominence (McCall & Simmons, 1978), or importance to the person (Rosenberg, 1979). McAdams (2001) argues that people achieve coherence in identity in part through developing narrative life stories. Hitlin (2003) sees particular elements of identity—the values that comprise personal identity—as providing

the basis for felt cohesion among social identities. How this “structuring” might occur in the brain is not yet well understood. “Connectionist” theories suggest that meanings are not represented in the brain as explicit generalizations but rather as links of different strengths among co-occurring units of experience (Strauss, 1992), suggesting that identity could be highly reactive to changing circumstances. Many theorists (e.g., Smith-Lovin, 2003) downplay the extent to which multiple identities are actually reconciled or integrated.

Côté and Levine (2002) point to three strands that comprise identity in Erikson’s work. One strand consists of a basic sense of sameness of the self with itself, and is a basic foundation of ego identity. But identity also incorporates the personal identity referring to a collection of characteristics and behavioral repertoires that differentiate the self from others (termed “personal identity” by Côté and Levine), and the roles an individual occupies within a community (social identity). Of these, social identity is most fully commensurate with other (non-internal) structures, in that it integrates materials and schemas into a structured whole. In recent years, much work on social identity has emphasized *identification* with a social category or group (e.g., male, gay, black, evangelical) rather than *roles*, such as worker, father, or church warden (Howard, 2000).

We mentioned in the previous chapter that the degree to which schemas are emotion-laden can vary. This is also true of the schemas which comprise identity: they have both cognitive and affective dimensions (Burke, 2004). Affective dimensions are most explicitly addressed in Affect Control Theory (Heise, 1977; Ridgeway & Smith-Lovin, 1994), which ties action directly to the affective meanings of objects, behaviors, and social identities. Attention to affect has been implicit in much other work, for example in the treatment of concepts such as “commitment” (e.g., Burke & Reitzes, 1991; Stryker, 1987). Stryker (2004) posits that identities associated with intense positive or negative affect are higher in salience, and that meanings associated with the experience of affect provide powerful signals to the self that contribute to the formation and modification of identity. In cognitive anthropology, the affective content of cultural schemas is also given importance (Strauss, 1992).

A final, and crucial, point relates to the social dimension inherent in identity. Although we situate identity within the person, its origins and development are profoundly social (See Levine & Resnick, 1993). The schemas that comprise identity and the ways in which these are organized are to a great extent culturally shared and learned (Burke, 2004; Holland et al., 1998; McAdams, 2001; Ridgeway & Smith-Lovin, 1994; Stryker, 1987). The raw material for identity formation derives from experience in the world: perceptions of self in interaction with others, comparisons with others, self as reflected back by others, learned schemas about the social meanings of a group or role, and even schemas about the process of “finding oneself.” Identity is brought into existence and maintained through interpersonal interaction (Grotevant, 1987; Côté & Levine, 2002; Ridgeway & Smith-Lovin, 1994; Smith-Lovin, 2003; Holland et al., 1998).

## ***Identity is Formed by Early Adulthood But Evolves Throughout Life***

Schemas about the self and one's relation to the world are acquired throughout life but they are not organized into the higher-order abstractions we call identity until late adolescence or early adulthood (Erikson, 1959). Cognitive development shapes the development of identity (Harter, 1999). Self-representations develop from infancy on, but these take different forms as development proceeds. Even as late as mid-adolescence, the cognitive resources for reconciling conflicting views of the self are not yet in place. According to McAdams (2001, 2004), the dominant themes of adult life stories may reflect influences from the earliest years of life.

The importance of adolescence for consolidating and organizing the elements of a self-image or self-story into a coherent whole is emphasized in the psychological literature, and the foundation laid during this critical period is generally seen as persisting across the life course. However, some psychologists (e.g., Grotevant, 1987; Côté & Levine, 2002) view identity formation as a life-long process, as do many sociologists (Burke, 1991, 2004; Demo, 1992) and anthropologists (Holland et al., 1998). While ego-identity and personal aspects of identity may be relatively stable across the life course, social identities are not (Burke, 2004). Because social identities are closely tied to positions in the social structure and interactions with others, the ebb and flow of adult roles, relationships, and resources stimulate change (Serpe, 1987). Still, the development of identity is a path-dependent process. As Mischel (1969) points out, strong response patterns adopted by an individual at one point in time can crowd out the possibility of developing others. Self-conceptions that are developed as a result of past history are available to shape and facilitate the development of new identities (Holland et al., 1998).

Most accounts see identity formation and maintenance as influenced by the interplay of endowments, environmental constraints and opportunities, and personal agency. Erikson defines success in the identity stage as “the alignment of the individual's *basic drives* with his *endowment* and his *opportunities*” (1959, p. 94, italics in original). Endowments and opportunities, of course, are materials. Thus again we see how identity works like other structures, arising out of the interplay of material and virtual elements. Although most would agree that the process is not fully available to consciousness, conscious choice or agency plays an important role (McAdams, 2001; Côté & Levine, 2002). Marcia's (1966) “identity status” paradigm elaborates the process of identity formation as a function of the individual's exploration of alternative goals, roles, and values, and the choices and commitments that he or she makes regarding personal and social traits. This emphasis on exploration and choice has been attributed to the vast array of occupations, lifestyles, and roles open to individuals in contemporary western societies (Côté & Levine, 2002). Holland and her colleagues (1998, p. 281) emphasize another kind of agency that contributes to identity—the use of self-directed symbols and signs to “. . . imagine themselves in worlds that may yet be scarcely realized, and . . . to manage their own behavior through signs directed at themselves.”

Structure has an enduring influence on identity formation and identity processes. In Affect Control Theory, cultural meanings of identities are learned during socialization through observation of emotional expressions and behaviors during interactions, but ultimately derive from institutional structures that affect control of material resources and ritual action among the people in the child's world (Ridgeway & Smith-Lovin, 1994). Social structure influences the roles, networks, and relationships that individuals have throughout life, and through these, the social interactions that help to shape identity (Stryker & Serpe, 1982). Identities proliferate to the extent that people interact with a wide variety of others who differ from them (Smith-Lovin, 2003), and become more salient to the extent that people occupy densely connected positions related to the identity (Stryker & Burke, 2000).

However, identity cannot be inferred directly from social locations, or even from the array of cultural resources associated with social location. Structure influences, but rarely determines, the social interactions that give rise to identity. Further, the ability of participants to draw on social and cultural resources to direct their own and others' actions, and to filter the experience of interactions through symbolic representations, mediates, and simultaneously modifies, the impact of structure on identity (Holland et al., 1998). It is not only what people are exposed to, but how those experiences are interpreted and stored, that is consequential (Strauss, 1992).

### *Identity Shapes and Enables Action*

Identity is an internal structure that filters the experience and interpretation of the world and provides the motivation and capacity to respond in meaningful ways. Identity can facilitate actions that reproduce external structures through its internalization of social roles and their meanings. However, it can also enable people to exert agency, by mediating their responses to the environment and their control over their own behavior. People engage the flow of activities, situations, and experiences that make up their environments with "meaningful intent" (Holland et al., 1998); we view identity as the launching pad, the foundation, for that intent.

Identity motivates behaviors that are consistent with the identity in meaning (Burke & Reitzes, 1981). The symbolic interactionist literature on identity specifies several ways in which this occurs. First, identity influences what situations an individual experiences. Evidence suggests that people actively seek out situations that will enable them to enact salient identities (Serpe, 1987; Stryker, 1987). Further, competition among multiple identities may affect people's participation in groups, for example, when the role expectations associated with that group conflict with other identities held by the person (Stryker & Burke, 2000).

Second, identity influences the construal of conjunctures. When entering a situation, people are attuned to cues related to salient identities and are more likely to construe the situation in relation to these cues. The concept of "salience" is used in two senses in this literature. In one sense, salience is used to refer to the probability of an identity being invoked across a variety of situations (Stryker &

Burke, 2000); in another, salience is tied to the relevance of the identity to the immediate circumstances (McCall & Simmons, 1978). The set of “situated identities” (Alexander & Wiley, 1981) through which situations are cued by both internal factors, such as the prominence and long-term salience of identities for participants and their needs and goals on entering the interaction, and by external factors, including the institutional context, relationships to other participants, and opportunities for profitable enactment of specific identities (McCall & Simmons, 1978; Ridgeway & Smith-Lovin, 1994).

Third, once the participants in an interaction have “read” the situation, including the meanings of relevant self-identities and the identities of others, subsequent action is negotiated to bring these meanings into line. Although specific conceptualizations vary slightly, numerous theories within social psychology, including Affect Control Theory (Heise, 1977; Ridgeway & Smith-Lovin, 1994), Identity Theory (Stryker, 1994), Identity Control Theory (Burke & Reitzes, 1981), and Situated Identity Theory (Alexander & Wiley, 1981) link identity to interaction in this way. This negotiation is motivated by the positive rewards that result from preserving meanings (our views of self and others) and maintaining identity (Ridgeway & Smith-Lovin, 1994; Burke, 2004) and the negative affect caused by the disruption of identity-maintaining processes (Burke, 1991). The affective content of identities is important in influencing behavior not only in Affect Control Theory but in other literatures as well. Behavior-willingness models (Thornton, Gibbons, & Gerrard, 2002) posit that positive prototypes (schemas of the kind of person that engages in a certain behavior) serve as motivators, whereas negative prototypes reduce the willingness to engage in the behaviors. In cognitive anthropology, knowing the feelings that individuals associate with different cultural models (and hence with identities drawn from those models) is crucial in order to understand what motivates them (Strauss, 1992).

We will return to these last two roles of identity—in shaping construal and motivating action—later in the chapter. But before we do that, we have to consider how structures get actualized in specific times and places, such that they can become susceptible to construal and pertinent to action. The short-term configurations of structure that work in this way are called conjunctures.

## Conjuncture

Structures have a certain abstraction. Although it feels plausible to say that the public health system matters for reproductive health outcomes for poor women, for example, it is not immediately clear what it means concretely. In a specific case, however—say, a diagnosis of gestational diabetes—we can start to see how public health systems are mobilized, how they make certain actions easy and others hard, or how they cast certain kinds of people as virtuous and others as undeserving. Schemas about the virtue of self-control and medical “compliance”; materials like sugar testing of blood spots, ultrasound, and state treatment mandates: when we move from the structure to its instantiation in relation to a specific event or action,

its effects become much clearer, We live our lives in concrete specifics, and the concept of the conjuncture allows us to focus attention on the specificity of lived experiences.

In TCA, conjunctures are temporary, historically contingent configurations of structure in which action can occur that reinforces or alters structure. This concept has a long history, including analyses at the very micro level of face-to-face interaction and the more macro level of historical change. Our use of the term “conjuncture” comes directly from Sewell (2005, pp. 220–223), but conceptually also relies heavily on Bourdieu (1977), who uses the term to express the relatively short-term conditions which manifest social structure and serve as the matrix for social action:

Practices can be accounted for only by relating the objective *structure* defining the social conditions of the production of the habitus which engendered them to the conditions in which this habitus is operating, that is, to the *conjuncture* which, short of a radical transformation, represents a particular state of this structure (Bourdieu, 1977, p. 78).

For Bourdieu, the conjuncture is the effective context of action; it is the site in which *habitus* is made and its consequences enacted. Sahlins similarly sees conjunctures as intermediate between social structure and individual events. What he calls the “structure of the conjuncture” is “the practical realization of the cultural categories in a specific historical context, as expressed in the interested action of the historical agents” (1985, p. xiv). The ideas are obviously similar, although Sahlins’ usage seems to imply that the conjuncture’s outcomes are more heavily determined, the range of possible action narrower. In the TCA, we emphasize the intersection of structured expectations with uncertain futures. We use the word “conjuncture” to emphasize the dual character of the contexts of action: at once manifestations of recurring systematicity—that is, structure—and of unique possibility.

We use the term conjuncture because (as in Sewell, Bourdieu, and Sahlins), it refers to exactly the concept we need. However, this term is far less common than its cousin, “context.” Context, like structure or culture, is used in myriad ways by different authors. Large literatures—from psychology, sociology, linguistics, anthropology, demography, and beyond—have shown that “context matters” for a wide range of behaviors. Like “conjuncture,” “context” generally refers to the circumstances, background, or conditions in which a particular event occurs. “Conjuncture” is more specific, however, since it refers to those specific *configurations of structure* that are “*in play*” in relation to the given action or event. In other words, conjunctures can be described and explained through an analysis of the structures that produce them and are relevant to the behavioral event under analysis. Although conjunctures are more specifically defined than contexts, it is important to review what has been written about context and its effects on behavioral outcomes.

### ***Large Scale Contexts***

In demography and quantitative sociology, “context” usually refers to some aggregate—such as the census tract, ethnic group, or family—in which people

are located and which might account for their behavior. Contexts of this kind are large-scale and durable, with greater social and historical scope than any localized act. These contexts may vary from the family and neighborhood to the state to the culture or language group (fertility-related examples include Billy, Brewster, & Grady, 1994; Crane, 1991; Ezeh, 1997; Hollos & Larsen, 1997; Mason & Smith, 2000; McNicoll, 1980; Yabiku, 2004). When social demographers argue that “context matters,” it is usually in the sense that these large-scale aggregates or structures have implications for individual behaviors.

One of the challenges facing quantitative work on macro-context is measurement and classification. Macro-contexts must be clearly delineated in order to be useful in quantitative work. Often, contexts in this sense are treated as undifferentiated “boxes” (see Hammel, 1990), where everyone in the box shares a context and everyone outside it has a different one. But where are the borders of a context? How many contexts are there in say, Tennessee, the city of Chicago, or France? This problem was addressed at length in critiques of the Human Research Area Files in anthropology (see e.g. Eggan, 1954), but without a resolution. Another challenge concerns the trade-off between comparability and specificity: evaluating the effect of context requires having comparable data on different contexts; however, strictly comparable data may be inappropriate—and therefore misleading—about any given context (Szreter et al., 2004; see Hammel & Laslett, 1974 for a related discussion). One attempt to address both challenges is the focus on neighborhood effects, often operationalized as census tract (see Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Browning & Burrington, 2006; Crane, 1991; Hipp, 2007; Jackson & Mare, 2007; Roche et al., 2005; South & Crowder, 1999).

In addition to these quantitative analyses, ethnographic and comparative-historical studies repeatedly show the significance of macro-context for demographically-relevant behavior, particularly including parenting and partnering (for example Kreager, 1982; Bledsoe & Pison, 1994; Lockwood, 1995; Fisher, 2006; Krause, 2005; Paxson, 2004; Hirsch, 2003; Diamant, 2000; Collier, 1997). Although the growth of anthropological demography since the mid-1990s has increased the quantity of this kind of work, there remains a large unrealized potential for richer understanding of fertility using these approaches.

### *Conjuncture, Situation, and Setting*

Whereas demographers have mostly focused on large-scale context, scholars from psychology, sociology, and linguistic anthropology have examined how the immediate micro context of action influences its outcome. In psychology, Mischel and others (e.g., 1969; Ross & Nisbett, 1991) have argued that characteristics of the situation, rather than individual personality, account for behavior. Mischel and Shoda (1995), for example, demonstrate that people with similar average levels of behavior differ systematically in their reactions to specific types of situations; characteristics of the context, rather than the person, most directly predict outcomes. In sociology, the symbolic interactionists have argued that action is organized by



symbolic meanings derived through the interaction itself, particularly focusing on the micro-level of face-to-face interaction (see Blumer, 1969; Goffman, 1967).

In “The Neglected Situation” (1972) Goffman formulated this micro-level view of context as “situation,” critiquing previous work that had treated context as correlations between macro-level sociological variables. He argued that situations have their own properties that follow from the simple fact of co-presence of two or more people in a given time and place, and that these properties shape how action within them unfolds. This “situation” is minimally structured, logically prior to any utterance or interaction, and entails nothing (object, institution, etc.) other than the co-participants.

Similarly, in sociology Schegloff (1987, p. 208) asserts that face-to-face interaction is the primordial site of sociality, and that meaning is built up through the course of an interaction. Schegloff’s work in conversation analysis (1992, see also Sacks, Schegloff, & Jefferson, 1974) is based in part on the ethnomethodology of Garfinkel (1967, 1972; Garfinkel & Sacks, 1970). Garfinkel argued against the idea that social life is ordered on a large scale; it only appears ordered because social actors make sense of their worlds by selecting certain facts from a social situation that seem to conform to a pattern, and then making sense of these facts in terms of the pattern. New facts are then further understood in terms of the same pattern. Consistent with the view, a significant corpus of work on the psychology of memory supports the idea that schema-consistent information is more readily stored in memory and subsequently recalled (see discussion and citations in Hirt, McDonald, & Markman, 1998, pp. 63–66).

Although much symbolic interactionist work has not addressed the origins of meanings that individuals bring into interactions, Stryker (1980) emphasizes the importance of social structure in shaping these meanings, and Smith-Lovin (2007) goes further to argue that interaction situations themselves are heavily determined by social structure. Similarly, Sacks argued that the relevant micro-context of action includes expectations, shared understanding, and a framework of relevance (On relevance, see also Sperber and Wilson, 1997). To distinguish it from the simple situation, he called this the “setting” (Sacks, 1992, pp. 521–522). Both situation and setting are radial: they extend out from a specific we-here-now and have fuzzy horizons rather than firm boundaries. Setting comes closer to what we intend by the term “conjuncture,” although conjunctures entail a still stronger element of large-scale social order, being historically-specific instantiations of structure. Indeed, TCA builds on the idea that meaning is made and action undertaken in specific, micro-contexts; however, it also argues that these contexts are importantly structured in ways that are invisible from the standpoint of the setting itself.

## Construal

Construal is the standard term in psychology, linguistics, and some branches of anthropology for the process through which people perceive, understand, and interpret the world around them, relying on schemas of different levels of



complexity. Most of the time, processes of construal are experienced as automatic, and its outcomes as self-evident. Occasionally, however, situations do not fit easily into existing schemas, and we have to ask ourselves explicitly “what is going on here?” In the TCA, conjunctures provide the specific enactment of structures at a given time and place; construal is the counterpart to conjunctures: the way that an individual reads a specific conjuncture through available schemas, making action possible. The evidence for construal as a fundamental human activity is overwhelming. Construal matters for perception, as well as for the interpretation of more complex material or situations.

In perception,<sup>2</sup> construal is driven both by the evolved form of brains and by acquired schemas. Biologically determined construal includes the fact that we see an unbroken visual field, despite having blind spots in each eye (Ramachandran, 1992) and our susceptibility to optical illusions, which is based on the Gestalt organization of vision (Kanizsa, 1979). There were presumably strong evolutionary pressures to perceive patterns and respond to them quickly; our brains natively construct positive shapes out of negative space, continuous movement from repeated still images, and depth from converging lines. Humans easily outperform powerful computers in the task of recognizing objects or animals (Zhang, 2010). Perceptual construal is also influenced by learned schemas. Peterson and Gibson (1994) showed that we attend differentially to shapes that we construe as representing things; Palmer (1999) showed that using crosses—as opposed to shapes without specific symbolic meaning—as the corners eliminated subject’s illusory perception of a floating square; Reed and Vinson (1996) showed that the names (rocket versus steeple) given to objects altered subjects’ perceptions of their relative speed. We literally cannot see the world without construing it.

Construal also shapes our experience of the world at more complex levels. We know a lot about the world, and that knowledge shapes the way we think about and remember specific things. That is, we do not remember individual instances of things separately—our brains are not like Memorex tape, with each memory in a specific place. Rather, memories inhere in connections between neurons. They are configurations of neural activity, relying on previous knowledge, and are literally re-membered (put back together) in a new neural event each time we recall them. Intraub and Bodamer (1993) showed that we rescale images when we recall them to include a certain amount of the background scene. Martin and Jones (1998) showed that people remember images from “men working” and “crosswalk” signs differently depending on whether they are right- or left- handed: people are more likely to remember the figures on the signs as acting consistent with their own experience. Martin and Jones (1999) show a similar finding for photographs of the Hale-Bopp comet. Language is powerful in shaping cognition. Carmichael, Hogan, and Walter (1932) showed that people’s memories of abstract line drawings were changed by the terms associated with them. Graesser, Gordon, and Sawyer (1979) showed that

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<sup>2</sup>Many of the examples in the next two paragraphs are drawn from Lawrence Barsalou’s lecture notes, available at: <http://www.psychology.emory.edu/cognition/barsalou/>

people falsely “remember” schema-consistent information as having been presented in recall tasks concerning behavioral scripts. Bransford Johnson (1972) showed that people remembered more of a strange text when they were also given an image that put the text in context.

Cognitive construal occurs through concepts, which may complement, disambiguate, or distort sensory input. Construal shapes higher-order cognition as well, influencing how we relate or respond to things and events. “Construal-level theory” argues that objects, people and events remote in time, place, or salience are construed as more abstract and underspecified. As a result, they are considered in a more general, less affectively laden manner (Trope & Liberman, 2010). Sometimes, this “remote” construal results in more measured and appropriate evaluations. For example, when individuals construe objects abstractly because of their remoteness, they tend to focus on core rather than peripheral properties. In the “heat of the moment”, they do the opposite. In a study conducted by Trope and Liberman (2000), individuals had to evaluate a radio. When they were told that they could purchase the radio only in the distant future, subjects focused on core properties, such as the quality of sound. But when offered the option to purchase the radio immediately, subjects individuals focused on peripheral properties, such as the whether or not the clock was accurate. In other cases, the tendency to think about remote events abstractly gets us in considerable trouble. Who has not agreed to a speaking engagement a year in advance, ignoring the details of travel time, weather delays, and jetlag, only to regret it when reconstructing the same travel commitment as an immediate actuality?

Framing and priming effects, well known to most survey researchers, also arise as the product of construal. Framing and priming both refer to ways that the context in which a subject encounters a word, thing, or choice influence her response. Specifically, priming refers to the fact that unconsciously invoking particular schemas, activating them in memory and making them more accessible, makes them more likely to be used subsequently to construe and respond (Higgins & King, 1981; Wyer & Srull, 1986, 1989). For instance, Nisbett (2003, p. 227) described experiments where Asian students, if “primed” with Western symbols, were more likely to invoke Western problem solving strategies, apply Western categorical rules, or perceive dimensions of the environment stressed in Western culture. Outside of experimental conditions, elements of the lifeworld can serve as primes, “bringing to mind”, often unconsciously, habits of thinking or perceptual and evaluative frames through which subsequent experience is interpreted (see Bargh, Chen, & Burrows, 1996 for a compelling example). Recent work in neuroscience has sought to explain how priming happens. Because working memory is relatively small, the brain must pick out the information inputs that are likely to be most important, and forward them, and stored schemas relevant to them, into consciousness. While the information forwarded to working memory becomes conscious, the process that makes this happen is not. In this process, stimuli that are novel, unexpected, or emotionally tagged tend to be selected over others (Dolan, 2002; Eich et al., 2000; LeDoux, 2002).

Framing likely relies on the similar pathways to priming. Gamson describes a frame as a story line, narrative, or organizing idea (1992, p. 3; Cf. Goffman, 1974). Framing consists of drawing attention to certain aspects of a situation in order to

promote a particular narrative, and with it, a particular interpretation. Framing is thus more explicit than priming, but draws just as much on schemas. Whether abortion is murder or choice; whether gay marriage is like interracial marriage or like bestiality, whether children are central to social adulthood or an option for those who want them: the frame we use to understand things strongly shapes how we respond to it.

Finally, it is through processes of construal that people can act appropriately in a given situation. Linguists and linguistic anthropologists have focused on this more social sense of construal. If you and I have coffee, is this coffee a way to waste time, a casual meeting of colleagues, an opportunity to convey specific information, a way of building solidarity for an upcoming contentious vote, a date, or something else entirely? Our ability to interact smoothly depends on our construals of the situation. Sachiko Ide (1989) has argued that the use of honorific language is not rule-governed, but rather follows a nuanced sense of attunement to what is called for, or discernment: in Japanese, *wakimae*. Hanks (2005) argues that deictic forms (this, that, here, there, now, then, etc.) construe the speaker's relationship to the addressee, and both of their relationships to the objects or people mentioned or described. Since construal is an ongoing process, so too deictic forms shift without changes in the physical relations between things being described ("this child" becomes "that child" because I want to stress my dismay at his behavior). From perception through memory, cognition, judgments, and social attunement, we experience the world and respond to it through schemas and construal.

## From Rational Choice to Conjunctural Action

Social demography is mostly concerned with events that result from sequences of human action in association with other factors. Cohabitation, marriage, sex, pregnancy, contraception, abortion, miscarriage, twinning, adoption, in vitro fertilization: in all of them, human actions matter (albeit it less for twinning and more for adoption). Our core argument in this book is that social demographers should think about human action as emerging out of construal, grounded in schemas and materials, identity and conjunctures. This is a view that makes sense with what we know about the human mind and the social world. It is consistent with theory and findings from across the social, behavioral and brain sciences. But to say that action emerges out of construal, the context of structures, that identity matters, and so on, still does not specify what concrete form action takes. Indeed, that is by design. Our understanding of the science says that humans engage in—are evolved to engage in—different kinds of action in different contexts and for different reasons. Sometimes we do make calculated decisions, in or close to the “deliberative equilibrium” of rational choice. Sometimes we act by instinct. Or habit. Or accident. Or through an overwhelming emotional calling. Sometimes we rely on heuristics or rules of thumb to judge what to do. Sometimes we do nothing. Although in all of these cases, structures, conjuncture, construal and identity are in play, the cases still work differently. For understanding family-relevant behavior, it is critical to

recognize that action has different modalities. Not all behavior is the product of rational decision making, just like not all behavior is the product of crude instinct.

For many years, dominant theoretical models in economics and demography conceptualized behavior as a result of a rational decision-making process in which the costs and benefits of the behavior are weighed. In microeconomic models (e.g., Becker, 1981; Hotz, Klerman, & Willis, 1997), individuals weigh the current and future costs and benefits of potential behaviors and act to optimize their wellbeing (“utility”) over the life-course. Standard approaches in family demography similarly assume that reproductive behavior is the product of family-size intentions that are formulated on the basis of some utility maximization procedure, whereby prospective parents calculate the costs and benefits of children, whether on the basis of intergenerational wealth flows (Caldwell, 1982), a quality-quantity trade-off (Becker, 1981), or a “range of social and psychological factors” (Bulatao & Casterline, 2001, p. 11; see also Mason, 1997).

The standard economic theory of constrained utility maximization is most naturally interpreted either as the result of learning based on consumption experiences, or careful deliberation—a balancing of the costs and benefits of different options. Although economists may privately acknowledge that actual flesh-and-blood human beings often choose without much deliberation, the economic models as written invariably represent decisions in a “deliberative equilibrium,” i.e., that are at a stage where further deliberation, computation, reflection, etc. would not by itself alter the agent’s choice. The variables that enter into the formulation of the decision problem—the preferences, information, and constraints—are precisely the variables that should affect the decision, if the person had unlimited time and computing ability.

The Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) proposes that behavior is the product of “behavioral intentions”, which result from the actor’s attitudes toward the behavior and his “subjective norm,” that is, his perception of others’ attitudes toward the behavior weighted by how strongly he values those others. Bandura (1977, 1982) argued that self-efficacy, or the “belief in one’s capacities to organize and execute the course of action required to manage prospective situations” (1995, p. 2), influences the choices actors make, the effort that they exert, and how they feel about their action and its outcome. The theory of planned behavior (Ajzen, 1991) integrates something very similar to Bandura’s self-efficacy (although Ajzen calls it “perceived behavioral control”) into the Fishbein and Ajzen model. Together, these related models have been enormously productive, and literally thousands of articles and books use—or dispute—one or another variant of Ajzen & Fishbein or Bandura. These ideas have been important in analyses of contraceptive and condom use (e.g. Boyd & Wandersman, 1991; Chan & Fishbein, 1993; Jaccard & Davidson, 1972; Kashima, Gallois, & Mccamish, 1993; White, Terry, & Hogg, 1994) and, less extensively, in studies of fertility (Bracher & Santow, 1991).

Yet, a growing literature in psychology and behavioral economics demonstrates that the principle of utility maximization does a poor job of predicting real-life judgments, particularly when those judgments are emotionally laden or associated

with physical arousal (Ariely & Loewenstein, 2006; Lerner & Keltner, 2001; Mellers et al., 1999)—that is, precisely those judgments like sex, marriage, and reproduction. Along with Beets, Liefbroer, and Gierveld (1999, p. 100), we argue that “reasoned action” is particularly inapt for understanding reproductive change and variation. A significant corpus now outlines relational, contextual, and time-orientation issues that rational choice theory either cannot explain or does not address (see discussion in Camerer, Loewenstein, & Rabin, 2004; Kahneman et al., 1982; Rabin, 1998).

For example, rational choice theory assumes that actors make decisions by reasoning backwards from specific desired outcomes, rather than forward from the contextual matrix in which they find themselves. This is particularly true in rational choice models of childbearing, which focus almost exclusively on completed family size, rather than on the configuration of the current conjuncture. In contrast, Tversky and Kahneman’s (1974) seminal paper shows that individuals evaluate choices *relative* to a reference point, usually the status quo. Building on this work, Kahneman and Tversky (1979) demonstrated that social actors respond to gains and losses in different ways: they are systematically more averse to losing an object than they are desirous of gaining an object of equal value (Kahneman & Tversky, 1979; Camerer, 2005). The value attached to an outcome can also change with shifts in the status quo. The applications to childbearing are almost too obvious: losing a child is worse than bearing one is good; the value of the outcome “three children” changes with changing parity or family structure; at least some of the time, people reason about reproduction not in the abstract, but in relation to a specific present. Similarly, “salience effects” refer to the tendency for individuals to disproportionately weight salient, memorable, or vivid evidence even when they have better sources of information—for example, assessments of one’s own likelihood of divorce may be more strongly influenced by a close friend experiencing a breakup than by more relevant information about divorce rates in one’s community.

Another key assumption of rational choice theory and its applications to fertility theory is the stability of preferences.<sup>3</sup> However, over the last 20 years it has become clear that preferences shift depending on how options or outcomes are framed (Johnson, Hershey, Meszaros, & Kunreuther, 1993; Tversky & Kahneman, 1981). The context in which decisions are made matters far more than rational choice can accommodate. Researchers have demonstrated that decision-makers may postpone or forego decisions when the choices are difficult or options are numerous (Tversky & Shafir, 1992); change their preferences with the addition of strictly undesirable options to their choice set (Huber, Payne, & Puto, 1982); make different decisions based on whether the options are presented together or in isolation (Hsee, 1996); and base their decision on their anticipated regret when another choice could prove to be better (Bell, 1982). Applied to fertility, these papers suggest that we should expect reproductive preferences to be highly sensitive to the structure of the family “choice

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<sup>3</sup>Note that the stability of *preferences*—an explicit assumption of the rational choice model—is very different from the stability of *demand*. Whether the demand for children is stable is an empirical question that depends not only on preferences, but also on prices and the budget constraint.

set,” or the socially defined range of alternative reproductive trajectories and to the concrete context of decision-making, that is, to structures and conjunctures.

Another relevant aspect of behavioral decision-making research investigates how individuals’ orientation to time influences their preferences. Research shows that people often cannot forecast their future preferences (Kahneman, 1994; O’Donoghue & Rabin, 1999, 2001); in combination with the empirical finding that preferences change, this means that decisions with long-term consequences will regularly produce non-optimal outcomes. People do not discount future outcomes at a constant rate, as rational choice theory assumes; instead, people overvalue the present and undervalue the future (Frederick, Loewenstein, & O’Donoghue, 2002), and tend to prefer sequences that improve over time (Loewenstein & Prelec, 1992, 1993). Casual observation, introspection, and psychological research all suggest that observed intertemporal choices depart from the predictions of discounted utility theory (e.g., see Laibson, 1997; Loewenstein & Prelec, 1992; Rabin, 1998). For example, one of the core predictions of this model pertains to consumption smoothing: expected changes in income will not produce changes in consumption, because individuals have saved in the past, or will plan to borrow to “smooth out” income fluctuations. This prediction is completely unsupported by the data, which show that consumption very closely traces income over individuals’ life cycles, and consumption often drops sharply as a result of inadequate savings when individuals retire and their income is reduced. These findings suggest that the temporalities of reproduction—the fact that child bearing takes a long time, that children come (usually) one at a time, and that decisions about children are often difficult and postponable—should matter a great deal, and should produce reproductive outcomes different than those predicted by rational choice. Reproductive decisions are not in fact “made once-and-for-all, generally at the beginning of the reproductive lifespan” (Greenhalgh, 1995, p. 22), as our models assume.

### *Final Remarks*

This chapter has explored the ways in which the theory of conjunctural action corresponds with what has been learned about human perception and action in a range of social, human, and even some biological sciences. Our aim has been to demonstrate that this approach is consilient with knowledge from neighboring fields, and therefore that it provides a promising framework for research in social demography—more promising, we argue, than the kind of neoclassical assumptions about individual rational action and the transparent translation of intention into outcomes that are currently in widespread use. Improving the quality of research in social demography is our primary goal. But this chapter also suggests another reason that the deployment of the theory of conjunctural action in social demography would be advantageous: it would make social demographic research more relevant and interesting to colleagues in other fields, and therefore more widely read and cited. Studies of family change and variation are extremely important, and as social

demographers we have rich empirical examples of human action in the domains of family and fertility. Insofar as we can improve both the descriptive adequacy of our data and the visibility of our research, the social sciences broadly will benefit.

Thus far, this book has sought to describe a new approach in social demography and outline its relationship to research in other disciplines. The next three chapters use the theory of conjunctural action to make sense of empirical patterns. We begin at the largest and most general level, variation and change in fertility rates at the national level ([Chapter 3](#)), then move to a more micro-level, namely class differences in premarital pregnancy ([Chapter 4](#)), then move to a more macro cultural change, the emergence of a social field of infertility over the last three decades in the US ([Chapter 5](#)). We conclude the book with a discussion of future directions.

## Chapter 3

# Fertility Change and Variation

Fertility has declined dramatically over the last half-century while substantial variations in fertility levels remain (see United Nations, 2008). Specifically, fertility remains well above replacement levels in many African countries and in some Asian and Latin American and Caribbean countries; fertility levels in developed—and increasingly some developing—countries are below replacement levels (i.e., with a total fertility rate, TFR, below 2.1). The United States is an exception among developed countries with aggregate fertility near replacement levels (see Morgan, 2003). But in Europe and Southeast Asia, fertility has dropped to very low levels, with the TFR in some countries well below 1.5 for several decades. Recently, some reversals in fertility declines have been observed in several advanced countries (Myrskylä, Kohler, & Billari, 2009). The implications of these changes in fertility levels are profound and far-reaching—from the reductions in women’s time spent bearing/rearing children, to impacts on the size and structure of kin networks, to consequences for societal age structure.

In trying to understand the determinants of these fertility changes, and their variation across contexts, social scientists can draw on a body of research and literature that is among the most developed in the social sciences. Fertility research is characterized by a broad consensus about appropriate methodologies that should guide analyses, and a large set of facts about fertility trends and their variation. Researchers also have at their disposal a well-developed set of conceptual frameworks, or theories, to account for the variation and changes in fertility level over time and across contexts, and there is a growing body of literature that empirically tests the causal relationships between the elements highlighted in different theoretical frameworks. This theoretical development and empirical description of fertility trends and their variation rests on more than a half-century of concentrated effort by researchers who have been well supported by governments and foundations. These efforts have been motivated by the broad consensus that fertility—including its magnitude and distribution across age and other individual characteristics—has

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important implications for human development and for individuals' and societal well being. Finally fertility researchers have been advantaged because the focus of their inquiry, births, is also of interest to the state for administrative purposes. Thus, relevant data for research are routinely collected for other purposes. These administrative needs have created data systems and standards of measurement that have helped to move the field forward (see Morgan & Lynch, 2001).

Despite the profound changes in fertility levels, and the detail with which these changes have been documented, the role of fertility decline in assessing general theories of societal change and/or behavioral differences has been modest. To address this niche in the literature, the goal of this chapter is to discuss the profound changes in fertility that have occurred during the last decades, and the variation in fertility levels across countries, within the overall framework of TCA (Chapter 2). Specifically, we show in this chapter that the large body of theories, methods, facts, and understandings regarding fertility change and variation can be usefully integrated within the TCA framework. Moreover, rather than merely showing that TCA is consistent with the existing literature on fertility, we establish in this chapter that TCA provides a uniform framework for integrating previously disjoint theoretical approaches that are frequently employed in explaining fertility trends and differences. Moreover, we document how TCA is useful for resolving current debates in the field and for speculating about the course of future fertility changes and differences.

## TCA and Fertility Change and Variation

The most basic premise of TCA is that all stimuli and experience are filtered by an individual's brain on the basis of stored (but modifiable) mental "maps," "frames," or "schemas" (hereafter schemas). The second premise of the TCA is that society is organized materially as well as schematically. Any material form or reserve of value that has an existence outside of the schemas it manifests we call a "material," or material structure. The product of the interaction of schemas and materials over time we call "structures." For example, the structure we call the nuclear family would not exist without *both* examples of such families in the world *and* the ability of individuals to learn schemas about such families, store them, and use them to motivate or evaluate their own and others' family behaviors. Finally, within TCA, the circumstances or situations in which individuals find themselves embedded are central to all human behaviors: action never occurs in the abstract but rather in concrete configurations of context. Conjunctures are therefore the setting of individuals' and couples' behavior, and it is the construal of key conjunctures that shapes fertility and family behavior within the TCA framework.

The study of fertility behaviors is particularly suitable for assessing theories of change and difference. One of fertility researchers' major contributions has been the description of fertility transition in many populations, documenting with considerable detail the differential patterns of human reproduction that can occur over time and across socioeconomic contexts. Currently, most social scientists explain these

trends and variations by drawing on conceptual models that focus on “proximate determinants” (e.g., having sexual intercourse, use of contraception, breastfeeding status, or somewhat less proximate constructs as an individual’s intentions or desires for children) that are useful in accounting for these fertility declines and fertility differentials (e.g., Bongaarts & Potter, 1983; Easterlin & Crimmins, 1985). But these frameworks and the explanations that they provide beg questions about more fundamental causes. Explanations that focus on more fundamental or “distal” causes often focus narrowly on economic development, increasing school enrollment, social diffusion theory, or ideological drivers of change. TCA is useful in integrating the proximate frameworks while simultaneously addressing the issue of more fundamental or “distal” causes of fertility decline. TCA achieves this goal by emphasizing—and integrating—many of the concepts that fertility researchers find most useful: the life course, sequential decision-making, period effects, and the import of both micro and macro processes/forces. Most importantly, as we argued in the last chapter, within TCA we consider the life-course an interrelated set of path-dependent processes—education and career, relationships and marriage, childbearing, and so on—and focus particularly on situations in which one or more of these processes becomes particularly salient or important—such as expulsion from school, an unintended pregnancy, or a new job. These situations are “conjunctures”, so-called because they often conjoin two or more path-dependent trajectories. In the context of fertility, for example, one could treat each day or each menstrual month as a conjuncture: a duration of time when factors across various domains (such as employment, relationship, physical well-being) congeal in a specific way, holding the potential for change (pregnancy) or a reinforcement of the status quo ante. Ryder (1973, p. 503) once made this suggestion—the relevant fertility behavior is “whether to permit the next ovulation to come to fruition.” This conceptualization fits well with the biological realities of human fertility and provides one of the most extreme examples in the literature of a sequential decision-making model. That is, decisions about births are not only made one at a time (i.e., at each parity) but decisions about the next birth are made with very short time horizons—e.g., on a month-to-month basis.

In general, however, it is probably best not to conceptualize fertility-relevant behavior as an explicit decision each month. Rather, each month—or any conjuncture during which a conception could occur—is embedded in an individual life course, which is further embedded in the macro-structures of a time and place. In any specific month, therefore, depending on the exigencies of the conjuncture and its specific construal, the intention for an immediate pregnancy (or even the risk of an unintended pregnancy) may not ever arise as a possible option (or outcome). Or, given stability in circumstances, a person may simply continue with an existing habit or practice. Within each month, therefore, the structures provided by an individual’s life-course and the overarching macro-structures provide constraints and stability to fertility behavior. Variation and uncertainty remain, but they are likely to unfold during key events, like union formation and births. The life course, as defined in TCA, is therefore a *structure* that is jointly composed of schemas and materials. Variation in fertility outcomes—either on the individual or aggregate level—arises as a result of the interaction of schema and materials.

The TCA further posits that structures, such as the normative life course and the institutions that are associated with various life-course stages, matter for demographic outcomes through two specific pathways: structure shapes us as people and as social actors through the schemas we learn, and structure influences the kinds of contexts we encounter. More specifically, and as argued in previous chapters, material and virtual structure inculcate social actors with intuitions, habits, and inclinations, with self-narratives and aspirations. In turn, social actors embody these behavioral guides. That is, material and virtual structure shape—but do not solely determine—the *Self*, which we treat as consisting of a set of explicit self-ascriptions and notions of belonging, called *identity*, as well as a set of unarticulated, often corporeally embodied, inclinations, called *habitus* (on identity, see McAdams, 2001; on habitus, see Bourdieu, 1977). The fertility literature is replete with examples. Many people, particularly in high-fertility countries, conflate female and adult identity with motherhood and parenthood. Specifically, in such contexts, teenage girls desire to become adult women, a status that entails having children. These identities can be reinforced by corporeal inclinations of sexual attraction and interest, or by the desire to care for a young child or to have someone to love. Thus, schemas focus attention on parenthood as an avenue to womanhood and adulthood and saturate parenthood with corporeal sensations.

Net of its influence via identity, virtual and material structures influences the set of conjunctures that social actors face.<sup>1</sup> For instance, the introduction of family planning programs in many countries was aimed at “unmet need”—at women in sexual unions who did not want more children but who were not using contraception. The availability of family planning altered conjunctures by providing material structures that facilitated the use of contraception. There is a huge literature that suggests the schemas that were used to legitimate these new material resources were key to their acceptance and use. “Packaging” contraceptive distribution with child and maternal health services, for instance, produced opportunities for dissemination and knowledge about contraception. The greater access to such services that characterizes some areas as opposed to others (urban versus rural areas for instance) provides examples of how the “ecology of conjunctures” varies in geographical and social space.

In this chapter, we illustrate this conceptualization of fertility change within TCA first in the context of the fertility decline during demographic transition, and second, in the context of low fertility in developed countries.<sup>2</sup> Thus we claim that the general changes and idiosyncratic patterns can be understood via the explanatory

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<sup>1</sup>The social environments of poor and wealthy children provide striking differences in likely conjunctures—the likelihood of intellectually enriching opportunities and close adult supervision, for instance (see Lareau, 2003). In Chapter 4 we develop further the class differences in conjunctures that arise from the distinct ecologies of social classes and are relevant for U.S. fertility differences.

<sup>2</sup>Space limitations do not allow us to focus on specific cases of fertility decline during the demographic transition. Such a focus would allow for the historically specific aspects of each case which produce variation in the pace of decline via usual markers of economic or social development.

frame of TCA. The dynamics of micro-macro interaction it embraces hold the key to understanding both the general patterns and deviations around these patterns. We begin by reinterpreting the classic work on fertility decline, unifying disparate and disconnected claims and results. As Mason (1997, p. 452) has said “our knowledge of fertility transitions is extremely rich and our ability to understand these transitions inhibited more by erroneous thinking than by any fundamental lack of knowledge.” The major misconception, in our view, is the expectation of a highly uniform process especially vis-à-vis the timing of particular societal changes and an expected fertility response.<sup>3</sup>

## TCA and the Fertility Transition

The key features of the global fertility decline include: its rapid pace and “period” character; its relatively “loose” temporal connection to many other measures of social, economic, and demographic change; its path-dependent character; and by all indications its inevitability in economically advanced societies. (See Cleland, 1985; Bongaarts & Bulatao, 2000, chap. 4). TCA can account for, and even anticipates, these features.

First, once begun the fertility decline is rapid and tends to impact a broad age range of women. Thus, change occurs, not via “cohort replacement” (see Ryder, 1965), but by relevant cohorts changing behavior nearly simultaneously (see Ni Bhrolchain, 1992). Such rapid and pervasive change (by age) is expected when key events tip the balance in favor of new interpretative frameworks (schemas) that encourage fertility control. Below, following Mason (1997, p. 450), we argue that causal models of fertility transition “need to be ideational . . . changing perceptions ultimately drive fertility change” Perceptual (schematic) change can occur quickly as the result of key events; and once a schema is adopted it can diffuse rapidly among an integrated and interacting population.

The second feature, loose temporal connections to other aspects of social change, reflects the more cumulative basis for changes like increasing school enrollment or increased economic productivity. These aspects of social change, changes in materials that link to features of the “built social environment” (See Sewell, 2005, Chapter 10), are by nature more steady and incremental compared to the earthquake-like adjustment possible in fertility behavior. These loose temporal connections are also linked to the path-dependent nature of social change that originates in existing schematic and material differences. These differences can retard or speed a particular change or alter its path. For example, Greenhalgh (1988) argues that the cultural/historical continuity of Chinese Diaspora populations account for their more rapid adoption of birth control and thus their earlier and more rapid fertility declines compared to co-resident ethnic groups. Key aspects of this cultural/

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<sup>3</sup>The failure to find such “laws” has led some to claim we don’t really know why fertility declines. Mason argues that this is “erroneous thinking”, and we agree.

historical continuity were schemas that linked family size/composition and family welfare and social mobility.

Finally, all evidence points toward the inevitability of low fertility in economically advanced societies. Specifically, once declines have begun they rarely pause until low levels have been reached, and no economically advanced society has high fertility. These facts fit well with the import of cumulative social, economic and demographic change that provide the contexts that both condition (and prime) the invocation of particular schema and constrain choices based on this logic. Globalization encourages isomorphic “built environments” and increases the visibility of schemas preferred and used by the more powerful. These schemas and built environments reinforce one another driving directional and secular change. But these globalizing forces leave substantial schematic and material differences both across and within societies and thus substantial diversity remains within and between countries. We now turn to a more detailed discussion of these topics.

### *Role of Schemas in the Fertility Transition*

Although referred to by other names and frequently underspecified, the import of schemas in explanations of fertility decline is widely accepted. Cleland and Wilson (1987, p. 30) argue that “explanations of the initial (fertility) decline must give fuller recognition to the role played by ideational forces.” Mason (1997, p. 450) states that causal models of fertility transition “need to be ideational in that they must recognize that changing perceptions ultimately drive fertility change.” And as discussed in the previous section, Greenhalgh (1988) argues that Chinese populations possessed a cultural logic (schema) linking number/composition of children to family welfare. This emphasis is anticipated by Coale’s (1973, p. 65) classic preconditions for a fertility decline: fertility must be “within the calculus of conscious choice,” people must be motivated to have fewer children, and the means of fertility control must be available and acceptable. The second and third preconditions are linked to material structures and will be taken up below; the first precondition clearly focuses on schemas and is discussed at length here. Coale (1973, p. 65) states:

Fertility must be within the calculus of conscious choice. Potential parents must consider it an acceptable mode of thought and form of behavior to balance advantages and disadvantages before deciding to have another child. . . .

In elaborating on this precondition, van de Walle (1992) argues that some past societies (including many in the West) were characterized by “innumeracy in children,” and that new schemas were required for people to think explicitly about child numbers in the abstract and to link family size to child and family well-being. In fact, family size (i.e., seven vs. four vs. two) was not conceptualized as a family variable of great import or one under significant individual control. As a result, the number of children was left “up to God” or to chance. Van de Walle says:

Numeracy about children—that is, the perception of a particular family size as a goal in the long-term strategy of couples—may be a cultural trait present in some places and times

and not in others; and that without this perception, it is unlikely that family limitation could exist.

Numeracy about children and the norm of an ideal family size appeared not long before the fertility transition. A fertility decline is not very far away when people start conceptualizing their family size, and it cannot take place without such conceptualizing. (pp. 489, 501).

As a schema, this “numeracy about children” (i.e., the linking of a particular number of children to long-term family welfare) is general and underspecified. However, additional social historical work could elaborate these schemas by specifying the cultural logic linking number of children and family welfare.

Other work suggests that although people in many settings may have ignored child numbers, other aspects of reproductive practice were of great interest. Bledsoe’s ethnographic work in Africa during the 1980s and 1990s describes fertility-related schemas that link the timing of births and the health of the mother and the child. Bledsoe, Hill, D’Alessandro, and Langerock (1994, p. 86) report that “whether people adopt contraceptive technologies and how they use them are mediated less by the original Western formulations of these technologies than by local cultural perceptions.” For Bledsoe’s African respondents, the number of children was not of primary concern and was seen as frequently beyond women’s control. Thus, ideal, intended, and desired family size, ideas posed by Western scholars, were new concepts that fit poorly into existing schemas held by these women. Yet note the characterization of the importance of birth spacing of Gambian women:

For a woman, bearing children steadily throughout her reproductive years is the most important way of securing her own welfare, demonstrating her commitment to her husband and his family, and showing respect for her family elders who gave her in marriage. But births are not supposed to occur at random intervals or in rapid succession. It is generally perceived that both breastfeeding and pregnancy place heavy strains on a woman. Because a mother can produce only a limited amount of nourishment at a time, people contend, a new child should not be conceived before the previous one has finished breastfeeding. If the two children overlap, the one nursing and the other one in the womb, folk wisdom holds, the first will begin to suck the blood of the mother and of its unborn sibling as their nutritional demands mount. (Bledsoe et al., 1994, p. 89)

Thus, as Mason (1997, p. 448) states, “strategizing is often . . . in terms of the gender composition of offspring, the spacing between children, the timing of births, or whether another child is desired at a particular point in time, rather than in terms of an *ex ante*, target number of children.” Schemas are the mental frameworks that make particular fertility components and behaviors perceptible and actionable, and that define what those actions might be. Bledsoe’s analysis of fertility in West Africa shows how schemas matter for reproductive actions. The “folk wisdom” or taken-for-granted standards of propriety direct behavior; modeling behaviors oriented to child spacing as if they were concerned with limiting child numbers will yield inadequate understandings.

Additional uses of schema can be found in the work of Lesthaeghe and van de Kaa (1986; van de Kaa, 1987), who link a shift in the dominant schemas to both the decline of fertility during the demographic transition and contemporary

low fertility. To explain, Ariès (1962, 1980) describes two primary motivations for declining fertility. The first, associated with demographic transition and especially with declining family size, assumes that all who could have children would bear them and that parents' dominant orienting goals were to provide substantial resources to their children. Van de Kaa (2003, p. 78) says that altruism toward children defines this schema, a schema that Ariès claimed produced an enormous sentimental and financial investment in children. This investment required parents to limit the number of children. The second motivation, which became relevant at later stages of the demographic transition, argues that reduced fertility—specifically in advanced societies—is motivated by new ideas that place the individual and individual choice at the core of the unfolding life course. Low fertility in developed nations thus arises as the dominant schemas about the life-course become increasingly individualistic, with the fulfillment of individual goals and desires—often in conflict with having a relatively large number of children—becoming a more important driving force of behaviors.

Shifting schemas are similarly central to Thornton's (2005) notion of developmental idealism that conflates Western wealth and power with Western family forms and Western cultural forms. Specifically, Thornton argues that a "package of ideas" (in our terms, a schema) has been disseminated internationally with profound consequences for family and demographic change. This schema of "developmental idealism", Thornton claims, is known to both elites and ordinary persons throughout the world. It posits that societies progress through similar natural, universal, and necessary developmental stages, leading to "modern states," which are industrialized, urbanized, highly educated, wealthy, and highly accepting of innovation. Accompanying this development are predictable family changes driven by the following package of ideas (Thornton, 2005, pp. 137–146): (i) the modern society is good and attainable, (ii) the modern (i.e., conjugal or Western) family is good and attainable, (iii) the modern family is a cause as well as an effect of modern society, and (iv) individuals have the right to be free and equal, with social relationships based on consent.

### ***Materials and Fertility Transition***

During the past four decades, scholars have developed a sophisticated microeconomics of fertility based on Becker's New Home Economics (Becker, 1981). Initially portrayed as applying the theory of consumer durables to the analysis of fertility, rational choice models of fertility have become sophisticated and widespread. For example, the idea of fertility being determined by couples who attempt to allocate limited resources—importantly including time and money—has become widely accepted. The central implications of the new home economic have therefore been the trade-off between child quality and child quantity, the attention to the opportunity costs of mothers' time, and attention to the life-cycle implications of fertility behaviors (see Hotz, Klerman, & Willis, 1997; Kremer & Chen, 2002;



Rosenzweig & Wolpin, 1980; Schultz, 1997). However, it is important to emphasize that many key/critical factors determining fertility choices are missing in these frameworks, such as the legal institution determining the structure of labor markets or family policies, routinized social practices, and forms of built space that so compellingly organize our daily lives. While McNicoll (1980) argued a quarter-century ago that institutional context matters, few rational choice theories have incorporated a broader notion of context that extends beyond the resources—such as time and money—that are controlled by individuals, and allows for an endogenous evolution of the institutions and environmental conditions affecting behaviors.

In contrast to this emphasis on the allocation of scarce resources within rational choice theory, TCA takes a broader approach and defines the *material components of structure* as the artifacts, rituals, and institutions that both embody schemas and also have a concrete existence that does not wholly depend on schemas. The material structures in TCA thus include not only economic resources or economic development; instead, we argue that institutions and conventionalized practices are as important as budget constraints in explaining individual and social behavior. Perhaps the most important innovative aspect of the TCA theory is that material structure affects behaviors not only through its direct effect (by facilitating or inhibiting a particular action) but also through its indirect effect on the schemas individuals are likely to invoke. Hence, while most rational choice theory adheres to the axiom of *De Gustibus Non Est Disputandum* (Stigler & Becker, 1977) in which preferences are fixed and independent of resources, materials in TCA are not only relevant in their own right as a determinant of individual's actions, but the material components of structure also embody and reinforce schemas in the world of objects.

This dual importance of materials is not new to fertility researchers: in fact, broad infrastructure and institutional changes were seen as the primary drivers of fertility decline in early statements of demographic transition theory (for example, Davis, 1963; Notestein, 1945). For example, Coale's (1973) third precondition of fertility decline—the availability of effective means of birth control—is a classic material resource that enables one to effectively act on desires to limit family size/fertility. Like other material resources, its development and diffusion necessarily alters existing schemas, for example about numeracy of children or the relative influence of men and women in reproductive decision-making.

### ***The Interaction of Materials and Schemas***

A third key axiom of TCA is that schematic and material structure are mutually constructed. At any point in time, therefore, materials can only be deployed—that is, used by social actors to pursue specific goals—in relation to some schema, and the schema generally defines the causal relationships between materials, individual actions, and various outcomes. At the same time, however, schemas cannot “float free” of material structures, or at least not for long. Virtual structures cannot develop



or persist on their own; social institutions, the distribution of material resources, and the structure of social networks all maintain and diffuse particular cultural representations while constraining the development and diffusion of others. Thus, people internalize existing schemas from their public manifestations in material structure. This means that materials influence behavior not only directly (as, for example, a law or policy might constrain behavior) but also indirectly, through the reconfiguration of schemas.

For example, life-course schemas not only specify that “marriage” (or a stable union) should precede a birth, but they incorporate the rationale for this ordering—care for the child is more secure when provisioned by two adults with a long term commitment. Materials in the world reinforce that this ordering is appropriate, normal, and moral. For example, there are elements of popular culture that codify this order (e.g., nursery rhymes like “first comes love, then come marriage and then comes — pushing a baby carriage”), legal documents presume it (the request for marital status and father’s name on the birth certificate), and codified word meanings (e.g., in the law and dictionaries) cement/fix/reinforce/delineate appropriate or inappropriate ordering in speech and writing. Wikipedia (8/11/2008) defines *bastard* as “an illegitimate child, and the word is also used as a derogatory term for an unpleasant person”.

The import of the macro-structures of time and place (social context) are obvious modifiers of the normative life course. Wikipedia, the twenty-first century archetype of a continually transforming document, defines illegitimacy as:

In common law, **legitimacy** is the status of a child that is born to parents who are legally married to one another, or that is born shortly after the parents’ marriage ends through divorce. The opposite of legitimacy is the status of being “illegitimate”—born to a woman and a man who are not married to one another. . . . Legitimacy was formerly of great consequence, in that only legitimate children could inherit their fathers’ estates. In the United States, in the early 1970s, a series of Supreme Court decisions abolished most, if not all, of the common-law disabilities of bastardy, as being violations of the equal-protection clause of the Fourteenth Amendment to the United States Constitution.

This Wikipedia entry captures the structural erosion of the sequencing of marriage and childbearing. *Legitimacy was formerly of great significance but a series of Supreme Court Decisions* (key events) legitimated new schemas and provided supporting materials.<sup>4</sup>

As we use the term, “events” vary in scale in the same way that structures themselves do. Thus, at the individual level, demographic vital events may be prototypical examples of structural change. Marriage and the transition to parenthood are major foci of social demographers because they transform the structure of the life course dramatically. At the aggregate level, events are larger, often more dramatic, but for that reason more complex. These macro-events are the causes of major period effects. Macro-events hold the potential for sudden changes in the ways people perceive and navigate vents such as the 1970 Supreme Court rulings

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<sup>4</sup>Of course, the Supreme Court decision itself relied, in part, on a diffuse set of changes in schemas.

on legitimacy status. Greenhalgh (2007) provides an important example from the fertility literature, describing the emergence of the Chinese one-child policy as the adoption of neo-Malthusian logic and as an “engineering model” of how to solve the government-perceived population dilemma. One can understand such events in retrospect, but it is difficult to see how the motivation and implementation of the Chinese one-child policy in this matter could have been anticipated. Nevertheless, such examples emphasize an important tenant of our theory that, despite their unpredictability, conjunctures, construal, and resulting events are fundamental to an understanding of social, family and fertility change.

This interaction of materials and schema, which is central in the TCA framework is often underdeveloped in existing theories of fertility change. Specifically, van de Kaa and Lesthaeghe’s second demographic transition theory, as well as in most of the microeconomic models and Thornton’s developmental idealism, do not address in detail the interaction of schemas and materials. For instance, Lesthaeghe discusses virtual and material changes as necessary and jointly sufficient, but does not focus on their mutual constitution (Lesthaeghe and Neidert, 2006).<sup>5</sup> In the Thornton framework, the relevant materials or resources necessary for invoking developmental idealism, through which the schema is represented, are not even discussed. Becker, and indeed most rational-choice-based approaches to fertility and parenthood, do not consider this interaction. That is, they ignore the values and metaphors through which economic alternatives become part of individuals’ choice sets and are evaluated in decision processes. They disregard the process that produces the meaningful alternatives that individuals consider.

While we are not necessarily endorsing his arguments, Caldwell captures the mutually constituted nature of schemas and materials in his well-known analysis positing universal schooling as a key factor stimulating the onset of fertility decline (Caldwell, 1982).<sup>6</sup> Caldwell blends schematic and resource changes to produce a rich structural argument of fertility decline. Specifically, Caldwell acknowledges that schooling raises the “cost” of children due to the direct costs of tuition, books, and clothes required for attendance and because of the indirect effects on children’s reduced availability for work. However, he argues strongly that these costs both induced and were in turn reinforced by a “new way of thinking” about children. Facilitated by substantial reductions in infant and child mortality and expectations

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<sup>5</sup>For instance, Lesthaeghe et al. (2006, p. 696) acknowledge “the effects of macro-level structural changes and of micro-level economic calculus.” They also acknowledge culture as an “additional force with its own exogenous effects” and that this culture is a “dynamic set of value orientations.” But we do not see in “second demographic transition” work sufficient attention to the mutual constitution of the virtual and material structure that is stressed in this axiom. An example of such mutual constitution is the U.S. “conservative and religious right . . . openly and vocally trying to fight back (e.g., with amendments seeking to ban same-sex marriage, closure of abortion clinics)” (Lesthaeghe & Neidert, 2006, p. 696). Detailed attention to such dynamics is central to the TCA logic and has not been central in SDT work.

<sup>6</sup>We are interested here in the *structure* of Caldwell’s argument, not its empirical accuracy. Regardless of whether the direction of wealth flows reverses in the way Caldwell posits, the form of his argument provides a nice example of integrating material and virtual structure.

about increased returns to the investment in human capital, children became persons in whose human capital parents should increasingly “invest”. This new perspective also changed the tasks that children could be asked or expected to do. Some traditional activities were no longer appropriate for educated children. The Caldwell argument characterizes the blending of schematic and material change that produces fundamental social change.

Pollak and Watkins (1993) also address the interdependence of material and schematic elements in their review of economic (rational-actor) and cultural explanations of fertility decline. The authors point out that even in a definitive statement of the classical economic position that tastes are fixed and exogenous, “changes in unobservable tastes cannot be distinguished from changes in unobservable stocks of consumption capital or from changes in unobservable technology; hence, changes in tastes can always be described as changes in technology” (Pollak & Watkins, 1993, p. 477). Similarly, in discussing cultural explanations of fertility change, they note that many cultural theorists reject a distinction between “opportunities” and “preferences”:

To borrow a metaphor from chemistry, such cultural explanations are not simply mixtures of opportunities and preferences, but new compounds whose elements—opportunities and preferences—are bonded together to form a new molecule with distinct characteristics. Or, to invoke a different metaphor, opportunities and preferences are the warp and woof of the fabric of culture. (p. 485)

In sum, Pollack and Watkins’ and Caldwell’s arguments capture this interacting feature of schematic and resource components of structure. But these works stand in contrast to the majority of work on the fertility decline, which is characterized by the absence of dynamics between schema and materials. As in the TCA, work in demography should move beyond debates of “culture vs. structure” (which roughly maps onto a schema vs. materials debate) as primary determinants of fertility change.

Although material and schematic structure are interdependent within the TCA, they are not perfectly mutually determined, and the partial “misfits” between them are an important source of social change. For example, let us return to the disjuncture between the Western-held view that contraception is used to limit the number of children and Bledsoe’s description of indigenous African childbearing schemas. Most westerners would expect that the introduction of family-planning programs in Africa would reduce higher parity births and thereby average family size. However, these materials (contraceptives) and their intended function did not fit the schema held by many African women. Thus, adoption of contraception was not rapid. However, some African women did see the value of contraception within their own schemas, which stressed appropriate fertility timing. To postpone the next birth, they adopted contraception as a substitute for abstinence.

As Caldwell, Orubuloye, and Caldwell (1992) argue, the result was a distinctly different pattern of fertility transition in Africa, one based on lengthening of all birth intervals (as opposed to liming births once a desired number had been achieved). Also note that the new materials (in this case, contraception) can also in time

facilitate changes in cultural schemas. People may adopt contraception for spacing, but as they use them over time and gain greater control over their fertility, they may come to reflect on the possibility of planning the number of their children. In time, use of contraception may be rationalized not only as a strategy for spacing but also as a means to limit the number of children, consistent with Thornton's developmental idealism.

## TCA and Contemporary Low Fertility

The observed range of "low fertility" across developed countries is only one birth per woman—from slightly above one birth to slightly above two. But the implications of this variation are huge. At the lower end it implies that the younger generation will be half the size of the preceding one; at the higher end it implies an approximate stability of generation size. The former is generally perceived as being unsustainable as it implies very rapid population aging, dramatic declines in labor supply and eventually group extinction; in contrast, the higher rates satisfy the most fundamental societal necessity—long term population replacement.

In the remainder of this chapter, we elaborate how the concepts of TCA can help to better understand low fertility in contemporary developed countries. While some authors have proposed that the demographic transition in the developed world has been completed (Bongaarts, 2002), the recent decades have demonstrated that fertility patterns continue to be subject to profound changes in post-demographic-transition industrialized countries. For example, while in the U.S. aggregate fertility rates have been fairly constant with a TFR near replacement level for more than three decades, underlying this near-constant TFR has been a transformation of childbearing patterns: childbearing has become increasingly delayed, teenage childbearing rates have declined while those of older women have risen, non-marital childbearing has become commonplace, and the labor force participation of women and mothers has increased substantially. In contrast to the US, fertility rates have declined substantially in other developed countries, and to historically unprecedented levels in Southern and Eastern Europe, as well as parts of Asia (S. Korea, Japan) with TFRs below 1.3. Paradoxically, some of the factors contributing to the very low levels of fertility in parts of Southern/Eastern Europe and Asia are also associated with the fairly constant and moderately high levels of fertility in the U.S., and they reflect a profound transformation of the early life-course: an extension of the transition to adulthood that is associated with delayed childbearing, a delay—and sometimes foregoing—of marriage, increased human capital investments, higher levels of labor force participation, etc. Previous research suggests that the diverging response of fertility levels to this transformation of early adulthood—with moderately high fertility prevailing in some areas, and low and very low fertility arising in others—is due to the interaction of these demographic changes with institutional contexts, norms and cultures, and historical and demographic trends. The same is true for several advanced countries which have witnessed a reversal of their declining fertility

trends. For example, the very low fertility in Italy has been attributed to a rigid labor market that makes compatibility of childrearing and labor force participation difficult, a “strong” family system where the family group is valued strongly (and perhaps more than in other contexts), and to the peculiar situation of young adults with high levels of youth unemployment. In this specific context, widespread social and demographic changes such as delayed childbearing and increased human capital and labor force participation have translated into very low levels of fertility, whereas in other social and institutional contexts, such as the US or northern Europe, similar changes have been associated with considerably higher levels of fertility.

In our discussion of fertility patterns we do not dispute the arguments above, but rather we restate them in the more general terms of TCA. Specifically, we demonstrate how the emphasis of schematic and material interaction within TCA provides a coherent framework for analyzing low fertility patterns and that, within this framework, the divergence of fertility across developed countries, as well as the variation of fertility patterns within the US and other developed countries, can readily be explained. In particular, we argue in the discussion below that low fertility in developed countries emerges as a result of schema that continue to imply a considerable importance of childbearing—and related, marriage or stable partnerships—with schema that emphasize individuals’ pursuit of a meaningful and satisfying life, and the rewards to “hard work” and persistence in planning and attaining one’s goals. These schema interact with a material context that can differ widely across or within countries, and both the schema and the material contexts continue to be transformed by changes such as globalization, economic development, and progress in communication and other technologies.

### ***Schemas in Low Fertility Settings***

For the concept of schemas to be useful we must be able to identify the crucial set at play in a given domain, such as fertility behaviors in advanced countries with near- or below-replacement fertility. While a systematic documentation of relevant schemas for reproductive behavior is not currently available from population-based studies, various surveys provide indications about the fertility-related schemas held by individuals. For example, a U.S. national survey (NLS HS Class of 1972) asked respondents in their 1920s (around 1980) the following series of questions. *Which of the following are very important in your life? [Choose between Very important, Somewhat important, and Not important]:*

1. Being successful
2. Getting married
3. Having a family
4. Having leisure time
5. Having a rewarding career
6. Living close to family and friends

While respondents understood that this was a ranking exercise, the most striking feature of the data is the extent to which multiple domains are “very important” (see Rindfuss, Morgan, & Swicegood, 1988). That is, respondents simultaneously hold schemas that justify/support a range of goals. To capture this multitude of potential conflicting goals in contemporary developed country contexts, we posit the following three foundational schemas that are broadly relevant in the U.S. (and likely in many) low fertility context(s):

1. Part of a normal adult life is marriage and a family—where family is defined as an opposite-sex partner and a few (usually two) biologically related children.
2. Adult life is reflexive and constructed; its goal is a meaningful and satisfying life.
3. Difficult tasks can be attacked by hard work and appropriate strategic decisions including timing and sequencing.

The key feature of these foundational schemas is their generality that nevertheless have clear implications for specific behaviors. For example, the first schema characterizes marriage and family as a key aspect of the normative life course, a schema that is pervasive, long-standing, and codified in many materials. On the individual level, achieving the prescription of this first schema by having a partner and children results in higher levels of subjective well-being (“happiness”) (Kohler, Behrman, & Skytthe, 2005). The schema is also consistent with arguments that humans have evolved to have a preference for children and/or nurturing children (Foster, 2000; Morgan & King, 2001), possibly even a “two-child psychology” that implies a strong desire for two surviving children (Carey & Lopreato, 1995), and fMRI studies have documented increased brain activity in regions of the brain associated with bonding when mothers are shown pictures of their own children, but not when shown pictures of other children. The power and pervasiveness of the continued centrality of a schema emphasizing parenthood and marriage in contemporary developed countries can also be demonstrated by the large proportion of young people who anticipate marrying and having a family, even in data for very recent cohorts. and the low levels of desired childlessness reported across developed countries. This is true despite actual fertility levels that often imply substantial levels of childlessness (i.e., above 20%). Its power is also felt in the difficulty of violating the normative expectations of this schema. Similarly, challenges to this schema, whether in the form of legalization of gay marriage or very low levels of fertility in some European countries, often prompt emotional debates in the media and by politicians that emphasize the continued importance of parenthood and childbearing for society.

The second schema privileges a meaningful and satisfying life, consistent with Giddens’ (1991) description of the deinstitutionalized modern life course that offers—particularly young adults—an increasingly broad range of options and opportunities. Key decisions, including whether to have children, therefore become choices that women and couples make as they construct stimulating and meaningful lives for themselves. Their decisions are based on their preferences, past experiences

and goals/ideals. Marrying and having children are conceived as one—but only one—aspect of a broader “portfolio” of goals/behaviors that need to be combined or balanced to lead a rewarding life. A frequent corollary of this schema is therefore the notion of planning parenthood and marriage within a broad range of life-course goals, and having children and marrying when the “time is right”—which includes both appropriate timing with respect to an individual’s broader goals, such as completing education, achieving a meaningful career, etc., as well as having a suitable partner who plays an active part in childrearing. Recognizing that there are important exceptions to this pattern, and that unintended fertility continues to be widespread, especially in the US, this notion of planned parenthood within broader life-course goals has often translated into delayed transition to adulthood with childbearing occurring at increasingly older ages (Kohler, Billari, & Ortega, 2002). This trend was instrumentally facilitated by technological and legal changes that provided access to convenient and reliable contraception, specifically the pill, thereby reducing the risk of unintended pregnancies for individuals pursuing education and career during early adulthood (Goldin & Katz, 2000).

The third schema is a pervasive one for problem solving—work hard using appropriate strategies. Its application is ubiquitous from mathematics (decompose complex equations into simpler ones that can be solved in a step-like fashion) to art (dancers learn steps one at a time and then recombine them; painters learn techniques with which they innovate). Quinn (1996, 2006) has discussed how hard work can be used to reconcile conflicting cultural notions. Quinn’s focus was marriage and she argues that two dominant cultural values are that marriage should “last” and that it should be “fulfilling”. These values are in potential conflict because they imply that unfulfilling marriages should end. These differences are reconciled, to quote Quinn, by “working on one’s marriage.”

This bundle of ideas about succeeding through effort . . . make us treat our marriages as matters of success and failure. (It) has its origins in middle class American child rearing. American children learn to frame much of their learning in terms of success starting with toilet training and tying one’s own shoes, if not earlier. Very young children are rewarded for even small “successes” with extravagant praise, delivered in the special warm voice, and often accompanied with an exaggerated facial expression of delight and a little clap, that American parents reserve for such rewards (see Quinn, 2005:50). (I have observed American children who have internalized this technique to the point of clapping delightedly for their own achievements.) Training to be a success is continuous thereafter at home, in school, and in all kinds of extracurricular activities, especially sports, that are organized around the ideas of improvement, achievement, and winning. (Quinn, 2006, p. 14)

These foundational schemas can be employed in various ways. They can compete directly, as when individuals face key tradeoffs between family and career. People struggle individually, decision-by-decision. However, when persons’ lives (the set of conjunctures they face) repeatedly bring these schemas to the fore, common solutions are found to these common conjunctures. Quinn (2005) calls these solutions “cultural models”; we continue to refer to them as schemas but acknowledge their less abstract and more “operational” nature. We propose that the three foundational



schemas and the conjunctures faced by middle and upper middle class women have produced two derivative, operational schemas for “constructing a life”.

A first derivative schema, which we will call *family-first*, gives priority to family decisions. This life course is constructed, voluntarily chosen, but is built on traditional and often religious values. Adherents would say that this life is not always the easiest path but that hard work and proper strategies can solve the day-to-day problems. More importantly, hard work and a family centered life produce the greatest happiness over the long run. It is through sacrifice and hard work that one becomes mature and is fulfilled. A second schema, *individual-first*, places independence and self-actualization first, at least sequentially. Family remains very important but families stand the best chance of being fulfilling once persons are ready for them. Independence and self-actualization build the individuals that can, in time, create good families—families that provide fulfilling experiences for all members. Note that these two very different operational schemas emerge from the same foundational schemas and common twenty-first century conjunctures. Understanding change and variation need not depend on different foundational schemas but may instead be based on how they are woven together in particular environments and conjunctures.

These schemas play a key role in contemporary fertility change and variation in the U.S. and other developed countries. For example, the individual-first schema could produce the behavioral components of what has been called the *second demographic transition* (Lesthaeghe, 1995): low fertility, delayed childbearing, decisions to forego childbearing altogether, cohabitation instead of marriage, greater independence between spouses/partners, and union instability. While Lesthaeghe and van de Kaa, in their seminal work on the second demographic transition, have emphasized this individual-first schema and its ascendancy over the family-first schema, we argue that their framework does not account for the heterogeneity in low fertility patterns that has prevailed across or within low-fertility populations in recent decades. For example, as discussed in more detail below, substantial fertility differences by religiosity are prominent in the U.S. Their existence points to the continued impact of the *family-first* schema for at least part of the population. Hence, we argue in this chapter that it is useful to conceptualize both the simultaneous operation of overarching schemas, like those outlined above, as well as the interaction of these schemas with the materials present in particular contexts—that is, within the institutions in which individuals are embedded and with respect to the resources that are at their disposal.

### ***Materials in Low Fertility Settings***

The material aspects of structure are also of central importance for understanding low fertility in advanced societies. In particular, the emergence of sustained low and very low fertility in many developed—and increasingly developing—countries has been closely interrelated with profound changes in the material structure related to



individuals' and couples' reproductive behaviors. Some of these material changes that affect fertility trends are overarching and interact with other domains of life, such as globalization, the rise of the tertiary service sector, higher standards of living, improved communication, increased human capital, growing urbanization, etc. Other material changes have been more specific to fertility change, such as changes in family policies, contraceptive innovations, the enforcement of anti-discrimination laws, and changes in sex ratios).

A consideration of all these material changes is beyond the scope of this chapter. Instead, in the examples below, we show how material structures interact with virtual ones (schemas) to produce structured behavior.

### **Low Fertility Arising from Schema Material Interactions: Three Examples**

In this section we illustrate how the interaction of the three foundational schemas highlighted above, that is, the continued importance of marriage and a family, the pursuit of a meaningful and satisfying life, and the importance of “hard work” in achieving one’s life goals—have interacted with the material structure to result in differential patterns of low fertility. In particular, the case studies that we present in this section include (a) the factors contributing to the relatively high levels of U.S. fertility compared to other developed countries—specifically Germany, (b) the causes of persistent race and religious differences in U.S. fertility, and (c) differences in low fertility patterns between young adults in East and West Germany after reunification.

#### ***Low Fertility Variation: Contrasts Between the U.S. and Germany***

We acknowledge that there are contributing differences across societies in the key schemas and materials which influence fertility outcomes. However, we stress that it is the interactions between them that have created the tension between work and family.

In both the United States and Germany, women and men clearly value marriage and parenthood, consistent with our first fundamental schema. Specifically, the available evidence indicates that the two child norm continues to be strong. However, it may be slowly eroding in Germany as a result of more than a generation of below replacement fertility (see Goldstein, Lutz, & Testa, 2003).

The second schema, that an adult life is reflexive and constructed, is also dominant in both countries. However, there is a stronger religious influence in the U.S. context (discussed in more detail below) that legitimizes traditional family schemas as alternatives to more egalitarian ones. As we will discuss more fully below, these religious orientations are supported by material structures that have emerged from the U.S. “culture wars”.

The third schema, that hard work and proper planning can allow one to achieve conflicting goals, may be especially strong in the U.S. compared to many other developed countries, including Germany. The U.S. penchant for narratives that stress individual's hard work as reasons for success is one indicator—and a material resource that encourages its continued invocation. American culture stresses the individual and her efforts as few others do.

From the above, one can detect a stronger attachment to these key schema in the U.S. than in Germany. But these differences cannot account for the large contemporary fertility difference between these two countries. Following Lutz, Skirbekk, and Testa (2006), we argue that schematic and material structures have created a “low fertility trap” in Germany and in many parts of Europe. To explain, as noted above in Goldstein et al. (2003), family-related schemas (and specifically those pertaining to ideal family size) are slowly adjusting to the reality of low fertility in Germany and to the social environment that produced it. A full generation of low fertility experience (e.g., high levels of childlessness and pervasive fertility postponement) has eroded the perceived and experienced links between adult life, parenthood, and happiness/fulfillment. This schematic adjustment reduces the disjuncture between traditional norms and contemporary behavior. As we have repeated several times in earlier chapters—schemas do not float free, at least for very long. The material manifestations of multi-child families in Germany ceased to support this schema; this evolving lower ideal family size provides one component of the “low fertility trap”.

Lutz et al. (2006) argue that a second component is primarily material—past low fertility has produced a much older population age structure. Existing institutional arrangements define a relatively early retirement age and relatively generous welfare benefits. These benefits, in turn, are paid by high taxes on workers, many of whom are young parents or potential parents. The burden of these taxes adds to the economic difficulty of younger adults and works against timely family formation; this provides a new material environment in terms of observed family sizes, new materials which support new schema. The trap's third component also derives from the aging population and operates at the population level—the smaller birth cohorts produced by the low fertility of the previous generation will produce fewer children, net of their own fertility level, because of smaller cohort size.

The situation in the U.S. is different. First of all, fertility is not nearly so low and thus the aging of the population is occurring at a slower pace. Of course, this explanation begs the question: why have U.S. fertility levels not fallen to low levels? Stated differently, given desires for two children and for female employment, how have young women in the U.S. created a life that includes both?

Our answer is that a set of interlocking structures has allowed the U.S. to evade low fertility. These structures are fully unintended from a family policy point of view. Key material features of the U.S. childbearing context include: widely available day care but little maternity leave, a 24-7 economy that provides many opportunities for shift work and that produces substitutes for many goods/services previously produced in the home, and relatively egalitarian gender roles that provide more assistance from the partner in homework and child care. In contrast, the

German labor market is considerably less flexible, and the tax system and other institutional contexts favor the traditional one-income breadwinner family more than in the U.S. This, in combination with even well-intentioned family policies in Germany, has net antenatal consequences. These different bundles of materials are reflected in the differential costs of children experienced by parents in the U.S. as compared to Germany (Diprete, Morgan, Engelhardt, & Pacalova, 2003; see also Adsera, 2004). For example, costs for first children estimated by Diprete et al. (2003) were narrowly defined as the change in family income that accompanies a birth. Longitudinal data showed that West German women exit the labor force for much longer periods than do American women, with a correspondingly greater decline in earnings. German government transfers compensate for part of this difference, but the net costs on this dimension remain greater for West German women. Indeed, the greater cost and longer exits from the labor force are associated with lower rates of first birth in West Germany than in the United States. Apparently, institutional responses, perhaps including greater gender equality and labor-market responses more than compensate for the paltry U.S. government transfers in women's and couples' decisions to have a first child.

The notion of a "low fertility trap" and stable replacement-level fertility are exactly the larger type "structures" we wish to explain. TCA provides a template for the construction of adequate explanations of these structures—the different constellations of schematic and material structures which shape/characterize contemporary conjunctures.

### ***Persistent Differences in U.S. Fertility by Race and Religion***

TCA concepts and arguments fit nicely with U.S. fertility and family differences. Here we will focus on two of the most dramatic contemporary fertility/family differences in the U.S.—differences by race and by intensity of religious belief.

#### **Black/White Fertility Differences**

Black/white differences in fertility and family formation have been the focus of immense attention in the past half century. Blacks have had higher fertility for much of this period but in the last decade convergence in the TFR is virtually complete (Yang & Morgan, 2003). However, dramatic differences remain in key aspects of childbearing, especially the age at first birth (much younger for blacks) and the mother's marital status at birth (black mothers are less likely to be married at their first child's birth). The literature is largely focused around a debate of whether such differences are "structural or cultural"—due to the resources individuals control or to their reasoning vis-à-vis these resources. The basic positions can be traced back more than a half-century—the Moynihan Report (U.S. Department of Labor, Office of Policy Planning and Research, 1965) and reactions to it are illustrative (Rainwater, 1967). Specifically, Moynihan offered an account that, in our terms, featured differences in both materials and schema.

Moynihan begins with the premise that the “child learns a way of looking at life in his early years through which all later experience is viewed and which profoundly shapes his adult conduct”—perception is paramount. These schemas can vary by groups for two reasons. First, initial schemas, or the range of those available, can vary by cultural and historical experience. Second, recurring contemporary problems and constraints of groups differ and new schemas emerge or old ones are reinforced as accepted/expected responses to common conjunctures. While Moynihan’s characterization of this macro-micro process is both Eurocentric and factually flawed (e.g., he described the black family as a “tangle of pathology”), he joined a focus on schemas with one on materials. For instance, he argued that the institutions of slavery and Jim Crow undermined the male breadwinner role and thus the conjugal tie. The weakened conjugal tie reinforced reliance on extended kin and friends. These models of family were thus reinforced continuously in people’s brains by behavior in the world around them. These schemas, in turn, reproduced the behavior. Moynihan argued that even if institutionalized discrimination was eliminated and individual prejudice declined, the disadvantages of the black community would remain because a vicious cycle was in place.

Three centuries of injustice have brought about deep-seated structural distortions in the life of the Negro American. At this point, the present tangle of pathology (in the family) is capable of perpetuating itself without assistance from the white world. The cycle can be broken only if these distortions are set right. (From conclusion of 1965 report).

Moynihan’s argument was so polarizing because he argued that intervention in this cycle should focus on black family structure and stability:

The thesis of this paper is that these events, in combination, confront the nation with a new kind of problem. Measures that have worked in the past, or would work for most groups in the present, will not work here. A national effort is required that will give a unity of purpose to the many activities of the Federal government in this area, directed to a new kind of national goal: the establishment of a stable Negro family structure. (From introduction of 1965 report).

Specifically, the behavior of blacks (that could be traced to family-oriented schemas) would need to be altered before they could take advantage of any real changes (including objective improvements) in the conjunctures they faced.

Many interpreted this argument as “blaming the victim”—a focus on the “culture of poverty” as opposed to the material conditions that opponents viewed as the key causal force. Wilson (1987) and others have argued that the heated response to the Moynihan report made it difficult for subsequent scholars to examine possible differences in family schemas between blacks and whites. Debate swirled around the implication that the circumstances of blacks could be improved dramatically only if schemas associated with a “culture of poverty” could be altered. Critics argued, as we have pointed out, that these schemas do not “float free” but were linked to material circumstances. They pointed to these materials as proper places for intervention.

This debate is declared moot in TCA. TCA (like Moynihan’s original argument) emphasizes the interaction of materials and schema over time. Or as Morgan, McDaniel, Miller, and Preston (1993, p. 824) stress:

Those explaining contemporary differences need to recognize that these may be rooted in long-standing differences in family and household processes, differences that are nurtured by enduring traditions of racial separation and exclusion. Each generation does not invent its own family structure anew but adapts, in the light of current conditions, the traditions and practices it has inherited from the past. The cultural, social and economic history of African Americans is radically different from that of white Americans. It should not be surprising that their family structures have persistently reflected some measure of these differences throughout the 20th century.

However as we look into the future, we should not project immutable historical and cultural continuity. In fact, if we adopt a decadal time scale, “traditions of racial separation and exclusion” are becoming more muted. In Quinn’s terminology, schemas that persist are “cultural models” that provide solutions to common and important conjunctures. It is quite likely that cultural models will diffuse to social niches that share material and institutional characteristics. For instance, Edin and Kefalas (2005) argue that similar cultural models pervade the poor white, black and Hispanic communities they study in the northeast.

### Contemporary Religious Differences

Religion has multiple interrelated dimensions—including denomination (e.g., Protestant, Catholic, etc), public participation (e.g., church attendance), and intensity of belief (e.g., the “importance of religion in your life”). Hayford and Morgan (2008) show that the later dimension, a report of “importance of religion in your life” produces a large fertility difference between those who are more (religion is “very important”) and less religious (religion is “somewhat or not important”) in the U.S.—a difference of roughly 0.5 in both the TFR and in mean intended parity.

Further, Hayford and Morgan (2008) show that the intent for more children among the religious reflects more traditional “family values” (see Hayford & Morgan, 2008, table 3). One way to interpret this finding is to view the more religious as frequently adopting the *family first* operational schema described above—that one should marry and have a family and that this goal should take precedence. The pursuit of these goals will produce a meaningful and fulfilling life. The more religious have identities that prime persons to invoke this schema when conflicts arise between family and other domains of modern life. In addition, religious persons live in communities, attend churches, and have social networks (i.e., materials) that encompass and prime those living in religious niches to behave in ways that give primacy to having a family.

So far our explanation is little different from that offered by those that posit ideological change as the engine driving the second demographic transition. Lesthaeghe, van de Kaa and colleagues (e.g., see Lesthaeghe & Neidert, 2006) would say that the *family first* schema is fading and *individual first* is becoming dominant. They view the ideology of individualism and self-actualization as a secular trend, one that foreshadows the spread of very low fertility. The weakness of this view, in our opinion, is the same weakness of secularization arguments in general. Specifically,

traditional schemas can be buttressed by political movements and/or recast in ways that give them renewed power. As Hayford and Morgan (2008, p. 1180) argue:

The joint association between importance of religion, fertility intentions and family values reflects the connection between religion and family in the construction of personal identity. During the period under study, the association between religion and conservative family values is strong, visible and vocal.

Specifically, religious-based political organizations like the Christian Coalition and Concerned Women for America advocate a return to Christian values; their agenda prominently features pro-family policies such as opposition to abortion and gay marriage and abstinence-only curricula in school sex education programs. Outside of the explicitly political arena, movements such as the Promise Keepers (encouraging Christian men to become involved husbands and fathers) and True Love Waits (promoting abstinence until marriage among Christian teenagers) reinforce the association between religion and traditional family orientations. These organizations are largely led by conservative Protestants, but attract mainstream Protestant and Catholic members as well. The visibility of religion and “family values” in American public and political discourse may increase the salience of both religion and fertility as elements of personal identity in the United States. For example, Lesthaeghe and Neidert (2006, 2009) show strong state- and county level associations between levels and timing of fertility, cohabitation and marriage, and political indicators such as the percent voting for G.W. Bush in the 2000 and 2004 presidential elections. They argue that these aggregate associations are explained by the density of secular vs. religious orientations across states and counties in the United States. Religious and conservative family values are conjoined by the “culture wars” of recent decades.

There are numerous schemas at play in American society and many are widely shared, suggesting that “culture war” is less apt than terms like cultural “battles” or “skirmishes.” Nevertheless, these skirmishes have received great media attention and constitute historical “events” that have impacted the social landscape and individual identities. This social history produces the new structure (i.e., patterned behavior) observed. The higher fertility of those for whom religion is an important aspect of identity flows from these forces and helps to perpetuate them. The longevity of this new structure depends upon the micro-macro dynamics at the intersection of contemporary ideology, politics, religion and the family. The outcomes will be visible in institutional change, in important sources of contemporary identity, and in behavior such as fertility.

### ***Persistent Fertility Difference in East and West Germany***

Differentials persist in Germany as well. East Germany experienced a rapid and drastic decline in fertility after the fall of communism. For example, while there were about 180,000 births in 1990, most of whom were conceived prior to the fall of the Berlin Wall, there were only 110,000 a year later, corresponding to a 40% drop

in a single year (Kreyenfeld, 2003). The East German total fertility rate was, despite a gradual decline, above the West German level throughout the 1980s, dropped from 1.5 in 1990 to 1.0 in 1991, and reached its lowest level of 0.8 in the years 1992–1995. Since then, the East German TFR has steadily increased, approaching and very recently overtaking the West German level (Goldstein & Kreyenfeld, 2010). Consistent with this convergence in period fertility rates, young East German cohorts who started their primary childbearing careers after unification have cumulated cohort fertility levels that are comparable to, or even slightly higher than, those of their West German counterparts (Konietzka & Kreyenfeld, 2007). Despite this convergence in the level of fertility, which co-occurs within a convergence of general living conditions, there remain important differences in the pattern of fertility (Goldstein & Kreyenfeld, 2010). In particular, East German women continue to have their children earlier than their West German counterparts, and fertility occurs more often outside marriage and within cohabitation (thus producing higher levels of single parenthood). In addition, despite higher levels of unemployment and greater economic uncertainty, the cumulative fertility rates of young East Germans exceed those of young West German cohorts.

In order to investigate this apparent paradox, Bernardi et al. (2008) study the childbearing schema of young adults in two German towns: Rostock, in eastern Germany, which has experienced a substantial transformation with considerable economic uncertainty since 1990, and Lübeck, in western Germany, that has had a more gradual and continuous development in the last decade. The qualitative interviews by Bernardi et al. reveal that the significance of job and economic security for the prospects of parenthood varies according to the context. For example, while job security is crucial to the western Germans' idea of achievement and as a foundation for family formation in a sequential pattern, in eastern Germany job security is only one of the parallel paths in one's life course and thus investments in the job and private life are conducted in parallel. The western German couples in the study thus tend to hold a schema of "the integrated life", which is "connected with a straight career path, [...] with a lack of discontinuity between the stages of the life cycle, and in which perceptions of family are centered on a male breadwinner model." East German respondents, on the other hand, expressed a schema of parenthood that is better classified as a diversified portfolio of priorities in which competing goals need to be "balanced" without strictly sequencing their achievements. As the attainment of the west-German model is often not feasible due to the high level of job and economic uncertainty in eastern Germany, respondents increase their chances to satisfy their life-course priorities by accounting for the unpredictability of their environment. For example, Bernardi et al. show that respondents in Rostock frame educational and occupational interruptions not as defeats or accidents, but rather they talk about them in terms of opportunities, including opportunities to have children.

These different schemas are consistently associated with the earlier transition to first birth in the eastern German city, and the rising childlessness and the faster transition to second births in the western German city. On the one hand, Bernardi et al. argue that once western Germans decide to become parents, they have settled



most issues related to their working lives and have overcome the feeling that their lifestyle may be threatened by children. With the exception of health and other biological limits there are thus few other unpredictable obstacles to having a second or third child (provided it is desired). The critical issue determining whether to have two or three children, therefore, is whether or not the respondents succeeded in starting with family formation at all, given the emphasis on strict sequencing and high achievements. On the other hand, respondents in the eastern German sample expressed more flexible attitudes to the timing of parenthood, reflecting the generally high level of economic uncertainty in the region that renders the attainment of stable careers and economic stability substantially less predictable. Bernardi et al. however argue that these attitudes that encourage a first birth despite economic uncertainty in eastern Germany may also be a factor that delays successive childbearing. In particular, the desired balance between family and employment has to be re-established and re-evaluated before every successive childbearing decision.

Despite these differences, note that both the “sequencing schema” in western Germany and the “balancing schema” in eastern Germany are consistent with the more fundamental schema that views planned parenthood as a strategy for dealing with the trade-offs associated with childbearing. In neither context is fertility “accidental”; in both eastern and western Germany, the qualitative interviews document a considerable level of life-course planning and foresight, and variants of fundamental schemas arise as a result of the different contexts with substantial differences in job and economic security.

## Conclusion

There is a vast literature on fertility decline and on contemporary low levels of fertility. We apply our broad theory of social change, the theory of conjunctural action (TCA), to organize and interpret this literature. In many respects, the TCA fits comfortably with the existing literature—a literature that features the import of ideological and perceptual changes alongside ones in material resources. The TCA framework is useful because it conjoins the virtual and material and focuses attention on their interaction and mutual constitution, moving us away from fruitless debates of culture versus structure, and stressing how significantly the interaction of diverse structural elements matters for demographic outcomes. In the next two chapters we focus on how TCA can be applied to more specific research questions.



## Chapter 4

# Social Class and the Timing and Context of Childbearing

*Karen grew up in inner city Philadelphia. She started seeing Bill, a 20 year-old handyman, when she was 16 and soon became pregnant. Karen dropped out of high school during her third trimester, and moved in with Bill. Karen and Bill lived together for about a year and a half before they broke up. Karen now lives at home in a small apartment with her mother and her young daughter, Alexis. Karen hopes to earn her GED 1 day, but for the time being, she is busy raising Alexis and looking for a job with decent pay.*

*Felicia grew up in Winnetka, Illinois, a northern suburb of Chicago. She received a Bachelor's Degree from Wesleyan University and then went on to earn an MBA from the Wharton School at the University of Pennsylvania. Felicia then moved to New York City to take a position as an investment banker for a large firm in the financial industry. She worked hard, putting in about 65 h per week. By the time she was 29 years-old, she had already been promoted and was next in line for a position as Vice President in her division. Yet Felicia had always wanted children and began becoming more receptive to the idea of a serious relationship. She began seeing Ben, an attorney, whom she met at a friend's party. Ben and Felicia were living together within a year and married within 2 years. They had their first child, Byron, when Felicia was 33.*

These biographical sketches, inspired by qualitative accounts of lower-class and upper middle-class women's lives (e.g., Edin & Kefalas, 2005; Blair-Loy, 2003; Kaplan, 1997; Orenstein, 2000; Waller, 1999), describe the lives of two white women—a tiny fraction of the nearly 62 million women of reproductive age in the U.S. today (U.S. DHHS, 2005). We selected them to illustrate striking differences in the typical paths by which lower class (LC) and upper-middle class (UMC) women create their families, differences borne out by national statistics and a wealth of research.

The primary goal of this chapter is to elucidate how the Theory of Conjunctural Action (TCA) provides a lens that enriches understanding of social class differences in the timing and context of childbearing in the United States today. We proceed as

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follows. First, we briefly discuss the concept of social class. Using a simple measure of class, we present recent data drawn from the 2002 National Survey of Family Growth (NSFG) to examine variation in the timing of childbearing and the relationship context of childbearing.<sup>1</sup> Second, we present an explanation for these patterns grounded in the TCA, exploring the schematic and material structures related to childbearing and the ways these structures play out in the conjunctures that shape family formation patterns over the course of a woman's life.<sup>2</sup>

This is potentially a large and complex undertaking. Given space limitations, we omit important dimensions necessary for a more complete explanation. Foremost, we focus on social class rather than race and ethnicity or the intersection between the two.<sup>3</sup> Second, although men appear in our account tangentially, we address these issues from the perspective of women. This decision is based, in part, on the greater amount of research about women's family formation trajectories, although the stock of research about men's family formation is growing (e.g., Coltrane, 1997; Gerson, 1993; Marsiglio, 1998, 2004). Inclusion of men would be a useful extension to this chapter. Last, we focus on modal, archetypal differences between social classes—that is, dominant behavioral patterns of, and ideas about, family formation within each class.

## Social Class Variation in the Timing of Family Formation

In this chapter, we draw on the work of McPherson (1983, 2004), whose conceptual model of social space arrays members of a society along dimensions that are consequential for social life. This n-dimensional space is, in effect, a map of the social

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<sup>1</sup>Throughout the paper, we focus primarily on the distinction between marital and nonmarital childbearing. Increasingly, nonmarital childbearing occurs within cohabitation (Raley, 2001). Although cohabitation has increased among couples of all classes, childbearing within cohabitation is higher among LC women (Manning, 2001).

<sup>2</sup>We use the term *family formation* to reference both union formation (e.g., marriage) and childbearing.

<sup>3</sup>Race/ethnicity and social class both interact and have independent effects. As to the former, Blacks and several subgroups of Hispanics are economically disadvantaged compared to Whites, making it sometimes difficult to disentangle race/ethnicity from social class. Among married-couple families, for example, the percentage living under the poverty threshold is 14% for Hispanics, 8% for Blacks, and just 3% for non-Hispanic Whites. For mother-only families the analogous figures are 43, 42, and 26% (Proctor & Dalaker, 2001). Evidence of independent effects includes the finding that more highly educated individuals in all racial and ethnic groups are more likely to marry and to stay married (Goldstein & Kenney, 2001; Martin, 2006), but that Blacks of all social classes are less likely to do so than Whites. One study examines the marriage intentions of White, Black, and Hispanic cohabiting women. It finds that Black cohabiting women are less likely than White or Hispanic women to expect to marry their partners, even after controlling for the education of both the women and their partners, and their partners' incomes (Manning & Smock, 2002). A general observation about the body of research on race/ethnicity and family patterns is that it has been unable to "explain away" racial and ethnic differences even when controlling for a host of independent variables.

ecosystem.<sup>4</sup> Among the most consequential dimensions in McPherson's scheme are those that define locations in the socioeconomic hierarchy, such as education, income, wealth, and occupational prestige. We use the term "social class" to refer to discrete locations along this hierarchy. Our focus is the contrast between lower class (LC) and upper middle class (UMC) women. In the data we present next, we follow a good deal of research in using educational attainment as an indicator of social location (e.g., Ellwood & Jencks, 2004). While admittedly limited, one's own education, or that of a parent, is a straightforward measure, available in nearly all social surveys, and generally does not change over the course of adulthood. Moreover, as arguably one of the primary measures of "human capital" (i.e., the qualifications one brings to the labor market), educational attainment proxies the job, and thus earnings, prospects of individuals and families. In later sections of the paper, however, we draw on qualitative research that has adopted categorical concepts of class. Throughout, we use the term "class" as a marker of social location, without making a claim that discrete classes actually exist.<sup>5</sup>

Figure 4.1 displays the central difference that provides the focus for our discussion. The data are drawn from the 2002 National Survey of Family Growth, and refer to the relationship context in which women born in 1968–1972 had their first child. Among UMC women—as defined here, women who obtained a Bachelor's degree—82% were married at the time of childbirth; among LC women—those who completed high school or had less education—only 46% were married. The differences seen here mirror those documented elsewhere (e.g., Ellwood & Jencks, 2004; Hoffman & Foster, 1997; Schoen & Tufis, 2003; South, 1999).

Figure 4.2 provides another perspective on this comparison by showing the timing of marriage and childbearing among women whose family backgrounds differed by class. We compare women whose mothers attained less than a high school degree (LC background) with women whose mothers obtained at least a Bachelor's degree (UMC background).<sup>6</sup> As before, the data refer to women who were 30–34 in 2002 (born between 1968 and 1972).

Women with UMC backgrounds both marry and have their first child at later ages than women with LC backgrounds, but the gap in age at childbearing is far greater than the gap in age at marriage. Among UMC women, the proportions marrying by

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<sup>4</sup>The metaphor of a societal ecosystem is a useful one. The elements of an ecosystem in nature can be large or small—ranging from a climatic zone to a small ant colony. The elements of the ecosystem are interdependent, and over time they collaborate in supporting the status quo and compete for the ability to change it. The actions of individual plants and animals are critical to affecting the dynamics of the system as a whole.

<sup>5</sup>Some scholars point to the close interrelationships among indicators of socioeconomic status and argue that social locations form meaningful categories such as poor, working class, lower middle class, middle class, upper middle class and so on (Lareau, 2003). Others contend that the concept of discrete social classes is not meaningful in socioeconomically fluid societies, and that continuous measures of income, education, or the "SEI" (i.e., a measure composed of income, education, and occupational prestige) better capture the location of an individual or family in the hierarchy. The debate on categorical versus continuous measures is longstanding (e.g., Grusky & Sørensen, 1998; Hout & DiPrete, 2006; Weeden & Grusky, 2005). Because our aim in this chapter is to contrast

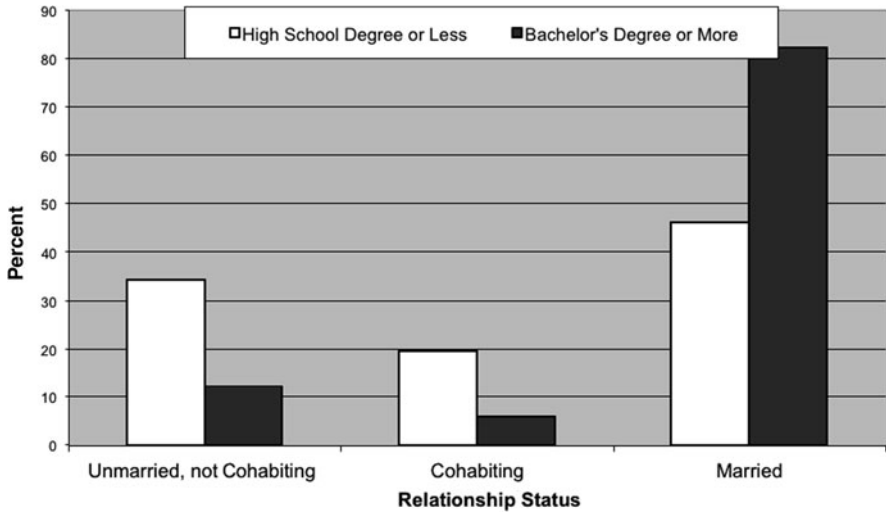


Fig. 4.1 Relationship status at first birth, 30–34 year old women

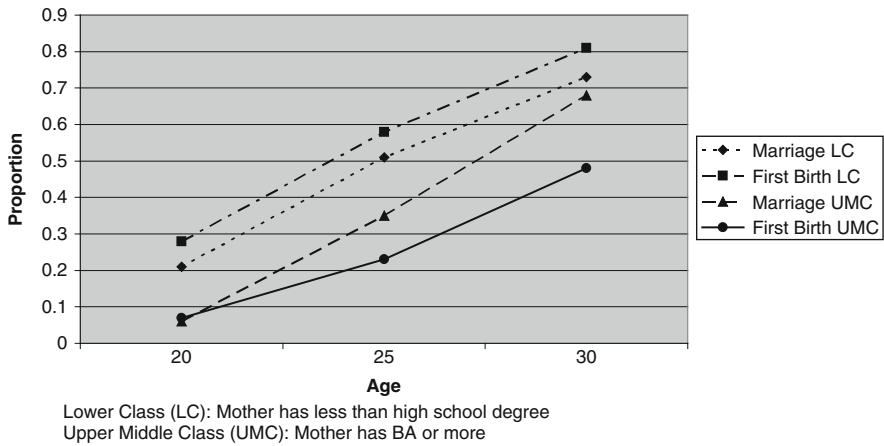


Fig. 4.2 Marriage and first birth by specific ages (30–34 year old women)

individuals and families with different relative social locations, we adopt an agnostic stance with respect to this debate.

<sup>6</sup>We rely on mother’s education to tap social class for some measures of family formation given the endogeneity of schooling and family formation decisions (e.g., Brien, Lillard, & Waite, 1999; Upchurch, Lillard, & Panis, 2002). We use less than high school given temporal trends in educational attainment; when using mother’s education as an indicator of class, we believe not finishing high school better taps low social class.

each age invariably exceed the proportions who have become mothers. The opposite is true for LC women, who are more likely to have become mothers than to have ever married at ages 20, 25 and 30.

## Structure, Social Location, and Family Formation

Agency also differs in extent, both within and between societies. Occupancy of different social positions—as defined, for example, by gender, wealth, social prestige, class, ethnicity, occupation, generation, sexual preference, or education—gives people knowledge of difference schemas and access to different kinds and amounts of resources and hence different possibilities for transformative action. (Sewell, 1992, p. 21)

The following sections illustrate how the TCA can explain social class variation in the timing and relationship circumstances of a first birth. Our explanation draws on three major ideas that are explicit or implicit in the above quotation. First, structures, defined as recurrent patternings of social life are differentially distributed across social space. Therefore, individuals' locations in that space affect their relationships to structures, including their access to both the schematic and material components of structure.<sup>7</sup> Second, drawing conceptually on a life course approach (Elder, 1975; Shanahan, 2000; DiPrete & Eirich, 2006), we argue that individuals' relationships to structures are influenced not only by their current social location but also by the social locations they have occupied before, including their exposure to schemas and acquisition of material resources in those settings. Third, individuals' locations in social space affect the conjunctures they experience, what they bring to those conjunctures, how they construe the conjunctures, and what schematic and material resources they draw upon to resolve them. Figure 4.3 illustrates these pathways linking social locations, the life course, and family formation outcomes.

In developing our explanation, we draw on a voluminous qualitative and quantitative literature on family formation and other aspects of life in different social classes or locations in the socioeconomic hierarchy. We attempt to demonstrate that the TCA is not only consistent with this body of literature, but usefully integrates the insights it provides. While we do not offer a formal test of the TCA model (Gorski, 2004), we conclude by suggesting some hypotheses that could be tested in the future and pointing to research and measurement needs.

Our chapter proceeds as follows. We begin by discussing the concept of “structure” and what we term the “ecology of social space.” Here we elaborate the argument that UMC and LC families experience distinct employment and family-related structures. Second, we discuss how, over the course of development, these

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<sup>7</sup>We organize our discussion around structures that are defined in terms of life domains, especially work and family. One can also conceptualize structures in terms of locations in social space—e.g., sex, race and ethnic group membership, and socioeconomic status. One might also conceptualize the relevant structures as “class structures”, but we believe it is most appropriate to place the central focus on essential life domains and explore how they vary over social space rather than taking the opposite approach.

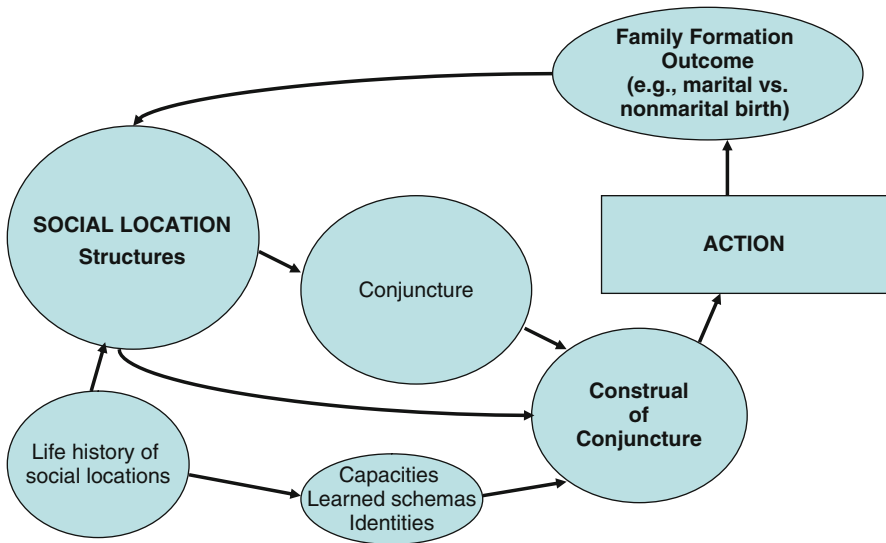


Fig. 4.3 Pathways linking social location to family formation outcomes

distinct structures are incorporated in individuals in the form of schemas and materials. Third, we turn our focus to family formation “conjunctures,” conjunctures referring to short-term configurations of structure in which there is a potential for action. In this section we discuss how location in social space affects the characteristics of the conjunctures one encounters. Taking a specific family formation conjuncture as a case study, we examine how class location might affect the material characteristics of this conjuncture, the schemas through which it is construed, and its resolution. We conclude with reflections on how the perspective TCA brings to understanding class variations in nonmarital childbearing differs from traditional demographic approaches, and on the ways in which demographic approaches might be expanded to incorporate elements suggested by TCA.

### *Structures and the Ecology of Social Space*

*Karen and Felicia entered the reproductive years having experienced very different constellations of structures in their early lives. Karen, from inner-city Philadelphia, was born to a divorced woman who had two sons by her former husband. Karen’s father visited her occasionally during her preschool years but then dropped out of her life. During the first 4 years of her life, Karen lived with her brothers, her grandmother, who helped to take care of the household, and her mother, who supported the family by working as a waitress. Her mother sometimes had to take two jobs simultaneously to make ends meet. Karen formed a close relationship with James,*

*with whom her mother began to live when she was four, but the relationship lasted only 4 years until James and her mother split up.*

*Felicia grew up living with both of her biological parents and two older brothers. Until her older brother left for college when she was 13, there were no perturbations in her family life. Her mother taught school and handled the family's management, arranging for transportation, piano lessons, overseeing homework and attending teacher conferences. Her father, a successful businessman, was often gone on business but took an active role in his children's lives when at home.*

Sewell (2005, p. 209) depicts societies as “sites of a multitude of overlapping and interlocking cultural structures.” Within societies, structures that pattern how people provide for themselves and their families coexist with structures that shape how they bear and raise children. Within each general class of structures, there are numerous substructures. In the realm of the family, for instance, there are norms about obligations to blood relatives, the traditional nuclear family, grandparenthood, cohabitation, marriage, and divorce, and structures around the planning of a birth, pregnancy, and becoming a parent. Within the economic domain, there is also a range of substructures: capitalist or other economic systems, employment and entrepreneurship, career ladders, employee benefits, and work schedules.

One can imagine placing not only individuals on an n-dimensional map of social space (McPherson, 1983, 2004), but also the structures in which they participate. While some structures would occupy the entire map, others would take different forms in different segments of the map, while still others would be highly localized. Moreover, all points on the map would be layered with numerous overlapping structures.

Extant research on patterns of social life in the lower and upper middle classes provides useful generalizations about the nature of structures experienced by people located in different parts of social space. For example, many studies have documented contrasts in the patterns of family and social relationships in LC and UMC life. Generalizations include the primacy of family ties among the less advantaged (e.g., Komarovskiy, 1967; Stack, 1974; Newman & Massengill, 2006; McPherson, Smith-Lovin, & Brashears, 2006). As Carol Stack (1974) suggested several decades ago, LC families rely heavily on kin, including extended kin and “fictive” kin, for material support. LC families are also less likely than UMC families to move long distances, so resources tend to remain close at hand and children grow up in a circle of friends heavily dominated by kin (Lareau, 2003). Although UMC families also support each other in times of need (Hansen, 2005), they tend to interact with a broader set of friends, neighbors, and work associates in addition to kin. For material support and care, UMC families can rely on their jobs and the market to purchase substitutes for those provided by kin in LC families.

Family structures overlap in social space with employment structures, and are interdependent in various ways. In the UMC, employment structures are patterned by the need for unique skills and abilities supplied by specialists with advanced education and training. UMC employees are expected to be self-motivated, take initiative, and demonstrate commitment by working long hours when necessary without overtime pay. They are rewarded with high salaries, job benefits, and, often,



flexible hours. From the employee's perspective, a job is a "calling" that demands single-minded allegiance and serves as a source of identity and self-fulfillment<sup>8</sup> (e.g., Blair-Loy, 2003; Orenstein, 2000). Job specialization means that workers often relocate to obtain appropriate employment, resulting in more dispersed kin networks. UMC families' broader social networks are formed, in part, through education and employment, and they provide specialized forms of social capital useful for career advancement—capital that kin cannot generally provide. By contrast, LC workers tend to be unskilled and interchangeable. They receive low pay, few benefits, and little flexibility in job schedules (Shipler, 2004; Wilson, 1996). LC families are less affluent, but they do tend to have nearby kin to help meet needs they cannot afford to fulfill through the market.

While motherhood is a central source of identity, meaning, and purpose for women of all social classes, this is especially salient among LC women because of their limited access to alternative sources of status. Although LC women acknowledge the benefits of planning to have children, they approach the use of contraception with ambivalence. Talk of having a baby together is a marker for intimacy for many poor couples, and the abandonment of contraception is taken to signal commitment. Babies—planned or unplanned—are viewed as precious gifts; they create a bond between mother and child that cannot be broken, their high value echoing the central importance of kinship in LC life (Luker, 1996; Edin & Kefalas, 2005; Waller, 1999).

Additionally, bearing a child allows young women with few attractive options for early marriage or employment to assume an esteemed and responsible adult role. Women's success in this role is demonstrated publicly through the care with which the child is groomed and celebrated through the exchange of baby pictures with friends and family (Lustig, 2004). It is viewed as "natural" for women to become mothers in their teens or early adult years. Delaying childbearing to build a career is perceived as selfish and unnatural. While marriage is highly regarded and desired, it is thought to be a capstone to other life achievements (which may or may not be forthcoming) and not a prerequisite for childbearing (e.g., Cherlin, 2004; Edin & Kefalas, 2005; Waller, 1999). Children are considered an unconditional obligation whether one is ready for parenthood or not, and one has more control over being a good parent than over whether a marriage will last (Waller, 1999, 2002). Marriage, on the other hand, is fraught with the risk of divorce and is seen as appropriate only when a male partner has proven his trustworthiness and the couple has accumulated subjectively sufficient material resources (Edin & Kefalas, 2005; Smock, Manning, & Porter, 2005).

These interrelated structures take markedly different forms in the UMC. Like their LC counterparts, UMC women embrace motherhood. However, they are less likely than LC women to see it as essential to a meaningful life (Sayer, Wright, &

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<sup>8</sup>The concept of a job as a "calling" demanding single-minded allegiance reflects traditional sex roles that assigned bread-winning responsibilities exclusively to men. Women have adopted the schema while at the same time developing competing schemas for "work-family balance."

Edin, 2005). UMC schemas of parenthood emphasize a specific sequence of events that requires planning, often starting with dating. One UMC young woman's comments illustrates this point: "I feel like I have to meet someone now because you want to date for a couple of years before you get engaged, and then don't want to just get married and have babies right away, you want a married life first. So, suddenly, every date counts, and you think, 'I can't waste time with you because you're not a keeper'" (Orenstein, 2000, p. 35). Typically, the woman prevents conception until she and her husband decide that they are ready—mature enough, well established in marriage and career, and financially prepared—to have a child. At that point, pregnancy is actively sought, by discontinuing contraception and sometimes by timing or increasing the frequency of intercourse or seeking preconception medical care (Miller, 1986).<sup>9</sup> Marriage is widely seen as a prerequisite to childbearing, partly for financial reasons, but also because UMC women view raising a child alone as "too hard" (Orenstein, 2000, p. 32). It is too hard in part because UMC women hold themselves to a stringent standard of childrearing—what Annette Lareau (2003) calls "concerted cultivation." This standard calls for intensive parenting, driven by a child's needs and potential, in which children are actively trained to develop skills and self-confidence through participation in formal activities and interactions with adults. This time-intensive and costly approach to parenthood is often explicitly linked to children's future success. Even when not explicitly acknowledged, the skills inculcated in UMC children through these parenting practices are well matched to the requirements of functioning in UMC jobs and institutions (Hays, 1996; Lareau, 2003). By way of contrast, LC mothers are likely to believe that, given good mothering, defined as providing basic supports, children develop naturally, an orientation Lareau (2003) terms "natural growth."

It is important to underscore that the demarcation of schemas across the LC and UMC is not absolute, with many elements present across the economic spectrum. The high regard for marriage and motherhood, the image of a bad mother as someone who puts her own needs ahead of those of her children, and the importance of financial independence for marriage are all schemas strongly integrated into both LC and UMC family formation structures (Hays, 1996; Lareau, 2003). Further, the social space occupied by LC and UMC women is not sharply bounded. LC women are highly aware of UMC birth planning schema and parenting practices (Edin & Kefalas, 2005; Hays, 1996). They endorse the value of planning births and delaying pregnancy until after marriage (Edin & Kefalas, 2005; Luker, 1996). They also articulate desires for high-status professional occupations during their teenaged years, despite the lack of realistic plans or resources to achieve them (Shipler, 2004).

Some UMC women have children outside of marriage, adopting the LC schema that a husband would be "icing on the cake"; if there is no appropriate marriage partner in sight, having a child as a single woman may be the best option (Hertz, 2006; Orenstein, 2000). However, this course of action is rare. Blair-Loy (2003) also

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<sup>9</sup>Among those UMC women unable to conceive, adoption and assisted reproductive technologies provide alternative pathways to parenthood.

notes that some UMC employed mothers adopt views of children as autonomous and resilient in the face of pressures for intensive mothering, views that are consistent with LC child-rearing structures. As some theorists have pointed out (e.g., DiMaggio, 1997; Swidler, 1986), individuals draw on complex and diverse cultural repertoires to motivate their actions. They learn of structures that are distant from them through exposure to the media, through their own movement in social space, and through “weak ties” in their social networks (Granovetter, 1973). However, recent work suggests that LC individuals may experience a wider and less coherent set of family-related structures than their UMC counterparts, in that disadvantaged neighborhoods exhibit greater variability in views about the ideal sequence of a romantic relationship and views on the acceptability of adolescent pregnancy than affluent neighborhoods (Harding, 2007). Although such differences in structural heterogeneity have received little study, they may have significant consequences for family variation and change.

### *The Incorporation of Structure*

Structures are patterns. They do not affect individual action directly, but through the materials and schemas that constitute them. These components are stored in the physical world and also in the minds and bodies of actors. The inculcation of structure occurs over time and over the course of human development. While this is an on-going, life-long process, that which occurs during childhood has especially important implications. TCA asserts that structures have a profound influence on the tasks of human development, and on the bodies and minds that are the products of development. Three specific aspects of development—the learning of schemas, the development of social, emotional, and cognitive function, and the organization of identities—are particularly relevant.

First, an abundant literature in psychology and neuroscience points to the importance of repeated co-occurring elements of experience—that is, the experience of structures—in shaping the development of cognitive schemas (e.g., Waxman & Lidz, 2006; LeDoux, 2002; D’Andrade & Strauss, 1992; Quinn, 2006). Schemas learned in infancy and childhood may be particularly significant because they are less likely to be filtered through previously learned schemas and more likely to be learned under conditions of emotional arousal—a condition that enhances brain plasticity (Quinn, 2006). If this is correct, then childhood social class should play an especially significant role in shaping “deep” schemas that lay the foundation for later learning and functioning.

Second, exposure to structures influences not only the mental content of the brain but also how it functions. Over the course of development, children acquire the ability to think abstractly, regulate emotional impulses, “read” the motives of others, and formulate plans for action. Genes and environment work together to shape these abilities in a cumulative, path-dependent process (Shonkoff & Phillips, 2000; Halfon & Hochstein, 2002; Boyce et al., 1998). Research on human development

implicates many aspects of structure, including economic well-being (Duncan & Brooks-Gunn, 1997), family structures and instability (Cavanagh & Huston, 2006; Evans, Gonnella, Marcynyszyn, Gentile, & Salpekar, 2005; Hofferth, 2006), and family conflict and parenting practices (Taylor et al., 2004a, 2004b, 2006) in guiding the success of these developmental tasks. These abilities become part of the material endowments that individuals carry with them.

Third, the schemas and abilities individuals acquire become the raw ingredients for the development of identities, or relatively coherent representations of the self and one's relation to the world. Individuals are not merely the passive recipients of structurally-determined identities but rather shape their own identities out of the schemas and materials available to them through their choices about courses of action (Holland et al., 1998; Côté & Levine, 2002). Social identity is particularly strongly linked to structure because it represents how the individual fits into the world, i.e. what roles she performs and what groups she belongs to. Social identities are shaped and sustained through the engagement of the individual with structures (Serpe, 1987).

The concept that an individual's background experience affects reproductive and family behaviors is certainly not new to social demography. "Family background" variables are routinely addressed in studies of family and reproductive outcomes, and the concept of the life course underpins most demographic research. However, the mechanisms through which structure operates to shape those background experiences and to imprint them on individuals and their reproductive behaviors have not been adequately developed (for exceptions, see Wu & Martinson, 1993; Thornton & Camburn, 1987; Cunningham & Thornton, 2006a, 2006b).

*Karen and Felicia learned very different schemas about families when they were growing up. Karen experienced "family" as a multi-generational, woman-centered institution in which men were less consistently present than were women. Felicia's experience was consonant with the culturally dominant image of family—consisting of a husband and wife who each take on strong but differentiated roles in raising their children. Karen knew the culturally dominant schema—it pervaded the school books and television sitcoms of her era, but while for Felicia it was a schema she lived and took for granted, for Karen it was something that other people did, something from which she was excluded. For Felicia, the nuclear family model was something that reliably provided love and security. Karen's brief experience of the nuclear family model, during the years when her mother lived with James, produced a temporary closeness followed by loss.*

*The two women's childhood experiences also influenced the schemas of adult success that they learned. Some of their experiences were similar. Both learned from observing their mothers that women can succeed in the domain of paid employment, but Karen's image of paid work was colored by the exhaustion she saw in her mother's face when she returned late at night from her waitress jobs. Felicia never experienced a woman providing the sole or major support for the family as did Karen, but learned the schema of adult career success from her father's success in business. This schema was imbued with special meaning through the emotional imprint of a close father-daughter bond.*

*Felicia's and Karen's childhood experiences also left material traces in their cognitive and emotional development. Felicia went to an academically demanding sequence of public schools and had a home life where intellectual pursuits were prized and supported. Karen attended a school in a tax-poor district that could offer few opportunities for bright students to get ahead in their studies. At home Karen's mother encouraged her studies but lacked the time and confidence to provide substantial support for them. Felicia became supremely self-confident in social situations. Karen's experiences with the instability and loss of important adult males in her life left her with a sense of uncertainty and longing for intimacy that her mother's and grandmother's caring could not dispel.*

### ***Setting the Stage for Action: Conjunctures on the Path to Family Formation***

The actions that trigger the formation of families occur in conjunctures, which we define as specific, temporary configurations of relevant context that bring together salient aspects of structure with the potential for some outcome of interest. Relevant conjunctures for understanding family formation include all those sets of circumstances that, when resolved, affect the probability of a first marriage or a first birth. Some of these may appear trivial (e.g., an encounter in a school hallway which could lead to a date to meet after school); others may last over some time, involve a larger set of players and structures, and have more important consequences—such as deciding whether to terminate a pregnancy or to form a serious, exclusive relationship that can lead to marriage. The relevant conjunctures also include situations that offer potential for having sexual intercourse, using contraception, undergoing artificial insemination, recognizing the signs of pregnancy and getting a pregnancy test, beginning or ending a relationship, getting engaged, and calling off a wedding.

An individual's location in social space both influences the structures in which the person is engaged and the likelihood of particular kinds of conjunctures. For example, LC women are less likely to meet potential partners at cocktail parties because cocktail parties are not a typical feature of LC social life. UMC women are less likely to visit public health clinics for birth control supplies, because they have access to, and rely on private care. Another example is that LC women are more likely to have a child whose father is in prison—a reflection of structures patterning the consequences of different types of crime as well as the availability of living-wage, legal jobs for those with relatively low levels of education.

Demographic studies have documented the uneven distribution across social class of behaviors and events relevant to nonmarital childbearing. National studies in the United States show that the timing of first intercourse varies inversely with parental education—LC women are more likely to be having intercourse at an early age than are their UMC counterparts (U.S. DHHS, 2005; Cooksey, Rindfuss, & Guilkey, 1996), to do so with an older partner (Manlove, Terry-Humen, & Ikramullah, 2006; Manlove, Ryan, & Franzetta, 2007), and to make the transition to

having sex within a romantic relationship (Kaestle & Halpern, 2005). When teens have their first sexual intercourse, the proportion who use a method of contraception is higher among those with more highly educated parents (Manning, Longmore, & Giordano, 2000; Cooksey et al., 1996). Finally, the probability of having a premarital pregnancy also differs across class lines, with lower parental education predicting a higher likelihood of becoming premaritally pregnant during the teenage or young adult years (Plotnick, 1992; South & Baumer, 2001; Adamczyk & Felson, 2008).

Conjunctures occur over time, and the likelihood of a given type of conjuncture as well as its specific configuration is strongly path-dependent. As an obvious example, the likelihood of discovering an unintended pregnancy is nil for women who have avoided sexual intercourse in all their romantic encounters. On the other hand, the likelihood of having sex with a new partner is greater for those who have already had sex with a former partner (Cleveland, 2003). Because of this path-dependent flow, small initial differences by social class in the timing of first intercourse and the use of contraception can have a significant effect in setting the stage for differences in the timing of pregnancies and their resolution. This path-dependency is explicit in demographic analyses that condition the risk of a subsequent event on previous ones.

The term “conjuncture” implies a “coming together” of circumstances, including both material and schematic components of structures. Social class differences in these aspects of conjunctures are best explored by focusing on a specific example. The conjuncture chosen here is the discovery by an unmarried woman that she is pregnant for the first time. We have already discussed the literature suggesting that this conjuncture occurs more frequently among LC than UMC women. Fortunately, a significant number of qualitative and quantitative studies have documented the material circumstances that frame these conjunctures among LC and UMC women, as well as the ideas and meanings through which women of varying educational backgrounds interpret them, and the potential ways in which they can be resolved.

*At age 16, Karen is finishing her sophomore year in high school. In May she meets Bill, who is 20, lives nearby, and makes a living by doing odd jobs in people's homes and working occasional construction jobs. The relationship becomes more serious over the summer. The first time they have sex, they are careful to use a condom, but by the end of the summer protecting themselves in this way seems increasingly at odds with their commitment to each other. In October, Karen confirms she is pregnant with a home testing kit bought at a downtown drug store.*

*Felicia also begins her sexual experience with her high school boyfriend, but uses oral contraceptives to successfully avoid pregnancy until their relationship ends in the spring of their senior year. At age 19, she is a sophomore in college. She is seriously involved with Jason, a senior at her school who is applying to law schools. As soon as they start having sex, she renews her use of oral contraception. During exam month, however, when her schedule is upset by all-night studying sessions, she forgets to take several of her pills. After missing her period, she visits the student health service and is told she is pregnant.*

Given the complexity of structures and the many ways they may be incorporated in individuals and situations, conjunctures potentially could be characterized in a



multitude of confusing and conflicting ways. The potential cacophony is resolved through the process of construal, during which actors “read” what is salient or relevant in the situation. In construing, the actor tries to make sense of what is going on in a conjuncture, identifies what actions could be appropriate, and considers what is salient to any decision to act. As research on cognitive processes suggests, construal usually happens automatically: individuals do not choose how they interpret a situation (DiMaggio, 1997). The TCA adds two key points about construal. First, individuals draw on the material and schematic elements of structure(s) in construing conjunctures. Second, those schemas and materials that are most fully integrated into identities are most likely to be deployed in construing conjunctures (Stryker & Burke, 2000).

### *Material Elements of Conjunctures*

Material elements of conjunctures include physical characteristics of the setting as well as skills, knowledge, identities, power, and authority incorporated in the set of actors. On average, the material circumstances of a conjuncture in which a young unmarried woman discovers she is pregnant is likely to differ systematically depending on class. Compared to her UMC counterpart, the LC woman is likely to have access to fewer economic resources—either her own or those belonging to family and friends. She is less likely to be in school, and, if she is, to be attending one with high standards and to be achieving at a high level. She is less likely to have access to her own car, and perhaps also to information about abortion providers.<sup>10</sup> On average, she is likely to have a lower potential for future earnings, and is less likely to be in a relationship with a partner who has high earnings potential (Laumann, Gagnon, Michael, & Michaels, 1994; Lichter, McCloughlin, Kephart, & Landry, 1992; Oppenheimer, 1988). Because the LC woman is also less likely to be living with her biological father at the time of the pregnancy, she is less likely to have access to a father’s advice and influence as well as his economic resources. She is likely to have greater exposure to adult and same-age models of nonmarital childbearing and single parenthood and to models of grandparents, sisters, and others helping to raise children they have not themselves borne.

The relevance of these material circumstances is made evident by qualitative studies of premarital pregnancy in which young women describe the conjunctures in their own words. For example, a 17-year-old family planning client quoted in one study spoke of the requirements of educational systems:

If you are in school you need to worry about the new LEAP (Louisiana Standardized Test) tests so that you can graduate, you can’t do that if you are caring for a baby. (Kendall et al., 2005, p. 304)

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<sup>10</sup>This is a speculative claim. Access to information may vary across class lines either because of differentials in the actual availability of abortion services or differences in the extent to which information about abortion is shared within social networks or viewed as accessible through electronic media or other sources. However, existing evidence sheds little light on such differences.



Other materials, including limited resources, capacities for caretaking, and responsibilities for other dependents, dominate the reasons women give in surveys for having an abortion (Finer, Frohwirth, Dauphinee, Singh, & Moore, 2005).

The institutions in which individuals are engaged are also an important part of the material circumstances that frame conjunctures. Religious organizations often take strong stands on abortion, providing women with different sets of information and ideas depending on whether they affiliate with, for example, Fundamentalist or Liberal Protestant denominations (Luker, 1985). The organization at which women confirm their pregnancy—whether a family planning clinic or a pregnancy crisis center—also affects the material circumstances of the conjuncture:

At the clinic they asked for a urine sample and I gave it to them. They said while they were doing that, they wanted me to watch this movie. And I saw the worst movie on abortion in my whole entire life. It was gross. They showed dead babies in garbage cans. (16 year-old black middle class teen, Farber, 1991, p. 703).

The circumstances of partners also create an important material dimension of conjunctures involving a premarital pregnancy. A young woman interviewed by Kristin Luker (1996) focuses on her partner's material circumstances:

I'm really scared about getting married. My boyfriend has a lot going for him, like getting scholarships and going to college. If we get married, and something goes wrong, he can say it's all the baby's fault. (pregnant 16-year-old white woman; Luker, 1996, p. 160).

One kind of material that figures strongly in accounts of premarital pregnancy conjunctures is other people who provide concrete examples of behaviors and their meanings. For example:

The school I go to has about 1100 kids and lots of the girls are pregnant. In the graduating class maybe there is 200 boys and 100 girls and maybe 30 of those girls are pregnant. Some in my class are already working on their second child. Now they talk about finishing school but it is so hard for them to really do it, how would they have the time? (17-year old family planning patient, Kendall et al., 2005, p. 304).

I'm not worried about being married. My momma isn't married, she's staying with my brother's daddy. (15 year old pregnant woman; Kendall et al., 2005, p. 305)

Harris and Cheng (2005) demonstrate strong independent effects of exposure to role models of single parenthood among family members, school mates, friends and neighbors in predicting nonmarital childbearing among young women, independent of an individual's socioeconomic status.

### *Schematic Elements of Conjunctures*

Conjunctures are construed through the mobilization of schemas which give meaning to what is happening and frame potential future actions. The schemas relevant to conjunctures involving a premarital pregnancy have been detailed in numerous qualitative studies. Despite significant limitations in the generalizability of these studies, and the limitation of most either to women having abortions or to those carrying to

term, they paint a remarkably consistent picture of the schemas used to frame an early premarital pregnancy in the United States. On the one hand, these schemas include the ideas that motherhood is a biological and moral imperative, that individuals who become pregnant should accept the consequences of their behavior, and that, because life begins at conception, abortion is equivalent to murder (Luker, 1985; Farber, 1991; Kendall et al., 2005; Sauer, 1974). In the words of women interviewed in qualitative studies,

I just wouldn't take a life, that's all. (16-year-old black lower class teen, Farber, 1991, p. 712)

If you're not willing to take the responsibility, authority of taking birth control, then you shouldn't have the responsibility to have sex—and you know, it's not your right to ruin something like that [the fetus], to ruin someone's life like that. (15-year-old white middle class teen, Farber, 1991, p. 711)

On the other hand are schemas that equate responsible parenthood with planning pregnancy and investing a major commitment of time and resources in raising a child; that view as irresponsible the act of bringing a child into the world without the resources and family stability it needs to thrive; that characterize too-early parenthood as disruptive to the educational and career achievements couples need to ready for marriage and parenthood; and that view a fetus as non-equivalent to a person (Andrews & Boyle, 2003; Luker, 1984; Finer et al., 2005; Jones, Frohwirth, & Moore, 2008). In the words of women who had been or were pregnant:

I can't have a newborn baby and not be able to take care of it, and I would want to give my child, like, everything in the world. (20-year old non-poor unmarried woman seeking an abortion, Jones et al., 2008, p. 91)

It felt that my life was going down the tubes, that it was over if I was actually pregnant. (16-year old black middle class woman who carried to term, Farber, 1991, p. 703)

To me it's not a baby until it gets here, then it's a baby. (17-year-old black middle class woman who carried to term because her pregnancy was too far advanced for an abortion, Farber, 1991, p. 707)

Because abortion has been publicly and widely debated for the past half century, young women are likely to know these schemas regardless of class membership. There is limited evidence on whether their prevalence or salience varies by class. In a study of women having abortions, Finer et al. (2005) find that more highly educated women are more likely to explain their choice by saying that having the baby would interfere with school or career, or that they are not ready for a(nother) child. Most other quantitative studies have used data from the General Social Surveys to examine attitudes towards the permissibility of choosing to have an abortion under various circumstances, ranging from a serious deformity in the child or threat to the mothers health to a desire to end childbearing or “any reason.” These studies consistently show more permissive attitudes among more highly educated women (e.g., Combs & Welch, 1982; Strickler & Danigelis, 2002; Wang & Buffalo, 2004), and larger education differences in approval for “soft” reasons for abortion (not married,

low income, unwanted pregnancy) than for “hard” reasons (baby suffering a defect, life endangered, rape; Benin, 1985).

The qualitative literature which elaborates the schemas has paid little attention to comparing schemas across class. Schemas that portray an early nonmarital pregnancy as an opportunity for personal development for the mother-to-be appear primarily in accounts of LC populations (e.g., Edin & Kefalas, 2005; Waller, 1999), as do cultural scripts that equate conceiving a baby together with intimacy and commitment (Edin & Kefalas, 2005). Both attitude surveys and qualitative studies make clear that nonmarital childbearing is disapproved, although tolerated, across class lines (e.g., Farber, 1991; Sayer, Wright, & Edin, 2005), but acceptance of teen nonmarital pregnancies as gifts is a schema evident mainly in LC accounts (Luker, 1996; Edin & Kefalas, 2005; Waller, 1999).

### *Resolving Conjunctures*

The process of resolving a conjuncture begins with construing “what is going on here.” Construal defines the parameters for resolving a conjuncture. In construal, the brain mobilizes stored schemas that are invoked by the material circumstances of the conjuncture, preferentially accessing those most salient in the actor’s identity (DiMaggio, 1997; Stryker & Burke, 2000). In the case of a premarital pregnancy, however, the material circumstances and relevant identities may be complex, and the resulting construals may invoke multiple schemas that do not all point to the same resolution. For example, Jones and her colleagues quote a poor 26-year old unmarried woman who had conceived with a new partner and had lost custody of her previous children:

I have two kids, and I want to go back with my other two kids. . . I think a lot of times that it’s a baby that I’m killing. I love kids. I love my kids and I love babies. But I got nothing else to do . . . If I get pregnant again but with my ex-husband, I would have it because it’s a baby, and I love babies, and I would have it. (Jones et al., 2008, p. 89)

Furthermore, conjunctures involving an early premarital pregnancy typically involve not only the pregnant woman but her partner, family members, and others. While construal is a process that unfolds within the pregnant woman’s brain, it is also the product of the interaction within the network of individuals who are tied to her in the conjuncture. Symbolic interactionist theories emphasize that outcomes of an interaction depend on the construals of all the actors involved, the process of negotiating meanings, and the relative abilities (because of power and other resources) of actors to influence the outcome (e.g., Burke, 2004; Ridgeway, 2006; Smith-Lovin, 2003). The qualitative literature on premarital pregnancies provides examples of how this interactive process affects the process of construing the meanings and value of the pregnancy and its potential outcomes. A white lower class teenager who carried her pregnancy to term recounts:

My dad was telling me, you know, “It’s your decision to make. If you want to keep it, fine. If you want to abort it, I’m going to tell you right now—we don’t like the idea of you having

an abortion. And we don't like adoption either. . . So they finally decided that I would keep the baby." (Farber, 1991, p. 713).

In the case of an early premarital pregnancy, these interactions are permeated by the emotional intensity of close interpersonal ties and strongly held identities. Accounts of young women deciding on how to resolve a nonmarital pregnancy are replete with images of a highly charged interactive process involving family members and partners, as well as self-representations (Edin & Kefalas, 2005; Mims & Biordi, 2003; Andrews & Boyle, 2003). For example, in the words of a woman who obtained an abortion:

To see my mama cry like that. I don't ever want to put my mother through that kind of pain. I expect a lot of myself. She expects a lot of me, too. It just happened too soon. (Andrews & Boyle, 2003, p. 426)

My mother was like, "Have an abortion." . . . My father, he said we would have supported whatever I do. . . See, my father, he understood I was against abortion. My mother, she didn't know, she didn't understand it. I was scared to do that and she was like, "How can you be scared?" You know, hollering at me and stuff. . . (16-year old black working class teen who carried to term, Farber, 1991, p. 708).

Construals are also shaped by the willingness and ability of participants in the interaction to move the negotiated view of the pregnancy towards their own views. In an example quoted above, a pregnant woman's father begins by saying that what to do about the pregnancy is her decision but then goes on to impose his strong views against abortion and adoption. In another example, a 14-year old Hispanic girl interviewed by Edin and Kefalas (2005, p. 51) describes her partner's response to her pregnancy:

He called me on the phone at school to say, "Get an abortion . . . If you don't get an abortion, we aren't going to be together."

However, the circumstances change when the boy's mother learns of the pregnancy. She convinces her son that it is immoral to end a pregnancy, and he reverses his position.

Ultimately, the pregnant woman must either take action to end the pregnancy or accept the fact of impending motherhood. Because the decision to have an abortion or carry to term is made over time, it is likely to involve reasoned decision-making to some extent. At the same time, because the schemas and materials at play are emotionally charged, and issues central to personal identity are at stake, emotional and motivational processes within the brain will play a major role in shaping the course of reasoned decision making.

In some accounts of premarital pregnancy conjunctures, women portray a strong sense of agency in choosing the outcome that is right for them.

The odds were against my raising the child by myself, and I wanted to beat the odds. I knew I could. I sat down and financially figured it out. . . There were many reasons I decided to keep [her]. I wanted her, and I sat down and figured if I could handle it, and kept her. (White non-poor teen, Farber, 1991, p. 710)

In others, they report feeling they never had a choice to make. The young woman quoted above whose father weighed in against abortion and adoption concludes her narrative by saying “Then it finally hit me: Hey, there’s nothing I can do about it” (Farber, 1991, p. 713). Another woman in the same study reported that “I didn’t really even think about it at all. I was like, ‘Well, I have something to take care of now’” (16-year old black lower class woman, Farber, 1991, p. 704).

The processes involved in the resolution of conjunctures should not differ fundamentally across class lines. However, some aspects may be different. Farber (1991), who conducted interviews with teens who chose to carry their pregnancies to term, found that the middle class teens struggled far more with this decision than the lower class teens, for whom carrying to term seemed the natural thing: “Most of the lower-class teens—especially their mothers—quickly accepted as inevitable that the young woman would keep and raise her child.” (1991, p. 712). Mims and Bordini (2003), who interviewed black families with pregnant teenagers, found that discussions in lower class families were more likely to be framed in absolute terms than were those in families with better-educated parents. That is, better-educated parents were more likely to see a given case as having specific, unusual circumstances that made single, universal rules for action less relevant.

### *Class Differences in Outcomes*

Demographic studies demonstrate strong class differences in the resolution of premarital pregnancies during the teen and early adult years. Once pregnant outside of marriage, women whose parents completed higher levels of education are more likely to end the pregnancy through abortion (Cooksey, 1990; South & Baumer, 2001; Udry et al., 1996). The woman’s own school enrollment, educational attainment, and academic achievement also predict the likelihood of ending a premarital pregnancy through abortion (Coverdill & Kraft, 1996; Leibowitz, Eisen, & Chow, 1986; Liu, 1995; Powell-Griner & Trent, 1987).<sup>11</sup> These effects are substantial. For example, Cooksey (1990) estimates that the probability of a white, premaritally pregnant teen having an abortion is more than twice as high among those with at least one parent who went beyond high school than among those with less well educated parents. Differences by parental education among black and Hispanic women are of similar magnitudes. Marrying in response to a premarital pregnancy has become increasingly uncommon regardless of class, and is equally likely among women with low- and high-education family backgrounds who carry their pregnancies to term (Cooksey, 1990).

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<sup>11</sup>The relationship between parental or own education and the likelihood of resolving a premarital pregnancy through abortion does not likely to be an artifact of differential underreporting of abortions in surveys, since studies that use vital and medical records to assess pregnancy outcomes (e.g., Udry et al., 1996; Liu, 1995; Powell-Griner & Trent, 1987) report the same robust relationships as those relying on survey data.

TCA explains these class differences in pregnancy resolution as a product of the structures in which LC and UMC women are embedded, as these structures influence construal and the subsequent resolution of the conjuncture. LC women and UMC women may construe the conjuncture of an early nonmarital pregnancy differently, in part, because they have grown up immersed in structures that imply very different meanings of the pregnancy and its potential outcomes. A UMC woman is more likely to construe a pregnancy as a threat to her future because the schemas she has learned about potential futures—having a career, marrying, and raising children—are incompatible with early unwed motherhood. A LC woman may be more likely to construe a pregnancy as a maturational challenge because this schema is already embedded in family structures to which she has been exposed (Harding, 2007; Harris & Cheng, 2005).

Construals may differ also because of material differences in conjunctures that make some schemas more salient and powerful than others. The schema linking pregnancy to the disruption of education and career is more likely to be salient to UMC women because they are more likely to be in school and to have high educational aspirations. LC women are more likely to have a mother who took the role of lone provider for their family, making the schema that one can be a good parent with hard work and determination more salient and more powerful.

Second, TCA highlights the importance of class differences in the materials UMC women and LC women can deploy to resolve the conjuncture. UMC women have more financial resources to obtain an abortion; LC women may be more likely to have relatives willing to help care for a child. UMC women know of respected friends who have chosen abortion, friends who can provide both a role model and a source of information about the procedure. LC women have greater access to role models for becoming a single parent.

TCA emphasizes that these schemas and materials are interwoven in the resolution of conjunctures. The availability of role models of single parenthood and the schema that raising the child is the responsible thing to do both co-vary with and mutually reinforce the decision to carry to term. The financial ability to attend college and the idea that a pregnancy threatens a future career are also intertwined and are mutually reinforcing reasons to choose abortion. Further, the structures in which these schemas and materials are embedded are differentially distributed across class lines and are co-variant with other reinforcing structures. The LC woman's greater exposure to family structures based on single parenthood is reinforced by work structures that offer poor earnings potentials and jobs that pale in meaning compared to being a mother. The UMC woman's greater exposure to work structures that emphasize advanced education and devotion to career is complemented by family structures that maximize resources available for investment in the next generation.

This interweaving of materials and schemas in structures, and of structures in social space reinforces the power of structure to shape individual action. The significant actors in pregnancy conjunctures—the pregnant woman and her family members, partner, and friends—typically occupy nearby locations in social space. The action in the conjuncture, then—the negotiations that assign meaning and value to the pregnancy and its potential outcomes—are undertaken by people who tend to

be immersed in the same structures. This action tends to reinforce, rather than conflict with, the materials and schemas the individual actor brings to the conjuncture. The same actors who contribute to the negotiation of the outcome are likely to have shaped the resources, identity and views the pregnant woman brings to her decision.

*Both girls are upset to discover that they are pregnant. Bill and Karen hope to go to college and do not feel ready for either marriage or parenthood. Jason and Felicia face demanding academic challenges that leave little room for marriage or parenthood. Both women want to do the “responsible thing.” For Karen, this means accepting responsibility for her mistake, having the baby, and raising it, with or without Bill. The baby will challenge her to grow into a mature and responsible adult and will give her someone to care for. She will have to delay her graduation from high school, but her mother will help her take care of the baby until she has her degree. Bill and Karen plan to raise the baby together, but will defer marriage until they are financially secure. In the end, Karen realized she had no choice—she just could not go through with killing her baby.*

*For Felicia, “doing the responsible thing” means having an abortion as early as possible in the pregnancy. Both she and Jason agree that it is wrong to bring a child into the world when its parents are not ready to provide it with the time, attention, and material resources it would need to thrive. They agree that to be good parents, they need to continue their educations and become established in a career, and then a marriage. Although choosing to end a pregnancy is difficult, doing it at a stage where the fetus is little more than a group of cells is the best course given the alternatives. In the end, Felicia realized she too had no choice—she just could not let a mistake like this ruin her life.*

But these “typical” outcomes in no way exhaust those possible. LC women have abortions, and UMC women carry to term and keep their babies in many conjunctures involving early premarital pregnancy. The fact that UMC women may struggle more with a decision to carry to term (Farber, 1991) underscores the extent to which this outcome flies in the face of schemas prevalent in the UMC, but does not prevent these women from choosing this outcome for themselves. The concept of “agency” is sometimes used to refer to the ability of individuals to act in ways that defy social structural pressures. But what seems like a counter-cultural decision in one context (e.g., a UMC woman choosing to carry to term) is often highly consistent with other social structures in which she is engaged. Farber (1991) notes that many of the middle class women who carried to term did so for religious or moral reasons. Structures sometimes overlap in space, but the overlap is never perfect. In the case of nonmarital pregnancy, religious structures carry strong schemas about abortion and cross-cut class lines.

In addition, although LC women are less likely to choose abortion, many nevertheless do. Schemas about early premarital pregnancy among LC populations are complex. Quantitative data shows a greater degree of variability in attitudes towards early pregnancy in impoverished compared with better-off neighborhoods (Harding, 2007). Data from the National Survey of Family Growth shows that women who have not gone beyond high school are *less* likely than college-educated



women to say is okay to have a child outside of marriage (U.S. DHHS, 2006).<sup>12</sup> LC women have access to many conflicting schemas in construing the conjuncture of an unwanted pregnancy, and which schemas emerge from the process of construal is by no means preordained. The conjunctures we have been developing could have resolved differently:

*Both girls are upset to discover that they are pregnant. Bill and Karen hope to go to college and do not feel ready for either marriage or parenthood. Jason and Felicia face demanding academic challenges that leave little room for marriage or parenthood. Karen is determined not to be trapped in low-wage jobs and a dead-end future like her mother. She fears that if she has the child she will not go to college. Her mother supports her ambition and agrees to hide the pregnancy from her grandmother, who would not understand.*

*Felicia believes that it is wrong to bring a child into the world when its parents are not ready to provide it with the time, attention, and material resources it would need to thrive. However, her family is Catholic and she is convinced that ending even an early pregnancy is taking a life. She takes a semester off from school, arranges for the baby's adoption, and vows to be more careful in the future.*

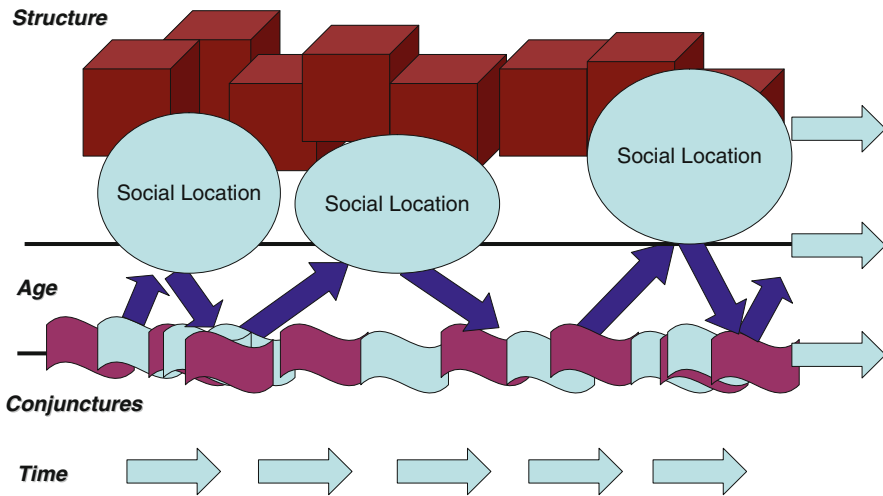
## Discussion

In this chapter we have examined, through the lens of the TCA, a class difference in family formation patterns well known to and extensively studied by demographers (e.g., Ellwood & Jencks, 2004; Rosenzweig, 1999; Upchurch, Lillard, & Panis, 2002). Using TCA, we have illustrated how differences in the structural ecologies experienced by LC and UMC women differ as they move through childhood and into adulthood. We have examined the consequences of these differences for the schemas women learn, the human capacities and material resources they can access, the identities they develop, the types of conjunctures they experience, and the ways in which they construe and resolve conjunctures. The TCA allows us to integrate these processes with research on fine-grained cognitive and behavioral mechanisms that are normally beyond the purview of demographic research, but are the means through which conjunctures are construed and resolved. Figure 4.3 summarizes this process as it plays out in a specific conjuncture, while Fig. 4.4 illustrates how the experience and resolution of conjunctures interacts with social locations and structures over time.

We have not stated or tested hypotheses. Rather, we have assembled and interpreted the findings of existing qualitative and quantitative research studies through

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<sup>12</sup>This may reflect social desirability bias, or the desire on the part of UMC women to portray themselves as tolerant of a behavior common in other groups. It may also reflect a different schema of nonmarital childbearing—i.e. one embodied in television character Murphy Brown's decision to have a child as a well-off career woman—from than held by LC women.



**Fig. 4.4** Linkages between conjunctures, social locations, and social structures over time

the lens of an integrative meta-theory. However, our narrative skims the surface of a set of implicit hypotheses that derive from TCA. These include:

- Regardless of age, women occupying LC and UMC positions experience different work and family structures. For example, LC women (or their parents, if a child) have a higher proportion of personal network contacts that are kin and a higher proportion of friends and relatives in hourly wage jobs.
- As they reach adulthood, women with LC and UMC backgrounds know common schemas related to motherhood and family formation, but schemas related to delaying motherhood are more accessible (more readily retrieved) among UMC women, whereas schemas viewing pregnancies as “gifts” and linking abortion to murder are more accessible, on average, to LC women.
- Throughout childhood, the material environments—including such things as housing, books and other forms of media, schools, and the behaviors of kin and friends—differ between women from LC and UMC families in ways that reinforce class-linked schemas about work and family formation.
- In adolescence and young adulthood, the characteristics of conjunctures experienced by women are related to their class status. For example, the likelihood of a 16-year old woman experiencing a premarital pregnancy is higher for LC than UMC women. Among women who experience such a pregnancy, UMC women are more likely to be in school, and LC women are more likely to have family members supportive of carrying the pregnancy to term.
- Differences in family formation behaviors (e.g., first sex, first birth, marriage) of UMC and LC women are mediated by the differences detailed above. For example, UMC women are more likely to choose abortion in response to a premarital pregnancy because they are likely to construe the pregnancy differently, because

they have more material resources to end the pregnancy and pursue alternative life goals, and because the people around them also share the same materials and schemas.

Some of these hypotheses are already well supported in studies conducted by demographers, economists, and sociologists, while others require new research. While existing quantitative tools can speak to many of these hypotheses, others require new kinds of data, concepts, and analytic approaches. In the conclusion to the volume, we discuss the potential for new methodological approaches for empirically testing the implications of TCA for family variation and change.

## Chapter 5

# A Conjunctural History of Assisted Reproduction and Adoption

Over the past 40 years, a new social field has emerged in the United States: the field of infertility. This social field has a unique set of institutions, social positions, and norms; a plethora of fora for public engagement; and a unique lexicon. Its institutions include clinics and laboratories, financial institutions, legal specialties, adoption agencies, patients' rights groups, and professional associations. The lexicon—and particularly the acronyms—also demarcates a domain of social space in which specialized modes of interaction apply. IVF, ICSI, hCG, tww, ttc, TESA<sup>1</sup>: use of these terms signals membership in a highly developed social field. And yet, it is a social field that did not exist in any form in 1960.

To say that the social field is new does not mean that infertility itself is new of course: many women and couples confronted infertility in the 1960s and before. However, they did so with little information, social support, or help. There were no infertility clinics, no national associations for people facing infertility, no magazines and nearly no books on the topic; adoption was almost exclusively agency-based and highly secretive; and reproductive health care consisted largely of hysterectomy. An infertile couple in the 1960s may have sought solace from close friends or a priest; today that couple could start their search for help with any one of the literally millions of websites on infertility.

How did this dramatic change occur? And why? This chapter argues that the contemporary field of infertility is best understood as the long-term consequence of a remarkable conjuncture. Conjunctures occur at multiple scales. Here, we consider a large, long, complex conjuncture, focusing on one of its watershed events: the birth of the first baby conceived through IVF, Louise Joy Brown, in Britain in 1978. Such a dramatic medical achievement would have been noteworthy under any circumstances, but its effects on the structures of family-making in the US were even more far-reaching than could be predicted from the technological advance alone. This

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Contributed by Jennifer A. Johnson-Hanks and Rosalind King.

<sup>1</sup>These refer to: in vitro fertilization, intracytoplasmic sperm injection, human chorionic gonadotropin, two-week wait (from an IVF procedure to a pregnancy test), trying to conceive (as self-description), and testicular sperm aspiration, respectively.

occurred, we argue, because the birth occurred at a critical historical conjuncture that brought together the aftermath of the civil rights and feminist movements of the 1960s and 1970s, dramatic legal and technological shifts in contraception and abortion, and growing affluence and inequality. It was historical accident that the technology of IVF succeeded when it did; but given that serendipity, the stage was set for a cultural shift.

Transformative events such as the birth of Louise Joy Brown mean—by definition—changes in structure. However important these changes are, they rarely constitute a complete replacement of one set of structures with another. Rather, many materials, schemas, and forms of interaction between them persist even in the face of a major transformative event. This is clearly the case in the emergence of the social field of infertility in the United States. Many of the schemas relevant to American childbearing and parenting have remained unchanged or only slightly changed, even as the structures in which they are embedded have undergone wholesale transformation. The persistence of these schemas over four decades of dramatic social, political, and economic change emphasizes their centrality to an understanding of fertility in America, and we treat them at some length in this chapter. In particular, we will focus on three schemas of unequal weight. The most important schema states that biological relatedness constitutes a key aspect of parenting. The second, closely related schema states that children's identity derives from their genetic heritage. The third schema valorizes hard work, including in the domain of reproduction.

The theory of conjunctural action aims to expand the domain of social demography, and to bring social demography more directly into dialogue with other branches of social science. This chapter seeks to illustrate one approach to this expansion and reorientation. Empirical patterns of reproduction, long the object of social demography, are both consequences and causes of the cultural and technological changes that animate contemporary sociology, social theory, social history, and anthropology. We want to show how an understanding of the empirical patterns of reproduction—whether related to the new reproductive technologies or not—will be enriched by a focus on structures, conjunctures, and transformative events.

Two important caveats regarding the scope of this chapter are in order, both necessary consequences of its brevity. First, the social history of infertility in the US is complex—far more complex than we can capture here. Although we stand by the claim that the birth of Louise Joy Brown was a transformative event that set in motion the processes which led to the current configuration of the social field of infertility, we have necessarily omitted many subsidiary—and sometimes partially countervailing—parts of the story. No social field is made in a day, and the subsequent decades have seen a number of conjunctures that could have led in another direction. But they did not, and so we focus on this formative moment.

The second important caveat is that this chapter ignores the significant variation in access to adoption and the new reproductive technologies by class, race, and geography. Assisted reproductive technologies (ARTs) are extremely expensive—in 2006, non-donor IVF cost on the order of \$12,000 per attempt and surrogacy with donor gametes cost upwards of \$50,000—and are rarely covered by insurance (see

Schmidt & Bitler, 2006 for a discussion). Adoption fees can easily exceed \$30,000. Therefore, finances constitute a major impediment to assisted reproduction and adoption for many people. Clinics that can perform IVF or the other related ARTs are not evenly distributed around the country: in 2003, California and New York each had more than 20 IVF clinics, whereas Alaska, Montana and Wyoming had none.<sup>2</sup> And with the expansion of open adoption, specific characteristics of the adopting couple that matter to birth mothers have become far more salient. All of these kinds of resources influence who can get babies—that is, they address the “stratification of the means of reproduction” in Colen’s (1995) memorable phrase. In this chapter, we focus on the shared social history that made IVF available at all, rather than attending to the extensive inequality in that access.

The chapter has five parts. This introduction is followed by a brief discussion of three schemas that have been central to American parenthood for at least a half century, even as their specific content and context have changed. Next, the chapter discusses the history of the birth of Louise Joy Brown and its transformative effects. Fourth, the chapter discusses how the three schemas appear today, after the birth of Louise Joy Brown. Finally, the conclusion of the chapter discusses some of the changes in the social field of infertility in the last decade, and looks forward to what may be yet to come.

## The Schematic Framework of Parenthood in America

Three schemas are of central importance for understanding the emergence of ARTs and the transformation of adoption practice in the US. The most important of these is the schema that equates parenting with biological relatedness, along with its related sub-schema, by which unassisted biological reproduction is not merely preferable, but socially superior, to assisted reproduction or adoption. The second schema is similar, but focused on the perspective of the child rather than the parents: this schema states that identity is biologically inherited, and that *who we are* as people is in large part a product of the genetic lineage from which we are descended. Third is a schema by which hard work is constructed as ethical, and by which people who work hard to have children deserve them in a special way.

The three schemas of parenthood are all highly general, pertaining as well to unassisted biological reproduction (UBR), and even to family and personhood more broadly. The virtue or purity of the natural; the respect accorded to hard work or self-sacrifice, especially on behalf of children; the importance of biological descent in defining relatedness and identity: all of these apply in a wide range of contexts in contemporary America. However, the ARTs and adoption provide a privileged vantage point from which to examine these schemas, because the schemas are necessarily threatened, stretched, or transformed by assisted or mediated family making. For example, as social actors seek to justify egg donation, surrogacy, or international

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<sup>2</sup><http://apps.nccd.cdc.gov/ART2003/clinics03.asp>, accessed May 7, 2007.

adoption as “natural,” they demonstrate the centrality of the category “natural” to their understanding of parenting and kinship. At the same time, however, their rationalizations serve—very slowly—to transform the category of “natural” reproduction itself, with broad consequences for families formed through all kinds of processes, including unassisted biological reproduction. When certain parents, the courts, and even the press debate the importance of a man’s genetic contribution in an IVF custody case, the social position of all fathers becomes subject to partial revision.

### ***The First Schema: Parenthood Rests on Biological Relatedness Through Descent***

The most important schema states that biological relatedness constitutes a key aspect of parenting. A biosocial schema of parenthood has been central to reproductive practices in Western societies for a very long time. In its general—and enduring—form, this biosocial schema states that biological descent is critical to the social performance of parenthood. That is, the social role of “parent” is based on a form of relatedness that comes only through conception, pregnancy, and birth. This stands in contrast, for example, to kinship systems in the eastern Mediterranean where biological relatedness can also be established by breastfeeding a baby (Delaney, 1991), or to some South Pacific systems where “relatedness” is not based on biological factors at all, but on the performance of a social role (Schneider, 1984). In our descent-based model of parenting, adoptive and stepparents are “parents by analogy,” whose legitimacy is always subject to question, and often even to formal audit, such as when health insurance companies require additional documentation for the coverage of adopted and stepchildren. The evil stepmothers who people Grimm’s fairy tales are only the most colorful example of this schema in reverse. Of course, the specific form that this schema takes has undergone significant change since the 1960s; however, even in modulated form, the schema remains.

Although this schema is not universal, it has deep roots in history and across a vast array of cultures. A relatively unique aspect of the schema in Western societies is that it applies equally to both the mother and father. In many non-Western cultures, descent is unilineal, that is, biological relatedness is considered to be carried either only through women or only through men, but not both. In most unilineal systems, cousins on one side are considered close kin, while those on the other are “inlaws.” In a global perspective, our bilateral kindred system is rare. However, it is also long-standing. While it is only recently that we understand the intricacies of gamete generation and recombination, western cultures have treated the biological act of sexual intercourse as a necessary precursor to conception and birth since Classical Antiquity, if not earlier.<sup>3</sup> The fact that our folk theory of reproduction conforms

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<sup>3</sup>Even among farming peoples, this cultural view of conception is not universal (see, e.g. Malinowski, 1987; Inhorn, 1994).



closely to genetics is partly coincidence, as its origin is far older and more broadly cultural than the scientific findings that conform to it.

In the European-descended world, the equation of parenthood with biological descent relates closely to inheritance, in the form of material possessions, knowledge, or social status. Indeed, we talk about genetic “inheritance.” Here, the fact that men and women play different roles in conception and birth matters. Women have always been certain that a child was “theirs” by virtue of having given birth. For the man, however, an element of uncertainty is always present, particularly before the availability of paternity testing. In most western societies, legal and social strictures on adultery and stark limits on the freedom of women addressed this uncertainty. Thus, the schema that equates legitimate parenting with biological descent relates to some of the most important principles of family structure in the west.

### ***The Second Schema: Children’s Identities Inhere in Their Genetic Heritage***

Whereas the first schema focuses on what constitutes legitimate parenthood, the second schemas focuses on the identity of the child. That said, they are closely related, as both are grounded in a vision of kinship and family that depends on shared biological links. Indeed, prior to the advent of ART, the distinction between them was hard to identify, as both led the same set of practices and institutions. For example, prior to the 1970s, nearly all adoption agencies made a considerable effort to place adoptive children with similar-looking parents, making families “as-if-genetic.” This similarity included not only race, but also hair and eye color, height, and so on. That is, when shared biological substance was completely impossible, both adoptive parents and the institutions that worked with them did everything possible to create a plausible copy, so that others outside the family—and sometimes even the children themselves—would not know. Court records were sealed, and in some cases children’s birth certificates were altered, erasing all record of the adoption. Families that did not conform to the schemas that equate parenting and personhood with biological heredity were socially refashioned to appear as if they did.

One site where the importance of the genetic heritage of children as partially distinct from the legitimacy of parents could be seen is in the awful history of eugenics in America. From the 1890s<sup>4</sup> through the middle of the twentieth century, many states had laws either prohibiting the marriage of “feeble-minded” persons or requiring that those convicted of certain crimes be sterilized. Even when the Supreme Court overturned one of these state laws in 1942, the majority ruling argued only that similar crimes must be treated similarly, not that sterilization itself was unacceptable or that eugenic principles were anything less than scientific fact. The case

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<sup>4</sup>Connecticut’s eugenic law was enacted in 1896 and prohibited anyone who was “epileptic, imbecile, or feeble-minded” from marrying.

was *Skinner v. State of Oklahoma*. Oklahoma had a “Habitual Criminal Sterilization Act,” under which people convicted “two or more times for crimes amounting to felonies involving moral turpitude” were to be surgically sterilized. However, it also specified that “offenses arising out of the violation of the prohibitory laws, revenue acts, embezzlement, or political offenses, shall not come or be considered within the terms of this Act.” Skinner was convicted of stealing chickens, and then twice of robbery with a firearm, and was to be sterilized. He appealed to the Supreme Court. The Supreme Court found the law unconstitutional, under the Equal Protection clause of the 14th amendment, because of the invidious distinction between robbery and embezzlement. The decision reads:

Sterilization of those who have thrice committed grand larceny with immunity for those who are embezzlers is a clear, pointed, unmistakable discrimination. Oklahoma makes no attempt to say that he who commits larceny by trespass or trick or fraud has biologically inheritable traits which he who commits embezzlement lacks. . . . We have not the slightest basis for inferring that that line has any significance in eugenics nor that the inheritability of criminal traits follows the neat legal distinctions which the law has marked between those two offenses.

Here, the Supreme Court codified in legal precedent the notion that criminal acts arose from heritable traits. It is hard to imagine a clearer case of the schema that who children are depends on their genetic heritage.

### ***The Third Schema: Hard Work is Honorable, Including in Relation to Reproduction***

The final schema we want to address has broad application in American society, far beyond reproduction: the idea that hard work is itself honorable, and that people who work hard deserve positive outcomes. A century of self-help books demonstrate its broad relevance to social action throughout American public culture (see [Hustad, 2008](#) for a delightful discussion); indeed, it is hard to think of a more widely-shared American value than “pulling yourself up by your bootstraps,” that is, making something of yourself by dint of individual hard work with the knowledge that “God helps those who help themselves.”

It seems perhaps counterintuitive that this schema should apply in an important way to family change and variation, given the long-standing cultural representation of the family as a domain set apart from, and in contrast to, the market and work. And yet, it is central to American conceptions of the family, and particularly of women’s roles in the family. Quinn (1996), for example, makes a compelling argument that Americans deploy the schema of hard work in thinking about marriage. Hays (1996) demonstrates that recent parenting books exhort women to be tireless in their role as mothers, urging them to see their children’s successes and failures as mirrors of the effort that they have put into caring for them. And at least since Hochschild’s *Second Shift* (1989), feminist scholars have written about how

women are judged—and judge themselves—in part based on the quality of effort they expend at home.

Prior to ARTs, women who could not conceive or carry a pregnancy to term were perhaps more pitied than judged for their infertility, although if they had married late, “fooled around,” or in other ways neglected their fecundability they were most certainly viewed with contempt. As we will see below, the advent and expansion of treatment options for infertility has meant that women and couples now have many more ways to “work” on their reproductive lives, and similarly many more ways to feel either entitled to bear children, or guilty for failing to work hard enough.

## The Birth of Louise Joy Brown: A Transformative Event

In the 1960s, infertility was endured almost entirely in private. There were no infertility clinics, no national associations for people facing infertility, no magazines and nearly no books on the topic. Adoption was almost exclusively agency-based and highly secretive: often seen as shameful both for the birth parents and for the adoptive ones. The three schemas described above were central to how most Americans thought about reproduction, but usually in a tacit way. Given that nearly all children were indeed the genetic and gestational offspring of their social parents, there was little need for most people to spend much time mulling over the centrality of biogenetic relatedness to their views of parenthood. Given that there was almost nothing that a woman or couple could do to overcome infertility, the importance of hard work in making action honorable applied almost entirely to raising—not bearing—a family.

In the 1970s, everything began to change. “Operation Babylift” brought two thousand South Vietnamese children to the United States in a highly publicized mass international adoption effort.<sup>5</sup> The Supreme Court legalized contraception, and then abortion, defining reproductive choice as a constitutionally protected right. RESOLVE, a national infertility patients’ organization, was founded in 1974; Concerned United Birthparents (CUB) came into being in 1976. And most centrally, the advent of in vitro fertilization (IVF) and the wealth of associated technologies, and later gamete donation and surrogacy, offered a real alternative to adoption for the first time. The fact that IVF was accepted by the public may now seem self-evident, but, as Henig (2004, p. 6) points out “IVF in 1973 was thought by some to threaten the very fabric of civilization. Marriage, fidelity, the essence of family; our sense of who we are and where we’re headed; what it means to be human, connected, normal, acceptable. . . If in vitro fertilization was allowed, some said, all the stabilizing threads would unravel.” Newspaper articles in the early 1970s regularly equated “test tube babies” to the birthing factories in Huxley’s *Brave New World*, or asked rhetorically what would have happened if Hitler would have had access to such a technology.

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<sup>5</sup>See <http://www.uoregon.edu/~adoption/topics/internationaladoption.htm>.

And yet, IVF *was* accepted, as were dramatic changes in the social status of the infertile, of adoptive children and parents, and of birth parents who give their children up for adoption. In 2004, there were 411 IVF clinics in the US registered with the Centers for Disease Control. They initiated 119,551 cycles, and produced 50,293 living babies.<sup>6</sup> Although still a small proportion of all births, IVF now accounts for a non-trivial proportion of births to older primiparous women. TESA and ICSI<sup>7</sup> have meant that couples with severe male factor infertility can also conceive biological children. “Open” adoption, in which birth and adoptive parents meet, and in which the birth parents may remain involved in the life of the child, have become commonplace. Agency adoption is only one alternative among many, both from the perspective of the birth parents, and from the perspective of would-be adoptive parents. And by 2001, over 15% of US adoptions were of children born abroad (U.S. Department of Health and Human Services, 2004, p. 14).

Not all of these changes can be directly traced to the birth of Louise Joy Brown, but her birth was a watershed moment—a transformative event—that recast many existing schemas and materials, reordered existing structures, and made possible a dramatic shift in the socially acceptable pathways to parenthood. That happened, we argue, because of the social context in which Brown’s birth occurred: at a critical historical conjuncture following on the civil rights and feminist movements and major legal and technological shifts in contraception and abortion. The stage was set for a cultural shift, and Louise Joy Brown served as the catalyst.

### *The 1960s and 1970s: The Broad Conjuncture*

Conjunctures are historical moments when the ordinary course of affairs comes into question, and alternative possible futures become thinkable. Multiple elements that might ordinarily be unrelated can be conjoined. Exactly this was happening in the domain of reproduction in the 1960s and 1970s: parenting schemas were recombined with new legal and medical materials in a context of dramatic social upheaval. The discourse of individual rights—both as private citizens and as public consumers—was becoming more salient. The introduction of the oral contraceptive pill provided a major technological advancement to the separation of reproduction and sex. Divorce and illegitimacy rates rose, forcing the increasing prevalence and acceptability of single motherhood and step-parenting. The feminist movement fought for legal protections for pregnant women and mothers to be able to remain in the workforce, transforming the lives of middle-class families. The Supreme Court

<sup>6</sup>The 2004 report is available at <http://www.cdc.gov/ART/ART2004/>, accessed May 7, 2007.

<sup>7</sup>Some of these acronyms are so common that they essentially serve as the names for the procedures. TESA is “testicular/epididymal sperm aspiration,” a process by which sperm can be taken directly from the testicle in the case of anatomical defect. ICSI is “intracytoplasmic sperm injection,” in which a single sperm is injected into the ovum; it is used when a man produces very few healthy sperm.

issued a series of dramatic rulings regarding contraception and abortion, establishing a right to privacy that applied specifically to reproduction. And technological innovations in medicine made it feasible for women and couples to control their reproductive lives to a far greater extent than ever before in history.

### **Technological Innovation**

The technological innovations in reproductive medicine between 1960 and 1980 were astonishing, and meant that couples could more easily achieve their reproductive intentions—either to conceive and carry a pregnancy to term, or to avoid pregnancy and childbearing. Birth control pills, first approved by the FDA for use as contraceptives in 1960,<sup>8</sup> were used by over 10 million American women by the early 1980s. The “mini-pill”, or progestin-only pill, was introduced in 1973 making it possible for women to use the birth control pill while breastfeeding. IUDs also became widely available in this period: the Lippes loop in 1964, the Saf-T coil in 1967, and the Dalkon shield in 1971. Clearly, these innovations were not without side effects—in the case of the Dalkon shield, significant and harmful ones—but they were innovations nonetheless.<sup>9</sup> Abortion methods also improved in this time; vacuum extraction became feasible on a large scale with the introduction of the Del-Em in 1971.

Before in vitro fertilization, or IVF, technologies to treat infertility included intrauterine insemination and donor insemination, both practiced for decades or even centuries, as well as surgery to unblock the fallopian tubes. But the real innovations of the 1960s through the 1980s were in the development of IVF. There are four major technical obstacles to IVF: retrieving mature ova, fertilizing them with sperm, maintaining the ova and subsequent conceptuses in culture, and transferring the conceptuses to the uterus to implant and grow. Given the sequential nature of the process, doctors and scientists had to master each step before they could make progress on the subsequent ones. In the 1960s and early 1970s, only very few people were working on making IVF a reality: the team of Patrick Steptoe and Robert Edwards in Britain, and Landrum Shettles in the US.

The key to retrieving mature ova was laparoscopy, a technique for viewing and manipulating internal organs without opening the abdominal cavity. Although developed conceptually as early as 1901 by George Kelling, laparoscopy was not developed for reproductive use before Steptoe began experimenting in the late 1960s. Achieving fertilization demanded both a suitable culture for the ova, and learning how to “capacitate” the sperm, that is, how to enable them to fertilize. The latter turned out to be simpler than expected, but the former constituted a major

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<sup>8</sup>The first pill, Searle’s Enovid, was first approved for treating severe menstrual disorders in 1957, at which time the FDA required the drug label to carry the warning that Enovid would prevent ovulation.

<sup>9</sup>Perhaps ironically, the Dalkon shield became so widely used in part because of concerns raised about the health consequences of the pill, manifested most clearly in congressional hearings on the topic in 1970.

obstacle, and took years of experimentation. The hardest challenge, however, was transferring the pre-embryos into the uterus and getting them to implant and grow. Steptoe and Edwards created some 200 conceptuses and transferred over 60 that led to miscarriage before they were successful.

### **The Civil Rights Movement**

The 1960s saw the emergence of a range of voluntary associations based on a shared identity, and often more specifically based on a shared experience of social exclusion. The Civil Rights movement, Feminism, Disability Rights and the Gay Liberation movement led to a rising importance and recognition of individual rights, along with the idea of publicly claiming an “identity” as an elemental part of self-hood. The Freedom Summer and the March on Washington forced white America to (at least start to) make good on the idea that all men are created equal. And from *The Feminine Mystique* (1963) to *Our Bodies, Ourselves* (1971) and beyond, second-wave feminism firmly established the idea that “the personal is political” in American public discourse.

The Civil Rights Movement, second-wave Feminism, and the related rights movements all mobilized a deep American schema of fundamental human equality. In mobilizing this schema, the movements also transformed it, so that the shared experience of disadvantage became legitimate grounds for making claims on the body politic. Groups of people who had suffered unfairly as a result of their identity could increasingly command public awareness, concern, and even recompense. In conjunction with the medical revolutions described above, this social background made it possible for infertile couples, birth mothers, and adoptive parents to “come out from the shadows,” form voluntary associations, and assert a new set of pro-creative rights. At the same time, and partly for the same reasons, new professional organizations coalesced to regulate and promote adoption and assisted reproductive technologies.

Parents and would-be parents created new organizations to provide information and support to members, as well as to advocate for their interests. RESOLVE was founded in 1974; Concerned United Birthparents (CUB) was founded 1976; and the Foster and Adoptive Parents Association (FAPA) was founded in 1970. In their founding statements, all of these organizations made reference to the march toward equality and the importance of community based on shared disadvantage. RESOLVE’s mission echoes that of NOW, founded in 1966. RESOLVE aims “to promote reproductive health and to ensure equal access to all family building options for men and women experiencing infertility or other reproductive disorders. . . [and to] provide timely, compassionate support and information to people who are experiencing infertility and to increase awareness of infertility issues through public education and advocacy.” The dual focus on equal access and advocacy for a disadvantaged group grew out of the rights movements of the 1960s.

All of these organizations also drew on the language and imagery of the new identity politics. Ellen Herman explicitly ties the origins of Concerned United

Birthparents to the feminist movement, explaining that its founders were inspired by the newly accessible schema that, “the personal is political.”

Although white feminists were more closely identified with the struggle for safe and legal abortion than with the protection of women’s childbearing rights, the logic and rhetoric of reproductive choice encompassed birth mothers, at least in theory. Why should women be pressured to give up their children forever simply because they were unmarried, or young, or poor, or without adequate support? Didn’t equality require the freedom to decide when to have children as well as when not to have them? . . . Gradually, their shared experience of surrendering children under extreme pressure evolved from a personal complaint into a subject of social analysis and a matter of social justice. (Herman, 2005)

At the same time as the voluntary associations for parents and would-be parents were coming into their own, professional organizations and associations reaffirmed States’ interests in “safeguarding health, in maintaining medical standards, and in protecting potential life.” Although founded in 1944, the Association for Reproductive Medicine (ASRM) expanded rapidly and dramatically in the 1970s, and—as we will see below—even more so in the 1980s, after the birth of Louise Joy Brown transformed structures of reproduction in America. At the time Louise’s parents were expecting, infertile couples were an increasingly vocal minority group, establishing their claims to public respect and public resources on the basis of their history of exclusion and disadvantage, invoking schemas developed by the Civil Rights and Feminist movements of the previous 20 years. Infertility had “come out of the closet” and people who suffered from it began to have a community.

### Legal Precedent

In conjunction with these social movements, a series of Supreme Court decisions carved out a domain of “privacy” around reproductive behavior, increasingly treating alternative paths toward—and away from—parenthood as personal choices. This made it possible to construe the new reproductive technologies that were simultaneously being developed as means of achieving individual choice, rather than only as scientific hubris. The high profile cases decided by the Supreme Court in the arena of reproductive rights, starting in the 1960s, centered around the prevention of unwanted pregnancies and births. In the 1965 case *Griswold v. Connecticut*, the Court located the right to the use of contraceptives as falling within a fundamental right to marital privacy. This decision has been enormously consequential: although the right to privacy has been further developed and extended, it continues to hold the most strength when related to family, marriage, motherhood, procreation, and child rearing.<sup>10</sup> Seven years later, in *Eisenstadt v. Baird*, the Court extended the right to reproductive privacy to (unmarried) individuals, on the grounds that providing differing treatment to married and unmarried persons violated the equal protection clause of the 14th amendment.

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<sup>10</sup>See [http://www.law.cornell.edu/wex/index.php/Personal\\_Autonomy](http://www.law.cornell.edu/wex/index.php/Personal_Autonomy).



Building on *Griswold* and *Eisenstadt*, *Roe v. Wade* (1973) stated that a woman's right to privacy included control over the continuation or discontinuation of her pregnancy. However, *Roe* also makes an important distinction between contraception and abortion on the grounds that another potential individual is involved. Thus, *Roe* recognizes the state as having a legitimate, and potentially even compelling, interest in the pregnancy. The majority decision reads:

State criminal abortion laws . . . that except from criminality only a life-saving procedure on the mother's behalf without regard to the stage of her pregnancy and other interests involved violate the Due Process Clause of the Fourteenth Amendment, which protects against state action the right to privacy, including a woman's qualified right to terminate her pregnancy. Though the State cannot override that right, it has legitimate interests in protecting both the pregnant woman's health and the potentiality of human life, each of which interests grows and reaches a "compelling" point at various stages of the woman's approach to term.

By arguing that state interest in "the potentiality of human life" grows over the course of pregnancy, *Roe* suggested that early interventions were unassailable: they inhered in a woman's right to privacy. While this reading was not novel,<sup>11</sup> *Roe* enshrined it in law, reinforcing the distinction between late pregnancy as a public concern and early pregnancy as a private one. For the subsequent development of in vitro fertilization, this distinction turns out to be critical: it is in part because any legal constraint on abortion could apply only to late pregnancy that research and development in IVF was possible.

*Roe* may have had a second consequence as well. Bitler and Zavodny (2002) demonstrate that the legalization of abortion prior to *Roe* significantly reduced adoptions of children born to white mothers, explaining most of the 40% decline in such adoptions over the 1970s. Although they do not find an effect of *Roe* itself, Bitler and Zavodny propose that this is the result of data problems, and argue that abortion legalization did in fact reduce the numbers of unwanted births. During the first conjuncture, the supply of adoptable, white, US-born children declined for a number of reasons, including increasing tolerance for unmarried mothers. If *Roe* in fact contributed to this decline, its consequences for the emergence of a social field of infertility are all the more dramatic.

Throughout the 1970s, Supreme Court decisions continued to emphasize that childbearing belonged to a private sphere, outside the reach of the state (e.g., *Doe v. Bolton* [1973], *Planned Parenthood of Missouri v. Danforth* [1975]). *Carey v. Population Services International* (1977) is typical. Here, in a case regarding limits on the sale of contraceptives to minors, the Court restated its guiding principle that: "Regulations imposing a burden on a decision as fundamental as whether to bear or beget a child may be justified only by compelling state interests, and must be narrowly drawn to express only those interests." Although none of these cases tested whether a woman or couple had a right to bear a child (rather than the right *not* to), the consistency with which they decided in favor of individual reproductive

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<sup>11</sup> It resonates, for example, with the medieval European notion that ensoulment occurs at quickening (around the middle of the 2nd trimester).

choice made room for the claim that infertile couples, too, have reproductive rights that should be protected.

Indeed, Americans can get ART because it fits within the right to privacy. No potential life is involved until an embryo is actually created. The protections on the right to an abortion keep the creation of that embryo and its early growth beneath the penumbra of privacy cast over the relationship between the individual and the medical practitioner. By the time the fetus is developed enough that the State's interest in health applies, the reproductive endocrinologist has long since been replaced by the obstetrician. Recently, the ASRM has issued position papers that it is ethical to provide ART to single persons and same-sex couples; this extension of ethical principles follows the legal extension of the right to privacy in the arenas of contraception, sexual relations, and UBR (unassisted biological reproduction).

### ***Leading Up to Louise Joy Brown: The Structure of the Specific Conjunctionure***

Conjunctionures exist simultaneously at multiple scales. Micro-conjunctionures are embedded in macro- ones, and transformative events in those micro-conjunctionures resonate beyond their own proximal context through that embedding (cf. Hanks, 2006). Thus, we can look not only at the large-scale conjunctionure of legal and social change in the 1960s and 1970s, but also at the specific conjunctionure of the pregnancy that led to Louise Brown's birth.

Lesley and John Brown, a working-class couple from Bristol, England, had been trying to conceive for 9 years without success. In the fall of 1976, they sought the help of Robert Edwards and Patrick Steptoe, obstetricians who had been working together for more than a decade to develop a method of overcoming infertility due to blocked fallopian tubes, the problem that the Browns faced. This research was almost entirely self-funded, since the Medical Research Council and other official sources were hesitant to fund research that was so ethically controversial. Prior to the Browns, Edwards and Steptoe had conducted some 60 attempts at IVF, but few had resulted in pregnancy at all, and those that had all had miscarried in the first trimester. They hoped that altering their protocol to transfer the conceptus at 2 ½, rather than 4 days after fertilization would yield positive results. In November 1977, Edwards and Steptoe performed the revised protocol on the Browns, and the pregnancy took. Although the Browns knew the procedure was experimental, the doctors did not tell them that no case had yet resulted in a baby. Thus, they were very surprised to find themselves in the middle of a media maelstrom. In a memoir published 7 years later, Lesley Brown (Brown & Brown, 1984) wrote that she thought that "perhaps there wasn't hundreds of babies like mine. There must be just a few, I told myself. I still couldn't believe that mine was really the first."

But it was the first, and the media insistently wanted to know everything about the pregnancy and the baby. "Test tube babies" had been a topic of grim fascination for more than a decade, and despite some minor differences, the general tone of the

public discussion was intensely negative. “Test tube babies” (and this was always the term that was used, never “babies conceived with IVF,” as has now become standard) were treated as monstrous possibilities, evidence that science had moved too far beyond ethics. Two comparisons appear regularly throughout the press coverage of new reproductive technologies from the late 1960s and through the 1970s until the birth of Louise: Huxley’s *Brave New World* and Shelley’s *Frankenstein*.

Concerns about the morality of IVF were profound, often grounded in the apprehension that research like that conducted by Steptoe and Edwards came too close to tinkering with the sacred. In a typical statement of the day, editorials in the *Journal of the American Medical Association* warned against hubris. As discussed in the *Chicago Tribune*:

Experiments to create test tube babies are immoral and should be stopped, a leader in the field of ethics said yesterday. . . . An editorial appearing in the same issue of the AMA journal supported Dr. Ramsey’s injunction against these experiments “lest we forget what is human.” The editorial suggested that human procreation should remain a mystery to be contemplated rather than a problem to be solved, and it cited the danger that scientists someday may learn how to produce human beings to exact specifications. (*Chicago Tribune* 6/6/72)

In addition to the monstrous vision of special-order children, editorialists and opinion writers in the leading newspapers expressed concern that IVF would lead women to turn away from their moral obligations as mothers, leading to children being born who had not been gestated by their own “figure-proud” mothers, or—more radically—by any woman at all.

Test-Tube Fertilization of Ovum Raises Possibility of Rented Wombs: . . . The day might come, for instance, when a figure-proud film star could assign the seed of her own flesh to another woman for the tedious process of pregnancy and childbirth. (*Washington Post* 3/3/70)

Clearly the experiments of Drs. Robert G. Edwards, B.D. Bavister and P.C. Steptoe have brought significantly nearer that day when a baby could be “born” without ever having been in a womb of its “mother.” (*LA Times* 2/15/69)

In both of these examples, we see the concern that IVF would lead to “unnatural” family relationships: monstrous children and selfish, lazy mothers. IVF is treated as allowing, or even encouraging the antithesis of healthy family relationships and normal family forms.

Even during Lesley Brown’s pregnancy itself, the media coverage focused on the monstrousness and alienation of the procedure. *Time Magazine* began its article about the pregnancy with an extensive quotation from Huxley’s *Brave New World*, using ellipses to emphasize the similarities between the procedure that Huxley imagined and that one that Steptoe and Edwards had used.<sup>12</sup> The *Times* article goes on to cite *London Daily Express* Editor Derek Jameson as saying with excitement: “We

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<sup>12</sup>“The First Test Tube Baby,” June 31, 1978. Although Louise Joy had already been born by the time the article hit the newsstands, it was written and sent to the printer before the birth, and the article ends with a somewhat ominous question about whether this pregnancy will yield a breakthrough or a monstrosity.

could get baby farms, mass-produced kids, 1984 six years early!” Even as the birth of an actual child conceived through IVF became a realistic possibility, the public discourse about the emerging reproductive technologies was one of moral panic. Remarkably, however, the tone changed almost instantly with Louise’s birth.

### *The Event and Its Short-Term Consequences*

Louise Joy Brown was born by scheduled cesarean section at 39 weeks gestation on July 25, 1978, in Oldham, Greater Manchester, England. For weeks, her parents had been hounded by the press, and to somewhat reduce the media glare, the delivery was conducted in the middle of the night. The next day, and indeed for a week thereafter, her birth dominated the headlines on both sides of the Atlantic. Instantly, the tone of the media coverage changed. Rather than an impersonal, monstrous test-tube baby, journalists now saw a healthy, charming baby girl with normal and genuine parents. Rather than a mechanism to subvert the family, IVF was almost immediately recast as a mechanism to cure a medical problem.

Transformative events occur when the resolution of a conjuncture brings about a discernible shift in the schema and resources salient to some domain. They are often unpredictable in advance, and even indiscernible as they occur, but they can be clearly seen in retrospect by comparing structures before and after an event. Louise Joy Brown’s birth was decisively a transformative event. With it, IVF changed from being construed through schemas of family decline and decay to being construed through schemas of medical advancement and parental devotion.

### **Brown’s Birth Normalized “Non-normative” Reproduction**

In contrast to the tone of the press coverage throughout the 1970s and including during Lesley Brown’s pregnancy, articles announcing and discussing Louise’s birth were massively individuating and personal, focusing on the charm and normality of the baby and her parents, and even starting to put the phrase “test-tube” in scare quotes for the first time, as though the term that had been standard only a few days before did not fully apply to this actual child.

The world’s first “test tube” baby, a girl, was born Tuesday, Oldham General Hospital announced. . . . Her husband spent much of his time in her 4th floor private room. Between visits, he applied last-minute touches to the freshly decorated nursery in their rented house in Bristol, 173 miles away. . . . Mrs. Brown is described as a quiet, retiring homebody who came to public notice only because of her unflagging determination to have a baby. (*LA Times*, 7/26/78)

The two doctors who delivered the world’s first “test tube” baby, “a beautiful, normal” girl, said Wednesday the successful birth was a scientific breakthrough promising hope for many the world’s childless couples. . . . [Said Steptoe:] “The baby came out crying its head off. She is a normal, beautiful baby in a very good state, breathing normally. She is in a perfectly healthy state.” (*LA Times*, 7/27/78)

[Mr. Brown said] “Its incredible, incredible. I’m not a religious man, but I thank God that I heard our little girl cry for the first time. No one can realize what this means to Lesley and myself.” (*Chicago Tribune* 7/27/78)

In these quotes, and indeed throughout the press coverage in the weeks after Louise was born, we see again and again the words “normal,” “beautiful,” “healthy,” and descriptions of her parents as well-adjusted, gender-appropriate, and healthily sentimental about their child. In contrast to the vision of IVF as leading women to reject motherhood, the LA Times article from July 26 stresses that it was Lesley Brown’s (appropriately maternal) determination to have a child that led her to use this new technology. Had Louise not been healthy, whether related to the circumstances of her conception or not, or indeed had the Browns not been so normal and such sympathetic characters in the media, the radical change in the tone of the coverage would almost certainly not have occurred. Both the speed of the change and its contingency on the unique, fortunate details of the event are impressive.

### **Brown’s Birth Made Infertility Both Socially Visible and a *Medical Problem***

At the same time as it normalized non-UBR reproduction, Louise Brown’s birth made infertility highly visible. Literally hundreds of articles were written about her in the press; it was discussed on the radio; clergy members spoke about it from the pulpit. And more specifically, her birth brought visibility to infertility as a medical problem, rather than a moral or personal one. By demonstrating that infertility could be treated medically, Steptoe, Edwards and others did much to discredit the (then common) idea that it was a form of hysteria. Second, and more practically, IVF made many forms of infertility treatable for the first time. Suddenly, most infertile couples had a hope of conceiving a child, making public advocacy and the application of individual effort potentially productive. For the first time, something could realistically be done.

Steptoe himself actively encouraged the construal of his method as a standard medical procedure to overcome an ailment, rather than a radical change in reproductive practice. For example: an article in the London Daily Express explained that Steptoe and “his 12-member team believed that they were just by-passing one of nature’s faults. It quoted him as saying, ‘What I want to do is to help mothers whose child-producing mechanism is slightly faulty.’” (Cited in the Chicago Tribune 7/11/78). If infertility was an ordinary medical problem, then those who suffer it were just as worthy of treatment as those suffering other medical conditions. Instead of a means of undermining the family, IVF became a pathway to restoring normal family relationships and roles.

### **The Effects of the Louise Joy Brown Case on the Schemas of Parenthood**

In the 30 years since Brown’s birth, the three schemas that we discussed in the first section—the importance of biological relatedness for legitimate parenting, the importance of genetic heritage for children’s identities, and the value of hard work—have been altered in the aftermath of that transformative event. While biological

relatedness through descent remains important, what it means, and how it is traced, has been changed. While the notion that a child's identity lies in his or her genetic heritage remains—and indeed, is arguably stronger than ever—ideas about genetic heritage and its implications have changed. And even ideas about conceiving and bearing a child as hard work, and therefore honorable and legitimate work, have changed. All of these changes are wrapped up with the emergence of new materials, in the form of clinics, online discussion boards, public advocacy groups, and so on. As is always the case, materials and schemas have developed and changed in tandem. In this case, creating a new structure: a social field of infertility.

To be clear: we are not arguing that every aspect of the field of infertility is a consequence of, or could be predicted out of, the transformative conjuncture of Louise Brown's birth. Rather, we are arguing only that this event is the origin of the social field itself, along with associated, specific changes in the three schemas of parenthood that we discuss above. Indeed, many of the innovations in structure which shape the contemporary field of infertility did not arise as a result of Brown. An important example is the expansion of the Internet, in terms of information, opportunities, and social networking potential. Infertility remains rare, but the expansion of the Internet has made possible an experientially dense network of infertile women and couples, who would otherwise be isolated from each other. Websites offering information, support, and opportunities for political or social advocacy have dramatically altered the experience of infertility, as couples can communicate with others in situations very similar to their own. And the Internet offers more than support and solace: for open adoption, surrogacy, and egg donation, the Internet has created a vastly larger and more integrated "market." Websites presenting potential egg donors, surrogates, and adoptive parents have become increasingly sophisticated—and lucrative for the companies behind them. This marketization both raises prices and makes available new opportunities, raising a host of ethical questions about boundaries between commodities and persons (see Hochschild, 2003).

### ***The First Schema: Parenthood Rests on Biological Relatedness Through Descent***

As is often the case with deep schemas, the equation of legitimate parenthood with biological descent becomes clearest when, for whatever reason, it is overturned. The meanings and relative weightings of elements of the biosocial schema of parenthood were partially transformed by scientific and legal developments in the late 1980s. Many Americans who become parents through UBR may never think about the importance of their biological relation to their child. It is so profoundly taken for granted that its status as an orienting schema never comes up. However, when unassisted biological reproduction fails, as it does for some 10–15% of Americans, the schema suddenly comes into clear relief. Indeed, some people who want children decide to live without them, rather than to accept third-party reproduction or adoption. For them, the schema binding parenthood to biological descent is so strong that

no alternative view of parenting is possible. One of the plethora of self-help books for the infertile explains, “The most common reason [for rejecting donor gametes] is that they’re afraid of living with a stranger—they fear that when the biological glue that binds family members together is missing, the relationship will be weak” (Domar & Kelley, 2002, p. 257).

However, not everyone reacts this way. Some infertile people reach the point where they can parent only through adoption, donor gametes, or donor zygotes, and go ahead. Approximately 10% of IVF cycles are now conducted using donor eggs; a far larger, but unknown, number of conceptions are thanks to donor sperm. Many of these parents recalibrate what biological relatedness and descent really mean to them, managing the interpretation of biology as necessitated by their circumstances. Self-help books and websites oriented to helping infertile people tend to recommend that people “grieve” the loss of a potential biological link to their children. For example, noting “The array of adoption and third party parenting options available challenges couples to examine the relative importance to them of gestational vs. genetic connections. Prospective parents must think carefully about what it would mean to them to be a parent without experiencing pregnancy, or a parent with no genetic connection to their child.”<sup>13</sup> By stressing “gestational vs. genetic connections,” this quote ties “proper” parenting to different forms of biological connectedness, rather than the intention to parent or the act of parenting.

As gamete donation and surrogacy have made it possible for a mother to share either a gestational or a genetic link to her child without sharing the other, the content of the schema emphasizing the importance of biological relatedness has shifted somewhat. It is now possible for women to be physically related to their children in several different ways—parenthood has become “partible” (Thompson, 2001). Recipients of egg or embryo donation may focus on the shared biological experience of pregnancy as the maker of biological relatedness, whereas women who rely on IVF-by-surrogacy are more likely to focus on DNA as the key biological element (Becker, 2000). One popular book describes a woman who was happy with her decision to use donor egg: “Although the newborn wasn’t formed from that woman’s DNA, she carried the baby, she nurtured the baby, and the baby was hers in every sense of the word” (Charlesworth, 2004, p. 142). Biology remains a central idiom through which mothers justify their maternity, even when that biological tie is achieved through donor egg or surrogacy.

Genetics and gestation provide alternative means for women to share a biological relationship with her child; would-be fathers, however, have only genetics as a means to fulfill the social expectation for parenthood. To some, sperm donation is therefore considered more threatening to the couple than egg donation, justifying the use of TESE, IVF and ICSI—rather than simple sperm donation—in the case of even quite severe male factor infertility. Still, donor sperm remains a very common form of fertility treatment: it is cheap (a few hundred dollars rather than

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<sup>13</sup><http://www.infertilitycentral.com/fertility/medical-ethics-and-the-new-reproductive-technologies.html>, accessed 6/23/06.



\$30,000 or more for one cycle of donor-egg IVF), technologically very simple, and has been practiced in some form for centuries. What has changed since the 1970s is that children conceived by donor insemination (DI) are now more often told about the conditions of their conception. This is simply a new interpretation of an old schema: whereas in the past, the importance of genetic links between father and child led to secrecy when the social father was not the genetic one, today parents are more likely to consider the child's genetic makeup a matter of her heritage, and therefore something to be known, studied, and celebrated.

The centrality of biology in constituting legitimate parenthood continues to create particular difficulties for adoptive mothers, who share neither gestational nor genetic links with their children. Yet, even in this case, a number of contemporary books and articles encourages adoptive mothers to create a biological tie with the infant through the shared substance of breast milk, by inducing lactation in order to breast-feed the baby. For example, one such article argues, "Human milk is the standard food for babies and breast-feeding is part of normal mothering, promoting child-mother attachment, and providing pleasure and comfort to the baby. . . . The promotion of close physical contact between mother and child will . . . assist development of a positive attachment relationship which will have long-term benefits for the child" (Gribble, 2004, pp. 103–104). Here, adoptive mothers are reminded that the shared biological substance of breast milk is part of "normal mothering" and that, without it, their children are at risk of failing to develop a "positive attachment relationship." Thus, a biological linkage through milk is cast here as critical for mothers who lack genetic and gestational ties to their children.

### **A Corollary: UBR is More Respectable Than Other Forms of Family-Making**

Following closely on the schema classifying biological relatedness as central to parenthood is a subschema that treats UBR, or "natural" reproduction, as more honorable, respectable, or complete than methods relying on technological or social assistance. The word "natural" when applied to parenthood inevitably brings to mind the term "unnatural" to describe alternatives. As with the primary schema on which it depends, this subschema is rooted in longstanding historical philosophies of what it means to be human, although its specific form is of recent vintage. Traditionally, proponents of the natural have focused on distinguishing humanity from the imagined supernatural, or the natural but non-human. With the extensive recent developments in technology—particularly artificial intelligence and robotics—these ideas are used to draw a clear line between humanity and machine.

At issue here are the ways in which adoption and ART are treated not only as expensive, painful, and inconvenient, but also as somehow shameful or inadequate. Infertility remains stigmatized, and infertility treatment therefore secret. One of the authors once overheard a man sitting in the waiting room of a large IVF clinic exclaiming loudly into his cell phone, "Yeah, I'm at the dentist again. Yeah, yeah, third time this month!" The most important evidence and consequence of this schema is the effort that adoptive parents and parents undergoing ARTs put

into “naturalizing” their paths to parenthood, that is, recasting high-tech or innovative technologies as extensions of their bodies’ normal functioning. For example, in some IVF procedures, the embryologist uses laser or chemical technologies to pierce the zona pellucida, making it easier for the zygote to implant in the uterine wall. This process is called “assisted hatching,” a name that already stresses that the technology “helps” nature, rather than contravening it. Some parents who use assisted hatching further naturalize the process, describing it as “like using forceps,” or simply “helping the embryo come out.”<sup>14</sup> The numerous books about IVF similarly stress that, despite its significant technological sophistication, IVF is a normal extension of reproductive health care, “naturally” assisting couples to become parents. Thus, the *Couple’s Guide to IVF* encourages readers to “think of [superovulatory drugs] as fertilizer,” and describes that between the egg retrieval and insemination “the eggs rest comfortably” in the lab dish (Charlesworth, 2004, pp. 8, 10).

A related example of the moral—and not merely convenience—value accorded to UBR is the plethora of stories that circulate on the Internet, in RESOLVE support-groups, and elsewhere, about the woman who did three cycles of IVF and then got pregnant “naturally” after changing her diet or quitting her job or adopting twins. The emphasis in these tales is not on the fact that the couple ended up with a baby, but that they did so *without intervention*. Unassisted biological reproduction (UBR) is thereby celebrated as an ideal. As one parent explained, “I wanted to be ‘normal.’ I wanted to have a baby the good old-fashioned way, without intervention” (Charlesworth, 2004, p. 217).

It is not only—or perhaps even most dramatically—in relation to conception that the “naturalness” of reproduction is accorded high social value in contemporary America. Another site where this subschema has important social currency is the social movement advocating “natural” childbirth—that is, childbirth with minimal medical intervention or monitoring. Although initiated with the 1933 publication of *Childbirth without Fear*, the “natural childbirth” movement has only gained widespread success in the past 20 years. This movement encourages women to engage in maximally conscious decision-making to manage and maintain the “naturalness” of reproduction, struggle with doctors to regain control of their own bodies and return to “traditional” methods of birthing. For example, one website advocating this kind of birth asserts:

A natural birth . . . is just that—it is the delivery of a baby without using drugs or surgery during birth. . . You really can have a beautiful, drug-free experience in childbirth even if you have your baby in a hospital [but] . . . you cannot have a natural childbirth in today’s society unless you take active steps to make it happen. You and your spouse must decide in your own minds that you want a natural birth. You must find a doctor or midwife who supports that decision. You and your spouse must train for the birth so you know what to expect, how to manage pain and what to do at different stages of the birth. You also need to prepare a birth plan so that you can state your desires about a host of variables. (<http://www.bygbpub.com/natural/natural-childbirth.htm>, accessed 3/12/06)

<sup>14</sup>Both of these descriptions were used by prospective mothers in a weekend workshop on IVF attended by one of the authors in July 2006.

As in relation to assisted conception, here medical interventions in birth are seen as “unnatural” and as directly detracting from the “beautiful experience” that birthing women should have. In order to achieving a “natural” birth, the laboring woman must bend the medical establishment to her will, and this requires an explicit, well-formulated plan, preferably in the form of a written birth plan. More specifically, in order to have a natural birth, the woman and her partner need to acquire knowledge, training, and a support staff. Bledsoe and Scherrer describe the ideal natural childbirther as a “professionalized patient,” who embeds her “assertions about desires for natural birth and the importance of control over birth in a wide body of technical practices and concepts” (2007, p. 63). As least as much as the middle-class pregnant women described by Bledsoe and Sherrer, women undergoing infertility treatments become paraprofessionals, mastering a large corpus of esoteric knowledge and insisting on particular kinds of treatment from their nurses, doctors, sonographers, and so on. Having a “natural” reproductive experience is a key element sought by both groups of women.

### ***The Second Schema: Children’s Identities Inhere in Their Genetic Heritage***

Whereas the first schema focuses on what constitutes legitimate parenthood, the second schema focuses on the identity of the child. That said, they are closely related, as both are grounded in a vision of kinship and family that depends on shared biological links. However, contemporary folk theories of personhood and identity stress genetic links above all others, treating genetic heritage as a pivotal part of individual identity. Thus, whether you are Swedish or gay or fun-loving or cynical, according to this schema, it is most likely in your genes.

Although this schema is clearly linked to the vast explosion of genetic research of the past two decades—the human genome project, the increasing number of traits for which genetic correlates have been identified, etc.—it also has a long history. We are inclined to think of the schema tracing identity to biological heritage as another iteration of a basic schema that in the past was expressed through anti-miscegenation laws: throughout both iterations, people are treated as belonging to fixed, known, biological categories with clearly defined characteristics. Two things have changed. First, in the 1970s a diversity of genetic identities came to be seen as valuable and celebrated. People might still have been thought to have inherent, inalienable identities as a result of their heritage, but the ranking of different heritages came into question. Second, scientific advances brought ever larger domains of individuality into the sphere of genetics. When, in 2005, scientists announced that a single gene determined monogamy in voles, pundits asked if even the moral sphere was not reducible to our chromosomal constitutions. Thus, the importance of heritage as a determinant of identity has been both weakened (with ethnic assimilation and the civil rights movement) and strengthened (with new identity-politics movements and the expansion of genetic research) in recent decades.

One of the most important consequences of the schema by which genetic heritage constitutes a critical part of individual identity is the notion that children have a right both to know this heritage and to develop some relationship to it. As we discussed above, prior to the 1970s, adoptions were closed and shrouded in secrecy. Under closed adoption, the emphasis was on creating families as if they were genetic—that is, making the lack of genetic link deniable, seeking to replace the child’s genetic heritage with a new one. Today, by contrast, the focus is often on providing the adopted child with as much information about his or her unique genetic heritage as possible. Adoption agencies and adoptive families focus on providing information to the child about the history of the birth family in the case of open- and semi-open adoption. The very practice of open adoption, in which the adoptive and birth parents meet and in some cases maintain an on-going relationship, is partially related to the notion that it is important for children to have knowledge of, and access to, their birth parents, regardless of who raises them.

Examples of the reinvigorated importance of genetic heritage in constructing children’s identity are legion. In 2005, the *New York Times* reported that a small but growing number of white parents who adopted children from China are sending them to Saturday schools in which they learn to speak Mandarin and use chopsticks. These parents are committed to providing the best opportunities for their children, and believe that the children’s genetic Chinese heritage should be translated into everyday practices of speaking and eating, regardless of who rears them (Hershenson, 2005). Similarly, based on field research, Scherz (pers.com., for a related discussion see Scherz, 2011) explains how some social workers in the Child Protective Services office of one Californian county avoid placing African American children with white potential adoptive parents, arguing that white parents will not know what the children like to eat. While there may be many compelling reasons to advocate same-race placement, the notion that children’s food preferences are innate, unchanging and biological makes sense only in a schema under which important aspects of identity are the product of genetic heritage.

The genetic theory of identity matters not only in relation to adoption, but also in the context of donor gametes. One form that this schema takes here is an emphasis—consistent with practices of the American Society of Reproductive Medicine, donor agencies, and most psychologists and social workers in the area—that children must be told of their genetic origins. In the book *Conquering Infertility*, the authors state the orthodox position: “I feel very strongly that children are entitled to know where they come from” (Domar & Kelly, 2002, p. 265). The notion that where children “come from” is donor sperm or donor egg, again, emerges out of the schema under which what matters about us is our genes. A second form that the genetic identity schema takes in reference to donor gametes is the emphasis that many couples put on finding a donor who resembles the intended parent, sometimes in idiosyncratic or unusual ways. This makes sense under a schema in which the child’s inclinations, passions, and indeed personal history are carried in her genes; insofar as that is true, then finding a donor with inclinations, passions, and a history that match those of the intended parent creates a similarity between parent and child. It is not the same

as a literal biological tie, as discussed under the first schema, but rather a kind of sympathy born of similarity. Two examples:

Finding a sperm donor was quite a process. My husband and I spent many a night hunched over the computer checking out profiles. . . . Finally, we narrowed it down to two guys with advanced degrees, green eyes, and Scottish ancestry (my husband's Scottish). . . . My husband is oddly passionate about blue cheese so when one of them mentioned that he loved Stilton, we knew we'd found our man! (Charlesworth, 2004, p. 161)

I'm Greek and I really wanted someone who looked like me and shared my heritage. . . . Finally, my doctor suggested I place an ad in a local Greek newsletter to try to recruit someone [to be an egg donor]. It felt a little extreme, but made total sense. (Charlesworth, 2004, p. 147)

In the first schema, we saw that legitimate parenting is cast as dependent on biological ties—genetic, gestational, or even, if necessary, lactational. Here, we have seen a closely related schema, by which children's identities are seen as deriving first and foremost from their genetic heritages. Although these schemas are closely related—indeed, before the emergence of open adoption and the new reproductive technologies, it would have been impossible to see their separate effects—they work in slightly different ways. What matters about the first schema is the standing of the parent—his or her right to parent, his or her legitimacy as a parent, his or her position vis-à-vis other parents. What matters about the second schema is the identity of the child—not only “whose child is this?” but also “what kind of a person is this?” In the age of the gene, what kinds of people we are depends in large part on our (perception of our) DNA (see also Rabinow, 1992).

### ***The Third Schema: Hard Work Is Honorable, Including in Relation to Reproduction***

Finally, we return to the idea that hard work is honorable and meritorious, whether in relation to employment, self-help, marriage, or reproduction. Quinn (1996) has explicitly argued that Americans deploy this schema in thinking about marriage. It is also deployed in thinking about alternative pathways to parenthood. That is, people who undergo infertility treatments, IVF, find gamete donors or surrogates, or adopt really *deserve* those children because they worked so hard to get them. They, more than most people, know how precious children are, and they make exceptionally good parents. One author sympathizes with her readers' distress: “‘undeserved’ pregnancies are unbearable. You get especially crazy when you hear that someone has gotten pregnant easily or accidentally. You feel that she doesn't deserve a baby, because she hasn't had to suffer” (Charlesworth, 2004, p. 80).

This third schema stands in direct opposition to the corollary of the first schema, namely that conceiving “naturally” is not only easier and cheaper, but somehow also more respectable than having to resort to ART. However, as Quinn argues in regards to marriage, cultural reasoning regularly includes these kinds of oppositions.

People shift between one logic and the other, sometimes integrating them, other times ignoring the contradiction or living with it, however uneasily.

Internet chatrooms are rife with the sentiment that by working hard—and spending exorbitant sums of money—couples who adopt or conceive through ART become special kinds of parents. One woman expressed this sentiment clearly: “I pray for success for every one of you dreaming of becoming a parent. My other emerging belief, after severe crises of faith through the years of IVF, is that some of us get randomly ‘chosen’ to have a really, really hard path to parenthood because all children so desperately need to be cherished, and all of us, and all people dear to us who have known our struggles, are, or become, very, very clear about that.”<sup>15</sup>

Under the schema that honors hard workers as particularly worthy of good outcomes, infertility seems profoundly unjust. For couples facing infertility, working hard does not necessarily bring results. Again and again, in books and online chats, this sense of injustice emerges.

Most of us tend to expect success, particularly when we work hard—it’s the American way. Not only that, most women grow up thinking that when we want to have a baby, we will. . . . You want something more than everyone you know, you’re doing everything within your power to get it, you’re sacrificing everything you have—time, money, energy, your body, your career—and you still aren’t getting what everyone else is handed. It feels really unfair. (Domar & Kelley, 2002, pp. 218, 81)

Or similarly:

Most of us are brought up to believe that life is fair. After all, America is a democracy. Therefore, it’s very hard to come to terms with the injustice of being denied what feels like a fundamental human right—having a child. (Charlesworth, 2004, p. 63)

The idea that couples, or most specifically women, who sacrifice time, money, energy, body and career *deserve* a baby more than do couples or women who conceive without effort recasts potentially stigma-inflicting infertility as honorable suffering. This third schema therefore offers an alternative way for people to derive a certain self-identity or dignity from their hardship, recasting themselves as honorable persons specifically *because* of the suffering that they have endured. This derives in part from the broad American schema that values work and suffering across domains, and in part from the specific historical conjunctures in which the contemporary field of infertility emerged.

Coming in part out of the Civil Rights movement, second-wave feminism, gay rights movement, and disability rights movement, the social movement that has crystallized around the rights of the infertile makes claims to public awareness and legal redress specifically on the grounds of past suffering. But these claims remain tentative. To successfully claim the social status of victims deserving recompense, infertile couples must enact their innocence and commitment to making treatment work. That is, women must be of “healthy” weight, not smoke, drink, or

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<sup>15</sup><http://www3.fertilethoughts.com/forums/showthread.php?t=83029>, accessed Oct 20, 2006.

eat unhealthy foods. They must be in normative, heterosexual relationships, sacrifice career goals if necessary for treatment, and comply with the protocol.<sup>16</sup>

## Conclusion

This chapter has argued that the birth of Louise Joy Brown in 1978 was a transformative event that made possible the emergence of a new, complex structure: the contemporary social field of infertility. This structure incorporates a wide range of schemas and materials, some old, some new, and some transformed. To say that Brown's birth was a transformative event is not to say that it made all of the subsequent changes inevitable, or even necessarily predictable. But it does mean that the specific details of her birth resulted in significant changes in schemas and materials that made those changes possible. Our claim is that had she been still-born, suffered from a birth defect, or been born to callous, unappealing parents, the structural changes that were in fact effected would not have occurred.

Today, the social field of infertility in the US is well-developed. IVF is widely—although not universally—regarded as an acceptable path to parenthood. Open adoption is becoming the norm, or one norm alongside others, and birth mothers who want to give up their children have a great deal of say as to what kinds of social parent they want them to have. And yet, more changes are coming. Like the changes of the past 30 years, these will occur both in the schemas and the materials relevant to infertility. In this regard, it becomes important to distinguish between adoption and the ART, which we have so far treated as two segments of a single field of infertility. In reality, this field is not so unified. Adoption and ART they share a great many schemas, but far fewer materials. The social welfare system is a critical social institution for adoption; yet, the same agencies certify potential parents as legitimate adopters oversee child endangerment and abandonment cases, foster care, and family reunification. By contrast, the social welfare system has almost nothing to do with ART. IVF and the other ARTs, on the other hand, are embedded in the institutions of medical care, health insurance,<sup>17</sup> and the pharmaceutical industry, material structures that are nearly irrelevant to adoption. The social histories embedded in these materials have consequences for how IVF is practiced and perceived. Because of their interpolation in these different material structures, IVF and adoption pose distinct problems for the social actors engaged in them, although they share many of their core schematic representations about parenting, family, and personhood.

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<sup>16</sup>Some ART doctors have refused to help certain couples or women: overweight, smokers, women over 40, same-sex partners, single mothers, etc. Even within the field of ART, it is often seen as something that should only be available for “deserving” women. At what point can a doctor refuse to assist a prospective patient? Those with seemingly “simpler” problems are favored, and not only because they increase a doctor's success statistics, but also if the reason is clearly not the woman's “fault” she's seen as more morally deserving of ART than someone whose lifestyle factors may have contributed to her infertility, even if the biological causation is the same.

<sup>17</sup>Although only in some states. See <http://www.inciid.org/article.php?cat=statemandates&id=275>.



This difference becomes particularly important in thinking about potential changes in the social field of infertility in the years to come. Much of the infrastructure necessary for international adoption has come under some scrutiny recently as concerns about “baby trafficking” emerged, first in the press and then in Congress. However, adoption in general continues to enjoy broad, bipartisan support. The future of the ARTs is somewhat less clear, in large part because of their historical and institutional entanglement with abortion. This entanglement has had both positive and negative consequences for infertility patients and their physicians. ART enjoys a protected status, because of the right to privacy covering early gestation established in *Roe v. Wade*, but that status is continually under threat as anti-abortion advocates push for state protection of fetuses and embryos at earlier and earlier stages of gestation. Proponents of ART have differentiated the procedure from abortion and contraception by highlighting its potentially more palatable use for the choice to bear children rather than the choice not to do so. But the schemas invoked by anti-abortion advocates are multi-dimensional (and beyond our scope here; see, for example, Luker, 1985) and the impact of an overturning of *Roe* on ART is uncertain. Current proposals from Congresspersons with conservative Christian electoral bases include allowing IVF but prohibiting procedures that may damage the embryo (such as preimplantation genetic diagnosis, or PGD) and the destruction of embryos. These proposals reflect an opposition to abortion on the grounds that it is murder. Advocates who oppose abortion and contraception on the grounds that physicians and patients are meddling in areas best left to God (the position taken by the Catholic Church) are against ART of all kinds. Here we see clearly how the transposability of schemas matters: the different schemas that underlie opposition to abortion produce quite variable stances when they are transposed onto ART.

Just before Louise Joy Brown was born, IVF was treated in the media as potentially monstrous and antithetical to healthy families. Just 30 years later, it is not only widely accepted, but also central to a new social field—an elaborate domain of overlapping structures. This chapter has suggested that this kind of structural change is both part of the proper domain of social demography and amenable to analysis with TCA. If we are to understand why demographic rates are what they are, how they vary, and why they change, then we will have to analyze the structures in which vital events occur.

## Conclusion: What Now?

In this book, we have offered an integrative approach to social change and variation, the Theory of Conjunctural Action (TCA), with illustrative applications to problems in the demography of fertility and family. We did not invent this approach, but rather have pieced it together from research in related fields, and have sought to make it applicable for demography. Because of their provenance, the premises of TCA are consistent with current knowledge in our sister disciplines, including biology, the cognitive and brain sciences, psychology, anthropology, and other social sciences, as we outlined in [Chapter 2](#). This quality is important and distinctive. Classical rational choice theory has many virtues, but it is just not plausible as an empirical description of most human action: too little of what we do is “decision-making,” and too much of that is subject to ambivalence, preferences that are not strictly ordered, biases, shortcuts, and heuristic to make the “deliberative equilibrium” a good assumption. Indeed, no strictly methodologically individualist model can capture the key processes that drive change and variation in demographic rates, since these processes are not themselves strictly individual, but social and structural.

Ronald Lee (2001), among others, has called for more formal macro-demography, more focus on population dynamics, and more attention to the properties of populations as aggregates of a special kind. Part of that agenda requires more sophisticated mathematical modeling, which is far from what we do here; another part of Lee’s agenda, however, is very closely related to what we do here. He points to the need for better integration of individual-level processes and those that unfold at aggregate or macro levels, linking “behavioral” and “formal” demography. TCA addresses this by linking the structures that make up the social ecology of human societies, individuals’ cognitive processes and agency, and the characteristics and dynamics of events in individuals’ daily lives. TCA moves us forward, we hope, but also in some ways back: back to a traditional demographic focus on the distribution of exposures and variation in population rates, rather than on individual-level associations between traits and choices.

By shifting attention from the individual to the structures in which she lives, TCA also shifts attention from individual causes (material or ideational) to their interrelations. We propose a way of integrating the factors that contribute to demographic outcomes. TCA shifts attention away from arguments about culture *vs.* structure to

focus on the ways in which ideational and material aspects of social organization are interdependent, and on the ways that specific historical—or life-historical—conjunctures matter. That is, instead of disembodied and dehistoricized individual rationality, this approach emphasizes context, interaction, and time.

The success of our work will be measured by the usefulness of TCA to current and future researchers and whether our efforts provide impetus for additional theory development. We believe that TCA has the potential to enrich thinking about the mechanisms that lead to demographic events and population-level patterns in those events. It has the potential to bring social demographic research more explicitly into dialogue with work in other fields. Because it is integrative of many lines and styles of research, it suggests many different directions. But it is also challenging in both its complexity and its requirements for measurement and modeling. Moving to its application in hypothesis testing studies will inevitably require simplifications and a great deal intervening research and development. In the first section of this conclusion we discuss how our approach should be evaluated, drawing from scholarship in the history and philosophy of science. We then move to a discussion of methodological issues in the development of TCA and to potential avenues for addressing these, both through innovation and through the integration of existing approaches.

## How Should TCA Be Assessed?

TCA may be seen most usefully as a “theoretical orientation” that defines and integrates a set of common mechanisms that produce family change and variation.<sup>1</sup> Theoretical orientations are perspectives on the social world that focus research attention on specific processes while ignoring others. For this reason, debates between theoretical orientations are “not strictly resolvable by empirical research findings” (Calhoun, 2002, p. 481); the salient question is whether the theoretical orientation provides a useful lens for approaching some set of phenomena. We have tried to make the case that TCA does provide a useful lens for integrating some widely disparate findings and making sense of a large swath of family behavior. At the same time, Calhoun’s warning that such debates are not *strictly* resolvable by empirical evidence does not imply that empirical evidence is irrelevant. We hope that we can become, as James Anderson (now emeritus from the Anthropology Department at UC Berkeley) used to say, “somewhat less wrong over time”. In [Chapter 2](#), we sought to show that the TCA is consistent with what scholars in related fields are learning about human cognition and action. That is, TCA aims to get right both the extensional outputs and—as much as possible—the actual unfolding processes.

People trained in different theoretical orientations evaluate theory using different criteria. TCA is not a theory that states laws, as required by the deductive philosophy

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<sup>1</sup>Calhoun (2002, p. 481) refers to broad, orienting theories of this type as theories of the “third kind.”

of natural science, but rather an explanation of the processes that produce outcomes. Szepter (1993) summarizes two alternative approaches to deductivist science that are widely accepted in the social sciences. Contextualist, interpretive or hermeneutic approaches recognize the influential, variable and socially constructed relationship between the observer and the object of study and hold that subject matters such as purpose, meaning, and motive must be discerned “from the inside.” Realist approaches underscore the need to understand both the internal play of meanings and external structures, and emphasize the reciprocity of causation between actors and the worlds in which they act.

Both of these approaches question the validity of the premises of deductivist approaches, particularly for the social sciences. They challenge the assumption of a closed causal system and the possibility of identifying all relevant conditions a priori; they also reject the idea inherent in deductivist approaches that explanation and prediction are equivalent to one another. These challenges are accepted by many in demography, although the alternatives are not widely accepted. Moffitt (2005, p. 106) recently reviewed approaches to addressing problems of endogeneity common in the field along with their underlying assumptions. He concluded that there is no single valid approach, and that “most of the methods that have been used in the past are open to serious objections” because of their simplifying assumptions, their failure to address the mechanisms involved in producing an outcome, and the costs inherent in sacrificing external to internal validity. He encourages more attention to theory, mechanisms, and the threats to exclusion criteria, and calls for a weighing of evidence produced by approaches with different strengths and weaknesses. TCA provides an integrative framework for such efforts.

In embracing the dynamic, open, and endogenous nature of the social world, TCA is ill-suited to deductivist models of causality. We believe that constructive realism, a model proposed by Gorski (2004, p. 19) provides an optimal way to evaluate the overarching models of the world implied by the TCA, perhaps supplemented with contextualist approaches to judging the validity of conclusions about virtual elements of structure. . . . Gorski argues that “a causal model is a simplified, linguistic representation of one or more real causal processes.” In this model, which he denotes constructive realism, explanations are evaluated by empirical adequacy rather than prediction. Competing explanations should be assessed by “how well supported they are by existing evidence, relative to other explanations. . . . The (relatively) best models are those having (in descending order of importance) the strongest evidentiary basis, the greatest explanatory power, and the widest theoretical scope” (Gorski, 2004, p. 21). Lieberson and Lynn (2002) also argue for this general approach to evaluating theory, and point out that it is, in fact, the process through which social science has generally advanced.

However, the TCA also provides a basis for generating falsifiable hypotheses based on some discrete aspect of the TCA that concern the outcomes of specific conjunctures or social processes. As illustrated in previous chapters, these hypotheses will be of two kinds: some will be contextually specific claims about which schemas and materials matter in a given case, while others will concern general claims of the TCA. Examples of these general claims include: schemas are

unequally distributed across social space; transformative events are more likely in ambiguous conjunctures; and close transpositions of schemas are more likely than distant ones. Some of these hypotheses are descriptive and can be tested by developing and implementing valid measurement tools and using them to collect appropriate data on appropriate study populations. In many cases, tests of causal hypotheses may credibly draw on experimental designs or one of the many approaches to causal inference developed for use with observational data. Testing these kinds of general claims will require repeated empirical investigation. No single study can conclusively evaluate them. Smaller, historically specific hypotheses concerning the materials and schemas that matter in concrete instances should, in principle, be more easily tested.

## **Methodological Challenges and Possible Solutions**

The TCA forces us out of the mold of conventional social demographic research in many respects. Some of the changes lead us back to the traditional domain of demography as a discipline focused on aggregate dynamics. Some of the changes lead us toward our sister disciplines, in thinking more and differently about human cognition and sociality. Some of the changes lead us simply forward, out into as yet uncharted territory where disciplinary divisions are organized differently than today.

TCA shifts our attention from individual characteristics to conjunctures, that is, to the short-term configurations of structure that are the proximal contexts of events, for two reasons. The first reason is that behaviors, and thus vital events, are modeled here as the product of conjunctures and their construal—that is, a proper understanding of behavior requires mastery of the distribution of conjunctures, since they are the relevant exposures. In this way, TCA really calls for a reinstatement of classical demography, in which marital status and parity for example are considered conditions in which people find themselves—and for which rates are thus calculated separately—rather than individual characteristics to be controlled in a multivariate regression model. The second reason that TCA shifts our attention to conjunctures is because of its focus on structures; conjunctures are the mechanism for structures to be reinforced or transformed, and therefore they are broadly consequential beyond the specific vital events that may or may not emerge from them.

TCA also encourages us to move away from seeking to isolate the pure effects of specific variables on outcomes to understanding how outcomes emerge from the confluence of circumstances. Existing approaches in the quantitative social sciences focus on trying to identify exogenous effects, whereas TCA embraces the endogenous nature of the social world. TCA recognizes selection processes, but views these as part of the reality to be explained, rather than as confounders to be controlled. Most current models in social demography seek to separate strands of causality (and most of those at the individual level); TCA focuses on the interwoven quality of the causal web. It is messier, to be sure, but it is also empirically more accurate.

In addition, TCA compels us to measure not only the “objective” facts of people’s lives—their incomes, years of education, and sexual history—but also the subjective meanings of these facts to the individual and those around him or her. TCA draws attention to the schemas embedded in structures. It invites us to study how individuals’ interaction with structures influences the schemas they learn, the way they value and store those schemas (e.g., as core elements of identity or peripheral knowledge), and the ways in which they deploy them in their lives.

To some extent, demographic research on family behaviors has begun to move in these three directions. Research on sexual behavior has increasingly begun to focus on the characteristics of relationships and sexual encounters as well as on the individuals involved in them (e.g., Kaestle & Halpern, 2005; O’Sullivan, Cheng, Harris, & Brooks-Gunn, 2007; Ryan, Franzetta, Manlove, & Holcombe, 2007). Increasingly studies are being designed to include qualitative as well as quantitative methods, with the goal of gaining a deeper understanding of the meanings that people give to various statuses and behaviors (e.g., Axinn & Pearce, 2006; Manning & Smock, 2005; Winston et al., 1999). Scholars are increasingly working to develop innovative ways of modeling outcomes that are jointly determined (e.g., Brien et al., 1999), and how social relationships and networks influence outcomes (Rutenberg & Watkins, 1997). To the extent that research on neighborhood effects captures the effects of structures, this literature also begins to address how structures, and the schemas and materials that constitute them, influence demographic behaviors (e.g. Harding, 2007; Harris and Cheng, 2005).

However, these are partial steps. Many of the methods we will need to evaluate TCA, and to use it, have not yet been developed. We encourage the development of new measurement strategies for key concepts and processes, both in the TCA framework specifically and related to demographic processes broadly. These questions amount to a methodological agenda to bridge the gap between traditional demographer’s science, the “thick” methods of anthropologists, and the laboratory methods of psychologists. We call for creative, interdisciplinary work to open up the methodological alternatives. Here we discuss four directions for methodological innovation in social demography. These include measuring schemas, broadening the conceptualization and measurement of materials, moving towards the study of events rather than individuals, and strengthening the measurement of context and structure.

### *Measuring Schemas*

The concept of schema is foundational to TCA. It refers to a variety of mental phenomena, including prototypes, scripts, beliefs, and attitudes, only some of which have been measured in demographic research. By definition, schemas are virtual and cannot be directly observed and measured. Rather, researchers must infer schemas from observable material forms such as behaviors, speech, text, and material objects. We can indeed measure schemas, but we cannot do so directly. Thus, research on

schemas requires important reflections on methods and epistemology, as well as innovation.<sup>2</sup>

In [Chapter 4](#), Bachrach, Smock, and Hoelter argued that while upper middle class women know that some people have children as unmarried teens, this family formation structure is not prominent in their own social ecologies. As a result, the schema of having a child out-of-wedlock is, paraphrasing Coale (1973), “not within the calculus of conscious choice” for them. Their explanation is grounded in qualitative research that underscores the taken-for-granted nature of waiting until marriage among UMC women (Orenstein, 2000; Sassler and Cunningham, 2008) and the greater apparent ease with which unmarried lower class teens decide to carry to term if they become pregnant (Farber, 1991). But how to test the hypothesis that the availability of a schema that accepts (without necessarily approving) premarital childbearing allows young LC couples to slip into early parenthood with less intentionality? Ideally, this hypothesis would be tested by collecting comparative data on schemas that exist within lower class and upper middle class communities, and particularly by identifying contexts in which different configurations of schemas circulate. But determining how to measure these schemas, their availability, and the extent to which they are linked to important affective and identity structures, implies a research agenda that demographers are unlikely to address well without drawing on the expertise of cognitive psychologists, anthropologists, and conceivably, neuroscientists.<sup>3</sup>

Existing approaches to measuring schemas cover a broad swath of scientific methods. We distinguish four major categories: holistic ethnographic analyses of actions, interactions, and physical artifacts; linguistic, cognitive anthropological, and computational analyses of text, narrative, conversation or other forms of discourse; the use (in both psychology and anthropology) of directed tasks that require research subjects to activate their mental models of the world and thus reveal them; and direct queries (in questionnaires) that ask subjects to rate their agreement with statements expressing a particular schema. For convenience of reference, we denote these ethnography, textual analysis, directed tasks, and self-report, respectively.

Deep ethnography provides the gold standard for measuring schemas because it draws on the broadest evidence for inferring the ideas and values that drive action in a particular setting. Ethnographers live in the communities that they study, allowing themselves to be overtaken by their subjects, their categories, rhythms, and worlds. The ethnographer thus writes not only from fieldnotes and tape recordings, but also from a well of lived experience. This means that no interpretation of a quote or

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<sup>2</sup>All measurements used in research must be materials in the sense that they must appear in some observable form. This is true for measurements of schemas as well as materials. Ethnographic insights as to cultural models depend on “reading” the models from the behaviors, speech, and environments of subjects. Our typical measures of “schema”-related constructs in survey research—for example, attitudes and beliefs—rely on a material form, a self-report expressed through speech, writing, or keyboard stroke.

<sup>3</sup>Recent work that uses reaction times in responses to paired stimuli may provide a useful quantitative tool for obtaining measures of deep schemas (e.g. Fazio & Olson, 2003).



an event is made in isolation, but rests on a broad understanding of how a social system holds together. However, ethnography—and especially good ethnography—is time consuming and difficult to replicate (see discussion in Hirsch et al., 2010). Ethnographic inferences gain credibility when independent ethnographies draw the same conclusions, but ethnography is rarely truly independent, nor is it clear that it could be. The best ethnographic work is replete with concrete examples that another scholar can reinterpret and rich discussions of the reasons for a particular interpretation. Certainly not all ethnography achieves that standard, and those that do take a very long time to complete—ideally several years of fieldwork.

Textual analysis (one of many possible ethnographic methods) is a natural choice for the measurement of schemas on many grounds (D’Andrade, 1995; Quinn, 2005). The simplest schemas (e.g., robin, sad) are closely tied to language, and language provides tags for many schemas that are more complex (e.g., sell, navigation). Further, the schemas people have and the way they organize them cognitively has a powerful influence on how they use language to create descriptions, explanations and narratives. This means that systematic analyses of the structure and content of narratives and texts can provide evidence of both recognized and “taken-for-granted” schemas. These analyses are highly time-intensive, and efforts to develop computational routines for supplementing the “meaning-making” of the analyst have begun to develop (Carley, 1997). These tools may help to make these analyses more systematic, replicable, and efficient, but at present they do not appear to offer a complete solution to the need to infer meaning.

Psychologists and social scientists have developed a variety of directed tasks that reveal schemas by forcing research subjects to activate them. These indirect methods combine certain aspects of qualitative and quantitative approaches. Examples include:

- Open-ended questions can be constructed that do not assume the existence, organization, or character of the schemas to be measured. For example, Metzger and Williams (1966; cited in D’Andrade, 1995) elicited schemas about firewood in a Mexican population, not by asking about firewood, but through a series of open-ended probes moving from the most general to the most specific. They first asked subjects to elaborate the categories of phenomena in the natural world, and then asked in more detail about specific categories that informants named, in this case, trees. Once they had determined that their population possessed a schema for “firewood”, they were able to elicit more information about good and bad kinds and other related schemas. Their method relied only on open-ended probing of schemas already revealed by their informants. The task rested only on assumptions that the research subjects would form categories of the natural world, not on assumptions about what those categories were.
- Vignettes present research subjects with the task of responding to a narrative, for example by completing it, attributing motivations to the actors, or evaluating behaviors. Vignettes can be varied along key dimensions to determine the features that are most central in individuals’ schematic models. In a recent example, Nock, Kingston, and Holian (2006) studied how individuals allocate responsibility for providing financial help to others by presenting respondents with vignettes of

people in need varied systematically along six dimensions (including type of need, relationship to the person in need, degree of need, culpability for the need, benefits of helping, and costs of helping).

- Sorting tasks require the research subject's manipulation of cards or other material objects in ways that reveal underlying schemas. In one example, researchers (Brown, Worthman, Costello, & Erkanli, 2006) used cards showing many possible events that can occur over the life course and asked participants to choose those that belonged in their view of a good life. A similar approach was adopted to ascertain scripts for romantic relationships in a large national study of adolescents (O'Sullivan et al., 2007). Shweder (2003) asked research subjects to assign a set of cards representing members of a prototypical family to sleeping rooms in differently configured houses to explore schemas of gender and family relationships.
- Reaction time methods measure the amount of time it takes research participants to complete structured tasks. For example, implicit attitude tests measure how closely associated pairs of schemas (e.g., "black man" and "dangerous") are in people's minds. The method rests on the assumption that the faster one is able to react to a pair of schemas, the more likely that the individual's schema for one is linked to the other (Greenwald, McGhee, & Schwartz, 1998).
- Experiments can activate—but not explicitly elicit—one or another schema. Much of the work in surveys on priming and framing fits into this category. More recently, Weinreb's innovative experiments with using insiders versus outsiders as survey-takers (2006, as well as work currently in process) have clear implications for thinking about how to get people to use schemas rather than reflect on them.

These examples by no means exhaust the existing or possible tasks that could be devised to elicit schemas in interactions with research participants.

Finally, demographers, psychologists, and other social scientists have developed a vast array of self-reported questionnaire measures—from single items to complex scales—to measure attitudes, beliefs, and values in the context of surveys and other studies. Along with ethnography, these have dominated the measurement of cultural or ideational factors in demographic research. When the prevalent schemas in a population are well characterized through other means, these tools provide efficient methods for eliciting the extent to which they are also consciously held by subjects. Many important schemas are not consciously available in the course of ordinary interaction, and asking research subjects to think about them changes the schemas in important ways. Social desirability biases often filter self-reported measures (Stone et al., 2000) but also affect any measurement strategies that involve interaction between an observer and a subject. Structured questions can be deeply problematic if the research subject does not hold schema implied the question, a problem van de Walle (1992) illustrated by showing how women who did not hold "numerate" schemas about family size responded to ubiquitous questions about how many children they wanted to have.

These measurement approaches point to a rich set of possibilities for expanding and refining the measurement of schemas and adapting them to the survey

methodologies so often used in demography. Existing survey approaches to attitude measurement could be refined and expanded. Innovative methods for measuring different types of schemas (e.g., learning what the term “family” means to someone) can be developed. Moving away from questions that ask people to articulate their beliefs and toward techniques for inferring schemas indirectly (such as using scenarios, discourse analysis, or card-sorting activities) may be particularly effective for learning about the schemas motivating family behavior. Increased use of textual analysis and computational approaches can take advantage of the widespread availability of culturally rich texts in print, on line, and in everyday discourse. And, of course, ethnographies will continue to be a vital tool for uncovering schemas.

These possibilities come with theoretical and methodological challenges. People can hold multiple schemas simultaneously; we need theory to guide our prediction of what schema or schemas an individual will draw on in a particular conjuncture. We need methods not only to measure schemas but to understand their organization and characteristics. In [Chapter 1](#) we develop a typology of schemas including “deep” and “visceral” schema. The former are fundamental in the sense that other schemas build on them (e.g., the American schema that problems can be solved by “segmenting tasks” and “hard work and persistence”). The latter are sedimented and accompanied by corporal sensations (e.g., belief in God or drugs that comes from the relief produced by a prayer or a pill, respectively). If these types of schema are more likely to be deployed, then we must find a way to measure depth or viscosity. If schemas that are integrated into identity are more likely to be deployed, we must find ways to identify these.

This implies a methodological agenda that includes:

- Systematic research to devise and evaluate ways of measuring different kinds of schemas
- Continued work on the identification and evaluation of novel methods of measuring “known” schemas in the context of large surveys
- Techniques for embedding open-ended tools to identify schemas not previously identified by researchers in the context of large surveys
- Continued work on methods of reducing social desirability bias and other threats to valid schema measurement
- Techniques for measuring the viscosity of schemas or other factors thought to influence their likelihood of deployment.

It also implies partnership with the disciplines that have already set the stage for schema measurement: cognitive science, psychology, anthropology, sociology, and computer science.

### ***Broader Conceptualization of “Materials”***

A second line of theoretical development and research is in the measurement of the material aspects of structure. Materials are more easily measured than schemas because they are by definition observable, and therefore can be studied directly. TCA

points to two functions of materials, both of which can influence and be important for understanding individuals' behaviors: they serve as a resource for action (e.g., one uses money to purchase child care or contraception, a car to drive to work), and they manifest and convey schemas (e.g., film portrayals of families, bridal magazines). This duality raises both theoretical and methodological questions for measurement in social demographic studies. The theoretical question is how to interpret the measures typically included in demographic research: are they measuring schemas, materials, or both? The methodological question is whether the "materials" typically measured in demographic research are sufficient to capture the key elements of structure in a study of family change.

Demographic research has long relied on a relatively small set of variables that capture schemas and materials to varying extents. In the context of TCA, these variables may be best conceptualized as "markers" of schemas and materials that make a difference in demographic processes and outcomes. One of the implications of TCA is that demographers should carefully theorize both the resource and "reserve of value" meanings of what they measure. For example, the presence of a contraceptive clinic in a neighborhood may not only make contraception more accessible, it may also signal that contraception is an approved behavior. Income provides resources to meet basic needs, go to college, and acquire material possessions (such as designer clothes and fancy cars) that signal status. If income positively affects the chances of marrying, is this because it provides the means for an independent living, because high status individuals are more attractive as potential spouses, or both? Maternal employment has a particularly rich set of implications: it generates income, reinforces certain skill-sets in the mother, and takes time away from raising children. But it also carries symbolic meanings—what does it mean to be a woman? What are the expected roles of different family members?

Most demographic analyses incorporate some data on material resources, but these resources are theorized in a very limited way. In [Chapter 5](#), Johnson-Hanks and King discuss some of the materials that have been relevant to the emergence of a social field of infertility. Some of these—such as new technologies and limits to federal grant funding—would likely show up in the discussions of most social demographers. But others—such as the wording of Supreme Court rulings, the partially anonymous social support networks made possible by Internet chat rooms, or the social identity of a disadvantaged minority group coming out of the Civil Rights movement—almost certainly would not. And yet, these were very important in this case.

Measuring material structure is also important in thinking about variation. In [Chapter 4](#), Bachrach, Smock, and Hoelter showed that the simple distinction between lower class and upper middle class proxies major differences in the ecology of structures experienced by people in different classes. Structures in the domains of work, family and living arrangements, education, and parenting all vary to some extent across class lines, and varying structures complement and shape each other within social ecological niches. Traditional demographic measures of educational attainment, family structure, and occupation provide indicators of a person's social location and relationship to these structures, while measures of income, work hours,

and proximity of kin provide direct measurement of some of their material dimensions. The TCA requires us to ask whether these familiar measures are the most crucial for driving action in particular kinds of conjunctures. Are we doing as good a job of measuring materials that serve to represent and convey schemas as we do in measuring those, such as income, that are deployed in the pursuit of goals? One substantial improvement would be to develop ways to measure material structures that motivate, in addition to those which facilitate, action. Examples might include weddings, baby clothes, and singles bars. How could such measures be conceptualized, created, and validated?

Not all variables are likely to represent both material resources and “reserves of value” in equal weights. For example, the prevalence of pro-choice attitudes in a social network is probably more important as a reserve of value than as a resource. The sex ratio of a neighborhood is an important resource for someone looking for a partner of the desired sex, but usually carries little symbolic meaning. The key point for TCA is the need to theorize the meanings of standard demographic measures as completely as possible.

In addition to pointing to the need for more comprehensive interpretation of the variables we typically *do* measure in demographic research, TCA also draws attention to the variables we *do not* measure. In particular, it directs us to develop creative ways of measuring materials that not only provide resources for action but also those that embody schemas. The strategies for measuring schemas discussed above are relevant primarily to individual level analyses, but TCA prompts us to attend to schemas at the contextual level as well. Materials in the social environment may be undervalued as potential reserves of shared cultural schemas. For example, sociologists have usefully used measures of neighborhood disrepair (e.g., broken windows) to stand in for schematic concepts such as neighborhood disorganization (Sampson and Raudenbush, 2004). It would not be unusual for a demographic study to measure the price of contraception and restrictions on its distribution; but studies could also measure how contraceptives are packaged, advertised and marketed—materials that embody schemas about who should use contraception and whether it is sexy or medical. Should family demographers consider collecting data on the selections of magazines, books, and videos in neighborhood markets or the display of pictures of babies and families in homes? Should they be attending to the reserves of value in public policies and programs as well as their incentive effects?

Other types of materials that are infrequently measured in demographic studies are the human elements. What other people in the social environment say and do plays a critical role in the acquisition and transmission of schemas. Some research in family demography has measured these materials, particularly in contextual (Billy, Brewster, & Grady, 1994; Harris & Cheng, 2005) and social network (Rindfuss, Bumpass, & Choe, 2004) research. Methodological studies to improve the treatment of endogeneity in social interaction studies and develop measurement tools capable of capturing real-time social learning may prove highly productive.

The message that family demographers should think more critically about measures is not new (Szreter et al., 2004; Riley & McCarthy, 2003). However, demography’s reliance on large, representative, multi-purpose surveys makes it

difficult to develop and collect the wide range of measures that may be needed to understand multiple demographic outcomes in diverse settings. TCA may best be developed in the context of smaller, more focused studies limited to particular structures and contexts.

### *Greater Focus on Conjunctures and Events*

TCA encourages us to think about change and variation in vital rates as arising from two sources: the differential distribution of conjunctures, and their differential construal. For example, divorce rates are the product of how many people find themselves in unhappy marriages and how many of those construe an unhappy marriage as reason to divorce. If unhappy marriages become more common in some subset of the population without any change in the patterns of construal, divorce rates will rise. Divorce rates can also rise if the distribution of conjunctures remains unchanged, but their construal changes. (Given the interrelations between schemas and materials, conjunctures and structures, we would expect that changes in one would lead to changes in the other, but not immediately.) This is of course a variant of a very traditional idea in demography—indeed, one of demography’s most fundamental contributions to the social sciences: exposure matters. When we calculate fertility rates separately for the married and the unmarried, we do so because exposure matters. When we calculate marital-status transition rates in a multi-state life table, we do so because exposure matters. Where TCA offers a variant to the classical approach (think of Keyfitz & Caswell 2005, for example) is in its focus on the detailed micro-contexts of exposure. But the basic idea is a core demographic one.

Focusing on conjunctures and events means shifting our unit of analysis from the individual to the situation. Some conjunctures do now receive attention, such as the resolution of an unintended pregnancy occurring to an unmarried woman, but most do not. And even when these kind of conjunctures are studied, they are generally treated as part of sampling frame—that is, the questions are still organized around the individual-level associations between characteristics and behaviors. TCA suggests two changes. First, family demographers should examine a much broader range of conjunctures, and conjunctures at a broader range of scales, than is currently common practice. In particular, the keys to understanding behavioral outcomes may lie in relatively overlooked and ostensibly insignificant conjunctures, or conversely at conjunctures on a larger, trans-individual scale. For example, consider conjunctures in which a church decides whether to celebrate a birth to a single teenaged member, a group of friends discuss the health hazards or effectiveness of contraception, or a teen decides whether to study for a test or go out with a boyfriend: all of these are important in focusing attention on the material and schematic components of structures, and reinforcing or reshaping the individual’s own internalization of them.

The second change suggested by TCA is to think about how conjunctures themselves are distributed. We know that they are unequally distributed across social

space, and one of the important claims of TCA is that this unequal distribution is consequential for vital rates. Although it is important to know whether more educated women are more or less likely to abort an unwanted pregnancy, contingent on the event of pregnancy, we argue that it is at least as important to know that they are far less likely to experience that conjuncture in the first place. If we take the conjunctures themselves as our units of analysis, it would be possible—and likely very revealing—to study how they are patterned across social space: a demography of conjunctures.

Research designs that focus on particular, theoretically meaningful, conjunctures or designs that obtained random samples of the conjunctures of daily life could both contribute to a better understanding of how structures shape conjunctures, and through them, are internalized, reinforced, and ultimately able to shape human behaviors. Experience sampling methods, in which informants are asked to report on the characteristics of context and their perceptions and behaviors specific to scientifically sampled time segments, could also be useful (see Shiffman, Stone, & Hufford, 2008). In a related approach, research by Jennifer Barber and colleagues (see discussion in Barber, Gatny, & Yarger, 2010) will use frequent communication with informants to identify situations in which unprotected sexual intercourse could have occurred and to study the circumstances and motivational factors that influenced outcomes in those situations. Interaction between social demographers and social historians could offer analytic leverage on the other front, moving us toward thinking more about how schemas and materials change at a social level.

### ***Moving Beyond Individual-Level Data***

A final line of research that our analysis suggests is recognizing and incorporating the role of social relationships and interaction in our understanding of structure. Observable behaviors are among the most important materials that constitute family structures. Human learning is a social process. In the domain of highly charged intimate behaviors such as marrying and giving birth, the most important material resources through which schemas are learned may well be the observable experiences and behaviors of significant others, seen through the affective lens of relationships. And, in the process of construing and resolving conjunctures, the views and actions of other actors inevitably shape outcomes. Of course, the larger materials of structure—the institutions, policies, and marketplaces that demographers study more readily—are also important. However, especially during childhood and adolescence, these are often experienced indirectly, through the briefcase-carrying mother, the welfare caseworker, the friend who knows where to get an abortion, and the father who believes abortion is murder.

The impact of family experiences on demographic outcomes has been extensively documented by prior research (e.g. Axinn & Thornton, 1996; Cherlin, Hurt, Burton, & Purvin, 2004; Cunningham & Thornton, 2006a, 2006b; East & Jacobson, 2001; Thornton & Camburn, 1987). Recent work has also explored how behaviors



are shaped by the influence of others who model the behaviors (e.g., Harris & Cheng, 2005; Rindfuss et al., 2004). The role of social ties and interactions in demographic change has attracted increasing interest over recent decades (e.g., Behrman, Kohler, & Watkins, 2002; Bongaarts & Watkins, 1996; Montgomery & Casterline, 1996), and the development of social network modeling provides a powerful tool for empirical studies (Watkins, 2003). These developments provide insight into the mechanisms through which new schemas are introduced and promoted, while TCA provides theory about the structural environments that shape that process as well as the individual-level processing of new ideas.

Material and virtual structures are often represented in collective narratives and collectively shared schemas, social institutions, interaction rituals, and artifacts. As a result, structures that are central for explaining family outcomes cannot be understood solely using individual-level data. Their analysis should be more systematically integrated into the social demography of the family. This can be done in several ways:

- *Embedding*: research methods should be applied in combination (see Axinn & Pearce, 2006; Cherlin et al., 2004). In particular, nationally represented sample surveys with embedded ethnography and embedded experiments are likely to reveal the interplay of structural and individual forces. Researchers have used varying approaches to embedding. Debate continues on the techniques most likely to maximize the efficiency of mixed-method designs so that qualitative insights can be integrated into quantitative measurements.
- *Cross-context comparison*: Ethnographic teams with similar foci across variable and contrasting social contexts offer a way to reveal which aspects of structure matter. Examples include a coordinated ethnography of 256 poor urban families in Welfare, Children and Families: A Three-City Study (Cherlin et al., 2004) and a five-country, five-investigator comparative ethnographic study of romantic relationships, marriage and HIV (Hirsch et al., 2010). Likewise, comparable surveys administered across variable contexts can provide strong tests of specific causal models (e.g., see Morgan, Sharon, Smith, & Mason, 2002).
- *Social history*: There is a rich intellectual tradition in the social history of the family, relatively little of which is directly integrated into demographic models and theories of family variation and change. Closer collaboration with historians and historical sociologists offers a relative easy way of enriching our understanding of social structural forces.

## Final Thoughts

This volume is a beginning. An exploration of several questions—can issues in social demography be conceptualized in terms of social theory that challenges the comfort zone of demographers, questions some fundamental methodological and theoretical habits? Is this social theory supported by other knowledge that has

grown out of other scientific disciplines? What does it share with understandings and practices common in demography and where does it diverge? What would we have to do to more fully explore its value for social demography, to subject it to an evaluative process that would be convincing?

The key metric for a conceptual contribution is its usefulness in answering questions and guiding research. There are two ways new conceptual frames can be useful: they can be integrative and/or revealing. In the former, distinct or contradictory knowledge can be shown to be in accord. This is where we are most confident that we have succeeded; in fact our goal from the beginning was consilience. Another potential contribution of new frameworks is that they generate new or unique insights or hypotheses. They allow us to see things that we previously missed or misinterpreted.

In the example chapters included in this volume and in other work we have done, the authors of this volume have found TCA to be helpful in this latter sense. But there is much work left to do before TCA can be judged a success or failure, or something in-between. We hope that others will join us in the task.

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