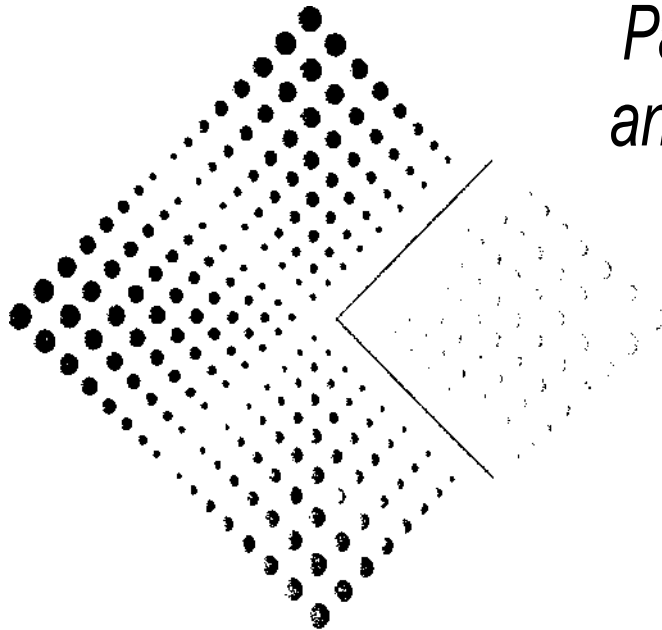


Paradigms, Theory, and Social Research



Holographic Overview

Social scientific inquiry is an interplay of theory and research, logic and observation, induction and deduction—and of the fundamental frames of reference known as paradigms.

Introduction

Some Social Science Paradigms

Macrotheory and Microtheory
 Early Positivism
 Social Darwinism
 Conflict Paradigm
 Symbolic Interactionism
 Ethnomethodology
 Structural Functionalism
 Feminist Paradigms
 Rational Objectivity Reconsidered

Elements of Social Theory

Two Logical Systems Revisited

The Traditional Model of Science
 Deductive and Inductive Reasoning:
 A Case Illustration
 A Graphic Contrast

Deductive Theory Construction

Getting Started
 Constructing Your Theory
 An Example of Deductive Theory:
 Distributive Justice

Inductive Theory Construction

An Example of Inductive Theory:
 Why Do People Smoke Marijuana?

The Links Between Theory and Research

MAIN POINTS

KEY TERMS

REVIEW QUESTIONS AND EXERCISES

ADDITIONAL READINGS

SOCIOLOGY WEB SITE

INFOTRAC COLLEGE EDITION

Introduction

There are restaurants in the United States fond of conducting political polls among their diners whenever an election is in the offing. Some take these polls very seriously because of their uncanny history of predicting winners. Some movie theaters have achieved similar success by offering popcorn in bags picturing either donkeys or elephants. Years ago, granaries in the Midwest offered farmers a chance to indicate their political preferences through the bags of grain they selected.

Such idiosyncratic ways of determining trends, though interesting, all follow the same pattern over time: They work for a while, and then they fail. Moreover, we can't predict when or why they will fail.

These unusual polling techniques point to a significant shortcoming of "research findings" based only on the observation of patterns. Unless we can offer logical explanations for such patterns, the regularities we've observed may be mere flukes, chance occurrences. If you flip coins long enough, you'll get ten heads in a row. Scientists might adapt a street expression to describe this situation: "Patterns happen."

Logical explanations are what theories seek to provide. Theories function three ways in research. First, they prevent our being taken in by flukes. If we can't explain why Ma's Diner has been so successful in predicting elections, we run the risk of supporting a fluke. If we know why it has happened, we can anticipate whether or not it will work in the future.

Second, theories make sense of observed patterns in a way that can suggest other possibilities. If we understand the reasons why broken homes produce more juvenile delinquency than do intact homes—lack of supervision, for example—we can take effective action, such as after-school youth programs.

Finally, theories shape and direct research efforts, pointing toward likely discoveries through empirical observation. If you were looking for your lost keys on a dark street, you could whip your flashlight around randomly, hoping to chance upon the errant keys—or you could use your memory of

where you had been to limit your search to more likely areas. Theories, by analogy, direct researchers' flashlights where they are most likely to observe interesting patterns of social life.

This is not to say that all social science research is tightly intertwined with social theory. Sometimes social scientists undertake investigations simply to discover the state of affairs, such as an evaluation of whether an innovative social program is working or a poll to determine which candidate is winning a political race. Similarly descriptive ethnographies, such as anthropological accounts of preliterate societies, produce valuable information and insights in and of themselves. However, even studies such as these often go beyond pure description to ask *why*? Theory is directly relevant to "why" questions.

This chapter explores some specific ways theory and research work hand in hand during the adventure of inquiry into social life. We'll begin by looking at some fundamental frames of reference, called *paradigms*, that underlie social theories and inquiry.

Some Social Science Paradigms

There is usually more than one way to make sense of things. In daily life, for example, liberals and conservatives often explain the same phenomenon—teenagers using guns at school, for example—quite differently. So might the parents and teenagers themselves. But underlying these different explanations, or theories, are **paradigms**—the fundamental models or frames of reference we use to organize our observations and reasoning.

Paradigms are often difficult to recognize as such because they are so implicit, assumed, taken for granted. They seem more like "the way things are" than like one possible point of view among many. Here's an illustration of what I mean.

Where do you stand on the issue of human rights? Do you feel that individual human beings are sacred? Are they "endowed by their creator with certain inalienable rights," as asserted by the U.S. Declaration of Independence? Are there some things that no government should do to its citizens?

Let's get more concrete. In wartime, civilians are sometimes used as human shields to protect military targets. Sometimes they are impressed into slave labor or even used as mobile blood banks for military hospitals. How about organized programs of rape and murder in support of "ethnic cleansing"?

Those of us who are horrified and incensed by such practices will probably find it difficult to see our individualistic paradigm as only one possible point of view among many. However, the Western (and particularly U.S.) commitment to the sanctity of the individual is regarded as bizarre by many other cultures in today's world. Historically, it is decidedly a minority viewpoint.

While many Asian countries, for example, now subscribe to some "rights" that belong to individuals, those are balanced against the "rights" of families, organizations, and the society at large. Criticized for violating human rights, Asian leaders often point to high crime rates and social disorganization in Western societies as the cost of what they see as our radical "cult of the individual."

I won't try to change your point of view on individual human dignity, nor have I given up my own. It's useful, however, to recognize that our views and feelings in this matter are the result of the paradigm we have been socialized into; they are not an objective fact of nature. All of us operate within many such paradigms. For example, the traditional Western view of the actual world as an objective reality distinct from our individual experiences of it is a deeply ingrained paradigm.

When we recognize that we are operating within a paradigm, two benefits accrue. First, we are better able to understand the seemingly bizarre views and actions of others who are operating from a different paradigm. Second, at times we can profit from stepping outside our paradigm. Suddenly we can see new ways of seeing and explaining things. We can't do that as long as we mistake our paradigm for reality.

Paradigms play a fundamental role in science, just as they do in daily life. Thomas Kuhn (1970) drew attention to the role of paradigms in the history of the natural sciences. Major scientific paradigms have included such fundamental viewpoints

as Copernicus's conception of the earth moving around the sun (instead of the reverse), Darwin's theory of evolution, Newtonian mechanics, and Einstein's relativity. Which scientific theories "make sense" depends on which paradigm scientists are maintaining.

While we sometimes think of science as developing gradually over time, marked by important discoveries and inventions, Kuhn says that scientific paradigms typically become entrenched, resisting any substantial change. Thus, theories and research alike take a certain fundamental direction. Eventually, however, as the shortcomings of a particular paradigm became obvious, a new one emerges and supplants the old. The seemingly natural view that the rest of the universe revolves around the earth, for example, compelled astronomers to devise ever more elaborate ways to account for the motions of heavenly bodies that they actually observed. Eventually this paradigm was supplanted by the view that the earth and other planets revolve around the sun. This was nothing less than a revolutionary change in perspective that fundamentally altered the direction of theory and research. Kuhn's classic book on this subject is entitled, appropriately enough, *The Structure of Scientific Revolutions*.

Social scientists have developed several paradigms for understanding social behavior. The fate of supplanted paradigms in the social sciences, however, has differed from what Kuhn observed in the natural sciences. Natural scientists generally believe that the succession from one paradigm to another represents progress from a false view to a true one. For example, no modern astronomer believes that the sun revolves around the earth.

In the social sciences, on the other hand, theoretical paradigms may gain or lose popularity, but they are seldom discarded altogether. The paradigms of the social sciences offer a variety of views, each of which offers insights the others lack while ignoring aspects of social life that the others reveal.

Ultimately, paradigms are not true or false; as ways of looking, they are only more or less useful. Each of the paradigms we are about to examine offers a different way of looking at human social life. Each makes certain assumptions about the nature

of social reality. As we shall see, each can open up new understandings, suggest different kinds of theories, and inspire different kinds of research.

Macrotheory and Microtheory

Let's begin with a difference concerning focus that stretches across many of the paradigms we'll discuss. Some social theorists focus their attention on society at large, or at least on large portions of it. Topics of study for such **macrotheory** include the struggle between economic classes in a society, international relations, or the interrelations among major institutions in society, such as government, religion, and family. Macrotheory deals with large, aggregate entities of society or even whole societies.

Some scholars have taken a more intimate view of social life. **Microtheory** deals with issues of social life at the level of individuals and small groups. Dating behavior, jury deliberations, and student-faculty interactions are apt subjects for a microtheoretical perspective. Such studies often come close to the realm of psychology, but whereas psychologists typically focus on what goes on inside humans, social scientists study what goes on between them.

The distinction between macro- and micro-theory cuts across the other paradigms we'll examine. Some of them, such as symbolic interactionism and ethnomethodology, are more often limited to the microlevel. Others, such as the conflict paradigm, can be pursued at either the micro- or the macrolevel.

Early Positivism

When the French philosopher Auguste Comte (1798-1857) coined the term *sociologie* in 1822, he launched an intellectual adventure that is still unfolding today. Most importantly, Comte identified society as a phenomenon that can be studied scientifically. (Initially, he wanted to label his enterprise 'social physics,' but that term was taken over by another scholar.)

Prior to Comte's time, society simply was. To the extent that people recognized different kinds of

societies or changes in society over time, religious paradigms generally predominated in explanations of such differences. The state of social affairs was often seen as a reflection of God's will. Alternatively, people were challenged to create a "City of God" on earth to replace sin and godlessness.

Comte separated his inquiry from religion. He felt that religious belief could be replaced with scientific study and objectivity. His "positive philosophy" postulated three stages of history. A "theological stage" predominated throughout the world until about 1300. During the next five hundred years, a "metaphysical stage" replaced God with philosophical ideas such as "nature" and "natural law."

Comte felt he was launching the third stage of history, in which science would replace religion and metaphysics by basing knowledge on observations through the five senses rather than on belief or logic alone. Comte felt that society could be observed and then explained logically and rationally and that sociology could be as scientific as biology or physics.

In a sense, all social research descends from Comte. His view that society could be studied scientifically came to form the foundation for subsequent development of the social sciences. In his optimism for the future, he coined the term *positivism* to describe this scientific approach, in contrast to what he regarded as negative elements in the Enlightenment. As we'll note later in this discussion, only in recent decades has the idea of positivism been seriously challenged.

Social Darwinism

Comte's major work on his positivist philosophy was published between 1830 and 1842. One year after the publication of the first volume in that series, a young British naturalist set sail on HMS *Beagle*, beginning a cruise that would profoundly affect the way we think of ourselves and our place in the world.

In 1858, when Charles Darwin published his *The Origin of Species*, he set forth the idea of evolution through the process of natural selection. Simply put, the theory states that as a species coped with its environment, those individuals most suited

to success would be the most likely to survive long enough to reproduce. Those less well suited would perish. Over time the traits of the survivor would come to dominate the species. As later Darwinians put it, species evolved into different forms through the "survival of the fittest."

As scholars began to study society analytically, it was perhaps inevitable that they would apply Darwin's ideas to changes in the structure of human affairs. The journey from simple hunting-and-gathering tribes to large, industrial civilizations was easily seen as the evolution of progressively "fitter" forms of society.

Among others, Herbert Spencer (1820-1903) concluded that society was getting better and better. Indeed, his native England had profited greatly from the development of industrial capitalism, and Spencer favored a system of free competition, which he felt would insure continued progress and improvement. Spencer may even have coined the phrase, "the survival of the fittest." In any event, he believed that this principle was a primary force shaping the nature of society. Social Darwinism or social evolution was a popular view in Spencer's time, although it was not universally accepted.

This excerpt from a social science methods textbook published in 1950 illustrates the long-term popularity of the notion that things are getting better and better.

The use of atomic energy as an explosive offers most interesting prospects in the civil as in the military field. Atomic explosives may be used for transforming the landscape. They may be used for blasting great holes and trenches in the earth, which can be transformed into lakes and canals. In this way, it may become possible to produce lakes in the midst of deserts, and thus convert some of the worst places in the world into oases and fertile countries. It may also be possible to make the Arctic regions comfortable by providing immense and constant sources of heat. The North Pole might be converted into a holiday resort.

(Gee 1950:339-40)

Quite aside from the widespread disenchantment with nuclear power, contemporary concerns

over global warming and the threat of rising sea levels illustrate a growing consciousness that "progress" is often a two-edged sword. Clearly, most of us operate today from a different paradigm.

Conflict Paradigm

One of Spencer's contemporaries took a sharply different view of the evolution of capitalism. Karl Marx (1818-1883) suggested that social behavior could best be seen as the process of conflict: the attempt to dominate others and to avoid being dominated. Marx focused primarily on the struggle among economic classes. Specifically, he examined the way capitalism produced the oppression of workers by the owners of industry. Marx's interest in this topic did not end with analytical study: He was also ideologically committed to restructuring economic relations to end the oppression he observed.

The contrast between the views set forth by Spencer and Marx indicates the influence of paradigms on research. These fundamental viewpoints shape the kinds of observations we are likely to make, the sorts of facts we seek to discover, and the conclusions we draw from those facts. Paradigms also help determine which concepts we see as relevant and important. Whereas economic classes were essential to Marx's analysis, for example, Spencer was more interested in the relationship between individuals and society—particularly the amount of freedom individuals had to surrender for society to function.

The conflict paradigm proved to be fruitful outside the realm of purely economic analyses. Georg Simmel (1858-1918) was especially interested in small-scale conflict, in contrast to the class struggle that interested Marx. Simmel noted, for example, that conflicts among members of a tightly knit group tended to be more intense than those among people who did not share feelings of belonging and intimacy.

In a more recent application of the conflict paradigm, when Michel Chossudovsky's (1997) analysis of the International Monetary Fund and World Bank suggested that these two international organizations were increasing global poverty rather than

eradicating it, he directed his attention to the competing interests involved in the process. In theory, the chief interest being served should be the poor people of the world or perhaps the impoverished, Third-World nations. The researcher's inquiry, however, identified many other interested parties who benefited: the commercial lending institutions who made loans in conjunction with the IMF and World Bank and multinational corporations seeking cheap labor and markets for their goods, for example. Chossudovsky's analysis concluded that the interests of the banks and corporations tended to take precedence over those of the poor people, who were the intended beneficiaries. Moreover, he found many policies were weakening national economies in the Third World, as well as undermining democratic governments.

Whereas the conflict paradigm often focuses on class, gender, and ethnic struggles, it would be appropriate to apply it whenever different groups have competing interests. For example, it could be fruitfully applied to understanding relations among different departments in an organization, fraternity and sorority rush weeks, or student-faculty-administrative relations, to name just a few.

Symbolic Interactionism

In his overall focus, Georg Simmel differed from both Spencer and Marx. Whereas they were chiefly concerned with macrotheoretical issues—large institutions and whole societies in their evolution through the course of history—Simmel was more interested in how individuals interacted with one another. In other words, his thinking and research took a "micro" turn, thus calling attention to aspects of social reality that are invisible in Marx's or Spencer's theory. For example, he began by examining dyads (groups of two people) and triads (of three people). Similarly, he wrote about "the web of group affiliations."

Simmel was one of the first European sociologists to influence the development of U.S. sociology. His focus on the nature of interactions particularly influenced George Herbert Mead (1863-1931), Charles Horton Cooley (1864-1929), and

others who took up the cause and developed it into a powerful paradigm for research.

Cooley, for example, introduced the idea of the "primary group," those intimate associates with whom we share a sense of belonging, such as our family, friends, and so forth. Cooley also wrote of the "looking-glass self" we form by looking into the reactions of people around us. If everyone treats us as beautiful, for example, we conclude that we are. Notice how fundamentally the concepts and theoretical focus inspired by this paradigm differ from the society-level concerns of Spencer and Marx.

Mead emphasized the importance of our human ability to "take the role of the other," imagining how others feel and how they might behave in certain circumstances. As we gain an idea of how people in general see things, we develop a sense of what Mead called the "generalized other."

Mead also showed a special interest in the role of communications in human affairs. Most interactions, he felt, revolved around the process of individuals reaching common understanding through the use of language and other such systems, hence the term *symbolic interactionism*.

This paradigm can lend insights into the nature of interactions in ordinary social life, but it can also help us understand unusual forms of interaction, as in the following case. Emerson, Ferris, and Gardner (1998) set out to understand the nature of "stalking." Through interviews with numerous stalking victims, they came to identify different motivations among stalkers, stages in the development of a stalking scenario, how people can recognize if they are being stalked, and what they can do about it.

Ethnomethodology

While some social scientific paradigms emphasize the impact of social structure on human behavior—that is, the effect of norms, values, control agents, and so forth—other paradigms do not. Harold Garfinkel, a contemporary sociologist, claims that people are continually creating social structure through their actions and interactions—that they are, in fact, creating their realities. Thus, when you and your instructor meet to discuss your

term paper, even though there are myriad expectations about how you both should act, your conversation will differ somewhat from any of those that have occurred before, and how you each act will somewhat modify your expectations in the future. That is, discussing your term paper will impact the interactions each of you have with other professors and students in the future.

Given the tentativeness of reality in this view, Garfinkel suggests that people are continuously trying to make sense of the life they experience. In a sense, he suggests that everyone is acting like a social scientist, hence the term *ethnomethodology*, or "methodology of the people."

How would you go about learning about people's expectations and how they make sense out of their world? One technique ethnomethodologists use is to break the rules, to violate people's expectations. Thus, if you try to talk to me about your term paper but I keep talking about football, this might reveal the expectations you had for my behavior. We might also see how you make sense out of my behavior. ("Maybe he's using football as an analogy for understanding social systems theory.")

In another example of ethnomethodology, John Heritage and David Greatbatch (1992) examined the role of applause in British political speeches: How did the speakers evoke applause, and what function did it serve (for example, to complete a topic)? Research within the ethnomethodological paradigm has often focused on communications.

There is no end to the opportunities you have for trying out the ethnomethodological paradigm. For instance, the next time you get on an elevator, spend your ride facing the rear of the elevator. Don't face front and watch the floor numbers whip by (that's the norm, or expected behavior). Just stand quietly facing the rear. See how others react to this behavior. Just as important, notice how you feel about it. If you do this experiment a few times, you should begin to develop a feel for the ethnomethodological paradigm.*

*I am grateful to my colleague, Bernard McGrane, for this experiment. Barney also has his students eat dinner with their hands, watch TV without turning it on, and engage in other strangely enlightening behavior (McGrane 1994).

We'll return to ethnomethodology in Chapter 10, when we discuss field research. For now, let's turn to a very different paradigm.

Structural Functionalism

Structural functionalism, sometimes also known as "social systems theory," grows out of a notion introduced by Comte and Spencer: A social entity, such as an organization or a whole society, can be viewed as an organism. Like other organisms, a social system is made: up of parts, each of which contributes to the functioning of the whole.

By analogy, consider the human body. Each component—such as the heart, lungs, kidneys, skin, and brain—has a particular job to do. The body as a whole cannot survive unless each of these parts does its job, and none of the parts can survive except as a part of the whole body. Or consider an automobile. It is composed of the tires, the steering wheel, the gas tank, the spark plugs, and so forth. Each of the parts serves a function for the whole; taken together, that system can get us across town. None of the individual parts would be very useful to us by itself, however.

The view of society as a social system, then, looks for the "functions" served by its various components. Social scientists using the structural functional paradigm might note that the function of the police, for example, is to exercise social control—encouraging people to abide by the norms of society and bringing to justice those who do not. Notice, though, that they could just as reasonably ask what functions criminals serve in society. Within the functionalist paradigm, we might say that criminals serve as job security for the police. In a related observation, Emile Durkheim (1858-1917) suggested that crimes and their punishment provide an opportunity to reaffirm society's values. By catching and punishing thieves, we reaffirm our collective respect for private property.

To get a sense of the structural-functional paradigm, suppose you were interested in explaining how your college or university works. You might thumb through the institution's catalog and begin assembling a list of the administrators and support

staff (such as president, deans, registrar, campus security, maintenance personnel). Then you might figure out what each of them does and relate their roles and activities to the chief functions of your college or university, such as teaching or research. This way of looking at an institution of higher learning would clearly suggest a different line of inquiry than, say, a conflict paradigm, which might emphasize the clash of interests between people who have power in the institution and those who don't.

People often discuss "functions" in everyday conversations. Typically, however, the alleged functions are seldom tested empirically. Some people argue, for example, that welfare, intended to help the poor, actually harms them in a variety of ways. It is sometimes alleged that welfare creates a deviant, violent subculture in society, at odds with the mainstream. From this viewpoint, welfare programs actually result in increased crime rates.

Lance Hannon and James Defronzo (1998) decided to test this last assertion. Working with data drawn from 406 urban counties in the United States, they examined the relationship between levels of welfare payments and crime rates. Contrary to the beliefs of some, their data indicated that higher welfare payments were associated with lower crime rates. In other words, welfare programs have the function of decreasing rather than increasing lawlessness.

Feminist Paradigms

When Ralph Linton concluded his anthropological classic, *The Study of Man* (1937:490), speaking of "a store of knowledge that promises to give man a better life than any he has known," no one complained that he had left out women. Linton was using the linguistic conventions of his time; he implicitly included women in all his references to men. Or did he?

When feminists first began questioning the use of masculine pronouns and nouns whenever gender was ambiguous, their concerns were often viewed as petty, even silly. At most, many felt the issue was one of women having their feelings hurt.

their egos bruised. But be honest: When you read Linton's words, what did you picture? An amorphous, genderless human being, a hermaphrodite at once male and female, or a male! persona?

In a similar way, researchers looking at the social world from a feminist paradigm have called attention to aspects of social life that are not revealed by other paradigms. In part, feminist theory and research have focused on gender differences and how they relate to the rest of social organization. These lines of inquiry have drawn attention to the oppression of women in many societies, which in turn has shed light on oppression generally.

Feminist paradigms have also challenged the prevailing notions concerning consensus in society. Most descriptions of the predominant beliefs, values, and norms of a society are written by people representing only portions of society. In the United States, for example, such analyses have typically been written by middle-class white men—not surprisingly, they have written about the beliefs, values, and norms they themselves share. Though George Herbert Mead spoke of the "generalized other" that each of us becomes aware of and can "take the role of," feminist paradigms question whether such a generalized other even exists.

Further, whereas Mead used the example of learning to play baseball to illustrate how we learn about the generalized other, Janet Lever's research suggests that understanding the experience of boys may tell us little about girls.

Girls' play and games are very different. They are mostly spontaneous, imaginative, and free of structure or rules. Turn-taking activities like jumprope may be played without setting explicit goals. Girls have far less experience with interpersonal competition. The style of their competition is indirect, rather than face to face, individual rather than team affiliated. Leadership roles are either missing or randomly filled.

(Lever 1986:886)

Social researchers' growing recognition of the general intellectual differences between men and women led the psychologist Mary Field Belenky and her colleagues to speak of *Women's Ways of*

Knowing (1986). In-depth interviews with 45 women led the researchers to distinguish five perspectives on knowing that should challenge the view of inquiry as obvious and straightforward:

Silence: Some women, especially early in life, feel themselves isolated from the world of knowledge, their lives largely determined by external authorities.

Received knowledge: From this perspective, women feel themselves capable of taking in and holding knowledge originating with external authorities.

Subjective knowledge: This perspective opens up the possibility of personal, subjective knowledge, including intuition.

Procedural knowledge: Some women feel they have mastered the ways of gaining knowledge through objective procedures.

Constructed knowledge: The authors describe this perspective as "a position in which women view all knowledge as contextual, experience themselves as creators of knowledge, and value both subjective and objective strategies for knowing" (Belenky et al. 1986:15).

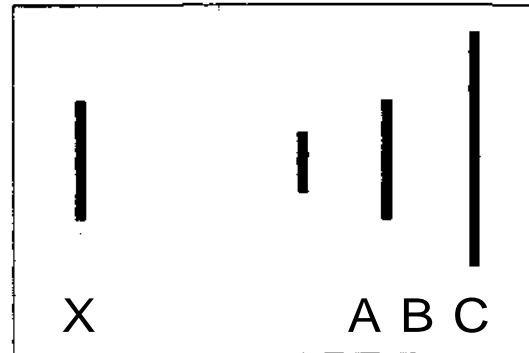
"Constructed knowledge" is particularly interesting in the context of paradigms. The positivistic paradigm of Comte would have a place neither for "subjective knowledge" nor for the idea that truth might vary according to its context. The ethno-methodological paradigm, on the other hand, would accommodate these ideas.

Rational Objectivity Reconsidered

We began this discussion of paradigms with Comte's assertion that society can be studied rationally and objectively. Since his time, the growth of science and technology, together with the relative decline of superstition, have put rationality more and more in the center of social life. As fundamental as rationality is to most of us, however, some contemporary scholars have raised questions about it.

For example, positivistic social scientists have sometimes erred in assuming that social reality can

FIGURE 2-1
The Asch Experiment



be explained in rational terms because humans always act rationally. I'm sure your own experience offers ample evidence to the contrary. Yet many modern economic models fundamentally assume that people will make rational choices in the economic sector: They will choose the highest-paying job, pay the lowest price, and so forth. This assumption ignores the power of tradition, loyalty, image, and other factors that compete with reason and calculation in determining human behavior.

A more sophisticated positivism would assert that we can rationally understand and predict even nonrational behavior. An example is the famous "Asch Experiment" (Asch 1958). In this experiment, a group of subjects is presented with a set of lines on a screen and asked to identify the two lines that are equal in length.

Imagine yourself a subject in such an experiment. You are sitting in the front row of a classroom in a group of six subjects. A set of lines is projected on the wall in front of you (see Figure 2-1). The experimenter asks each of you, one at a time, to identify the line to the right (A, B, or C) that matches the length of line X. The correct answer (B) is pretty obvious to you. To your surprise, however, you find that all the other subjects agree on a different answer!

The experimenter announces that all but one of the group has gotten the correct answer. Since you are the only one who chose B, this amounts to saying that you've gotten it wrong. Then a new set

of lines is presented, and you have the same experience. What seems to be the obviously correct answer is said by everyone else to be wrong.

As it turns out, of course, you are the only real subject in this experiment—all the others are working with the experimenter. The purpose of the experiment is to see whether you will be swayed by public pressure to go along with the incorrect answer. In his initial experiments, all of which involved young men, Asch found that a little over one-third of his subjects did just that.

Choosing an obviously wrong answer in a simple experiment is an example of nonrational behavior. But as Asch went on to show, experimenters can examine the circumstances that lead more or fewer subjects to go along with the incorrect answer. For example, in subsequent studies, Asch varied the size of one group and the number of "dissenters" who chose the "wrong" (that is, the correct) answer. Thus, it is possible to study nonrational behavior rationally and scientifically.

More radically, we can question whether social life abides by rational principles at all. In the physical sciences, developments such as chaos theory, fuzzy logic, and complexity have suggested that we may need to rethink fundamentally the orderliness of events in the physical world. Certainly the social world might be no tidier than the world of physics.

The contemporary challenge to positivism, however, goes beyond the question of whether people behave rationally. In part, the criticism of positivism challenges the idea that scientists can be as objective as the positivistic ideal assumes. Most scientists would agree that personal feelings can and do influence the problems scientists choose to study, what they choose to observe, and the conclusions they draw from their observations.

There is an even more radical critique of the ideal of objectivity. As we glimpsed in the discussions of feminism and ethnomethodology, some contemporary researchers suggest that subjectivity might actually be preferable in some situations. Let's take a moment to return to the dialectic of subjectivity and objectivity.

To begin, all our experiences are inescapably subjective. There is no way out. We can see only through our own eyes, and anything peculiar to

our eyes will shape what we see. We can hear things only the way our particular ears and brain transmit and interpret sound waves. You and I, to some extent, hear and see different realities. And both of us experience quite different physical "realities" than, say, do bats. In what to us is total darkness, a bat "sees" things like flying insects by emitting a sound we humans can't hear. The reflection of the bat's sound creates a "sound picture" precise enough for the bat to home in on the moving insect and snatch it up in its teeth. In a similar vein, scientists on the planet Xandu might develop theories of the physical world based on a sensory apparatus that we humans can't even imagine. Maybe they see X rays or hear colors.

Despite the inescapable subjectivity of our experience, we humans seem to be wired to seek an agreement on what is really real, what is objectively so. Objectivity is a conceptual attempt to get beyond our individual views. It is ultimately a matter of communication, as you and I attempt to find a common ground in our subjective experiences. Whenever we succeed in our search, we say we are dealing with objective reality. This is the agreement reality discussed in Chapter 1.

Whereas our subjectivity is individual, our search for objectivity is social. This is true in all aspects of life, not just in science. While you and I prefer different foods, we must agree to some extent on what is fit to eat and what is not or else there could be no restaurants or grocery stores. The same argument could be made regarding every other form of consumption. Without agreement reality, there could be no movies or television, no sports.

Social scientists as well have found benefits in the concept of a socially agreed-upon objective reality. As people seek to impose order on their experience of life, they find it useful to pursue this goal as a collective venture. What are the causes and cures of prejudice? Working together, social researchers have uncovered some answers that hold up to intersubjective scrutiny. Whatever your subjective experience of things, for example, you can discover for yourself that as education increases, prejudice generally tends to decrease. Because each of us can discover this independently, we say that it is objectively true.

From the seventeenth century through the middle of the twentieth, however, the belief in an objective reality that was independent of individual perceptions predominated in science. For the most part, it was not simply held as a useful paradigm but as The Truth. The term *positivism* has generally represented the belief in a logically ordered, objective reality that we can come to know better and better through science. This is the view challenged today by the postmodernists and others.

Some say that the ideal of objectivity conceals as much as it reveals. As we saw earlier, in years past much of what was regarded as objectivity in Western social science was actually an agreement primarily among white, middle-class European men. Equally real experiences common to women, to ethnic minorities, to non-Western cultures, or to the poor were not necessarily represented in that reality.

Thus, early anthropologists are now criticized for often making modern, Westernized "sense" out of the beliefs and practices of nonliterate tribes around the world, sometimes by portraying their subjects as superstitious savages. We often call orally transmitted beliefs about the distant past "creation myth," whereas we speak of our own beliefs as "history." Increasingly today, there is a demand to find the native logic by which various peoples make sense out of life and to understand it on its own terms.

Ultimately, we will never be able to distinguish completely between an objective reality and our subjective experience. We cannot know whether our concepts correspond to an objective reality or are simply useful in allowing us to predict and control our environment. So desperate is our need to know what is really real, however, that both positivists and postmodernists are sometimes drawn into the belief that their own view is real and true. There is a dual irony in this. On the one hand, the positivist's belief that science precisely mirrors the objective world must ultimately be based on faith; it cannot be proven by "objective" science, since that's precisely what's at issue. And the postmodernists, who say nothing is objectively so and everything is ultimately subjective, do at least feel that that is really the way things are.

Fortunately, as social researchers we are not forced to align ourselves entirely with either of these approaches. Instead, we can treat them as two distinct arrows in our quiver. Each approach compensates for the weaknesses of the other by suggesting complementary perspectives that can produce useful lines of inquiry.

In summary, a rich variety of theoretical paradigms can be brought to bear on the study of social life. With each of these fundamental frames of reference, useful theories can be constructed. We turn now to some of the issues involved in theory construction, which are of interest and use to all social researchers, from positivists to postmodernists—and all those in between.

Elements of Social Theory

As we have seen, paradigms are general frameworks or viewpoints: literally "points from which to view." They provide ways of looking at life and are grounded in sets of assumptions about the nature of reality.

Theories, by contrast, are systematic sets of interrelated statements intended to explain some aspect of social life. Thus, theories flesh out and specify paradigms. Whereas a paradigm offers a way of looking, a theory aims at explaining what we see.

Let's look a little more deliberately now at some of the elements of a theory. As I mentioned in Chapter 1, science is based on observation. In social research, *observation* typically refers to seeing, hearing, and—less commonly—touching. A corresponding idea is *fact*. Although for philosophers "fact" is as complex a notion as "reality," social scientists generally use it to refer to some phenomenon that has been observed. It is a fact, for example, that Bill Clinton defeated Robert Dole in the 1996 presidential election.

Scientists aspire to organize many facts under "rules" called *laws*. Abraham Kaplan (1964:91) defines *laws* as universal generalizations about classes of facts. The law of gravity is a classic example: Bodies are attracted to each other in proportion to

their masses and in inverse proportion to the distance separating them.

Laws must be truly universal, however, not merely accidental patterns found among a specific set of facts. It is a fact, Kaplan points out (1964:92), that in each of the U.S. presidential elections from 1920 to 1960, the major candidate with the longest name won. That is not a law, however, as shown by the next three elections. The earlier pattern was a coincidence.

Sometimes called principles, laws are important statements about what is so. We speak of them as being "discovered," granting, of course, that our paradigms affect what we choose to look for and what we see. Laws in and of themselves do not explain anything. They just summarize the way things are. Explanation is a function of theory, as we'll see shortly.

There are no social scientific laws that claim the universal certainty of those of the natural sciences. Social scientists debate among themselves whether such laws will ever be discovered. Perhaps social life essentially does not abide by invariant laws. This does not mean that social life is so chaotic as to defy prediction and explanation. As we saw in Chapter 1, social behavior falls into patterns, and those patterns very often make perfect sense, although we may have to look below the surface to find the logic.

As I just indicated, laws should not be confused with theories. Whereas a law is an observed regularity, a *theory* is a systematic explanation for observations that relate to a particular aspect of life. For example, someone might offer a theory of juvenile delinquency, prejudice, or political revolution.

Theories explain observations by means of concepts. Jonathan Turner (1989:5) calls concepts the "basic building blocks of theory." *Concepts* are abstract elements representing classes of phenomena within the field of study. The concepts relevant to a theory of juvenile delinquency, for example, include "juvenile" and "delinquency," for starters. A "peer group"—the people you hang around with and identify with—is another relevant concept. "Social class" and "ethnicity" are undoubtedly relevant concepts in a theory of juvenile delinquency. "School performance" might also be relevant.

A *variable* is a special kind of concept. As we saw in Chapter 1, each variable comprises a set of attributes; thus, delinquency, in the simplest case, is made up of delinquent and not delinquent. A theory of delinquency would aim at explaining why some juveniles are delinquent and others are not.

Axioms or *postulates* are fundamental assertions, taken to be true, on which a theory is grounded. In a theory of juvenile delinquency, we might begin with axioms such as "Everyone desires material comforts" and "The ability to obtain material comforts legally is greater for the wealthy than for the poor." From them we might proceed to *propositions*, specific conclusions about the relationships among concepts that are derived from the axiomatic groundwork. From our beginning axioms about juvenile delinquency, for example, we might reasonably formulate the proposition that poor youths are more likely to break the law to gain material comforts than are rich youths.

This proposition, incidentally, accords with Robert Merton's classic attempt to account for deviance in society. Merton (1957:139-57) spoke of the agreed-upon means and ends of a society. In Merton's model, nondeviants are those who share the societal agreement as to desired ends (such as a new car) and the means prescribed for achieving them (such as to buy it). One type of deviant—Merton called this type the "innovator"—agrees on the desired end but does not have access to the prescribed means for achieving it. Innovators find another method, such as crime, of getting the desired end.

From propositions, in turn, we can derive *hypotheses*. A **hypothesis** is a specified testable expectation about empirical reality that follows from a more general proposition. Thus, a researcher might formulate the hypothesis, "Poor youths have higher delinquency rates than rich youths." Research is designed to test hypotheses. In other words, research will support (or fail to support) a theory only indirectly—by testing specific hypotheses that are derived from theories and propositions.

Let's look more clearly at how theory and research come together.

Two Logical Systems Revisited

In Chapter 1, I introduced deductive and inductive reasoning, with a promise that we would return to them later. It's later.

The Traditional Model of Scenes

Most of us have a somewhat idealized picture of "the scientific method" that we've gained from science instruction ever since elementary school especially in the physical sciences. Although this traditional model of science tells only a part of the story, it's helpful to understand its logic.

There are three main elements in the traditional model of science: theory, operationalization, and observation. At this point we're already well acquainted with the idea of theory. According to the traditional model of science, scientists begin with a thing, from which they derive testable hypotheses. So, for example, as social scientists we might have a theory about the causes of juvenile delinquency. Let's assume that we have arrived at the hypothesis that delinquency is inversely related to social class. That is, as social class goes up, delinquency goes down.

To test any hypothesis, we must specify the meanings of all the variables involved in it in observational turns. In the present case, the variables are *social class* and *delinquency*. To give these terms specific meaning, we might define delinquency as "being arrested for a crime," "being convicted of a crime," or in some other plausible way, while social class might be specified in terms of family income for the purposes of this particular study.

Once we have defined our variables, we need to specify how we'll measure them. (Recall from Chapter 1 that science, in the classical ideal, depends on measurable observations.) **Operationalization** literally means specifying the exact operations involved in measuring a variable. There are many ways we can attempt to test our hypothesis, each of which allows for different ways of measuring our variables.

For simplicity, let's assume we are planning to conduct a survey of high school students. We might

operationalize delinquency in the form of the question "Have you ever stolen anything?" Those who answer "yes" will be classified as delinquents in our study; those who say "no" will be classified as nondelinquents. Similarly, we might operationalize social class by asking respondents, "What was your family's income last year?" and providing them with a set of family income categories: under \$10,000; \$10,000-\$24,999; \$25,000-\$49,999; and \$50,000 and above.

At this point someone might object that "delinquency" can mean something more or different from having stolen something at one time or another, or that social class isn't necessarily exactly the same as family income. Some parents might think body piercing is a sign of delinquency even if their children don't steal, and to some "social class" might include an element of prestige or community standing as well as how much money a family has. For the researcher testing a hypothesis, however, the meaning of variables is exactly and only what the **operational definition** specifies.

In this respect, scientists are very much like Humpty Dumpty in Lewis Carroll's *Alice's Adventures in Wonderland*. "When I use a word," Humpty Dumpty tells Alice, "it means just what I choose it to mean—neither more nor less."

"The question is," Alice replies, "whether you *can* make words mean so many different things." To which Humpty Dumpty responds, "The question is, which is to be master—that's all."

Scientists have to be "masters" of their operational definitions for the sake of precision in observation, measurement, and communication. Otherwise, we would never know whether a study that contradicted ours did so only because it used a different set of procedures to measure one of the variables and thus changed the meaning of the hypothesis being tested. Of course, this also means that to evaluate a study's conclusions about juvenile delinquency and social class, or any other variables, we need to know how those variables were operationalized.

The way we have operationalized the variables in our imaginary study could be open to other problems, however. Perhaps some respondents will lie about having stolen anything, in which cases

we'll misclassify them as nondelinquent. Some respondents will not know their family incomes and will give mistaken answers; others may be embarrassed and lie. We'll consider issues like these in detail in Part 2.

Our operationalized hypothesis now is that the highest incidence of delinquents will be found among respondents who select the lowest family income category (under \$10,000); a lower percentage of delinquents will be found in the \$10,000-\$24,990 category; still fewer delinquents will be found in the \$25,000-\$49,999 category; and the lowest percentage of delinquents will be found in the \$50,000-and-above category. Now we're ready for the final step in the traditional model of science—observation. Having developed theoretical clarity and specific expectations, and having created a strategy for looking, all that remains is to look at the way things actually are.

Let's suppose our survey produced the following data:

	<i>Percentage delinquent</i>
Under \$10,000	20
\$10,000-\$24,999	15
\$25,000-\$49,999	10
\$50,000 and above	25

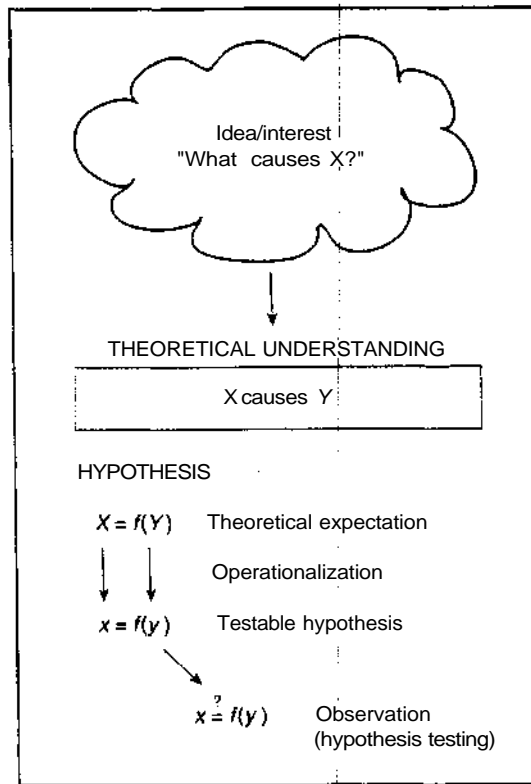
Observations producing such data would confirm our hypothesis. But suppose our findings were as follows:

	<i>Percentage delinquent</i>
Under \$10,000	15
\$10,000-\$24,999	15
\$25,000-\$49,999	15
\$50,000 and above	15

These findings would disconfirm our hypothesis regarding family income and delinquency. Disconfirmability—the possibility that observations may not support our expectations—is an essential quality in any hypothesis. In other words, if there is no chance that our hypothesis will be disconfirmed, it hasn't said anything meaningful.

For example, the hypothesis that "juvenile delinquents" commit more crimes than do "non-

FIGURE 2-2
The Traditional Image of Science



delinquents" do cannot possibly be disconfirmed, because criminal behavior is intrinsic to the notion of delinquency. Even if we recognize that some young people commit crimes without being caught and labeled as delinquents, they couldn't threaten our hypothesis, since our observations would lead us to conclude they were law-abiding nondelinquents.

Figure 2-2 provides a schematic diagram of the traditional model of scientific inquiry. In it we see the researcher beginning with an interest in a phenomenon (such as juvenile delinquency). Next comes the development of a theoretical understanding, in this case that a single concept (such as social class) might explain others. The theoretical considerations result in an expectation about what should be observed if the theory is correct. The notation $X = f(Y)$ is a conventional way of saying that

X (for example, delinquency) is a function of (depends on) Y (for example, social class). At that level, however, X and F still have rather general meanings that could give rise to quite different observations and measurements. Operationalization specifies the procedures that will be used to measure the variables. The lowercase *x* in Figure 2-2, for example, is a precisely measurable indicator of capital X. This operationalization process results in the formation of a testable hypothesis: for example, self-reported theft is a function of family income. Observations aimed at finding out whether this statement accurately describes reality are part of what is typically called *hypothesis testing*. (See the box "Hints for Stating Hypotheses" for more on the process of formulating hypotheses.)

Deductive and Inductive Reasoning: A Case Illustration

As you probably recognized, the traditional model of science just described is a nice example of deductive reasoning: From a general theoretical understanding, the researcher derives (deduces) an expectation and finally a testable hypothesis. This picture is tidy, but in reality science uses inductive reasoning as well. Let's consider a real research example as a vehicle for comparing the deductive and inductive linkages between theory and research. Years ago, Charles Clock, Benjamin Ringer, and I (1967) set out to discover what caused differing levels of church involvement among U.S. Episcopalians. A number of theoretical or quasi-theoretical positions suggested possible answers. I'll focus on only one here: what we came to call the "Comfort Hypothesis."

In part, we took our lead from the Christian injunction to care for "the halt, the lame, and the blind" and those who are "weary and heavy laden." At the same time, ironically, we noted the Marxist assertion that religion is an "opiate for the masses." Given both, it made sense to expect the following, which was our hypothesis: "Parishioners whose life situations most deprive them of satisfaction and fulfillment in the secular society turn to the church for comfort and substitute rewards" (Clock et al., 1967:107-8).

Having framed this general hypothesis, we set about testing it. Were those deprived of satisfaction in the secular society in fact more religious than those who received more satisfaction from the secular society? To answer this, we needed to distinguish who was deprived. The questionnaire, which was constructed for the purpose of testing the Comfort Hypothesis, included items that seemed to offer indicators of whether parishioners were relatively deprived or gratified in secular society.

To start, we reasoned that men enjoy more status than women in our generally male-dominated society. Though hardly novel, this conclusion laid the groundwork for testing the Comfort Hypothesis. If we were correct in our hypothesis, women should appear more religious than men. Once the survey data had been collected and analyzed, our expectation about gender and religion was clearly confirmed. On three separate measures of religious involvement—ritual (such as church attendance), organizational (such as belonging to church organizations), and intellectual (such as reading church publications)—women were more religious than men. On our overall measure, women scored 50 percent higher than men.

In another test of the Comfort Hypothesis, we reasoned that in a youth-oriented society, old people would be more deprived of secular gratification than would the young. Once again, our expectation was confirmed by the data. The oldest parishioners were more religious than the middle-aged, who were more religious than young adults.

Social class—measured by education and income—afforded another test of the Comfort Hypothesis. Once again, the test was successful. Those with low social status were more involved in the church than those with high social status.

The hypothesis was even confirmed in a test that went against everyone's commonsense expectations. Despite church posters showing worshipful young families and bearing the slogan, "The Family That Prays Together Stays Together," the Comfort Hypothesis suggested that parishioners who were married and had children—the clear American ideal at that time—would enjoy secular gratification in that regard. As a consequence, they should be less religious than those who lacked one or both family components. Thus, we hypothesized that



Hints for Stating Hypotheses

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A hypothesis is the basic statement that is tested in research. Typically a hypothesis states a relationship between two variables. (Although it is possible to use more than two variables, you should stick to two for now.) Because a hypothesis makes a prediction about the relationship between the two variables, it must be testable so you can determine if the prediction is right or wrong when you examine the results obtained in your study. A hypothesis must be stated in an unambiguous manner to be clearly testable. What follows are suggestions for developing testable hypotheses.

Assume you have an interest in trying to predict some phenomenon such as "attitudes toward women's liberation," and that you can measure such attitudes on a continuum ranging from "opposed to women's liberation" to "neutral" to "supportive of women's liberation." Also assume that, lacking a theory, you'll rely on "hunches" to come up with variables that might be related to attitudes toward women's liberation.

In a sense, you can think of hypothesis construction as a case of filling in the blank: "_____ is related to attitudes toward women's liberation." Your job is to think of a variable that might plausibly be related to such atti-

parishioners who were both single and childless should be the most religious; those with either spouse or child should be somewhat less religious; and those married with children—representing the ideal pictured on all those posters—should be least religious of all. That's exactly what we found.

Finally, the Comfort Hypothesis would suggest that the various kinds of secular deprivation should

tudes, and then to word a hypothesis that states a relationship between the two variables (the one that fills in the "blank" and "attitudes toward women's liberation"). You need to do so in a precise manner so that you can determine clearly whether the hypothesis is supported or not when you examine the results (in this case, most likely the results of a survey).

The key is to word the hypothesis carefully so that the prediction it makes is quite clear to you as well as others. If you use age, note that saying "Age is related to attitudes toward women's liberation" does not say precisely how you think the two are related (in fact, the only way this hypothesis could be falsified is if you fail to find a statistically significant relationship of any type between age and attitudes toward woman's liberation). In this case a couple of steps are necessary. You have two options:

1. "Age is related to attitudes toward women's liberation, with younger adults being more supportive than older adults." (Or, you could state the opposite, if you believed older people are likely to be more supportive.)
2. "Age is negatively related to support for women's liberation." Note here that I specify "support" for women's liberation (SWL) and then predict a negative relationship—that is, as age goes up, I predict that SWL will go down.

be cumulative: Those with all the characteristics associated with deprivation should be the most religious; those with none should be the least. When we combined the four individual measures of deprivation into a composite measure, the theoretical expectation was exactly confirmed. Comparing the two extremes, we found that single, childless, old, lower-class female parishioners scored more than

In this hypothesis, note that both of the variables (age, the independent variable or likely "cause," and SWL, the dependent variable or likely "effect") range from low to high. This feature of the two variables is what allows you to use "negatively" (or "positively") to describe the relationship.

Notice what happens if you hypothesize a relationship between gender and SWL. Since gender is a nominal variable (as you'll learn in Chapter 5) it does not range from low to high—people are either male or female (the two attributes of the variable gender). Consequently, you must be careful in stating the hypothesis unambiguously:

1. "Gender is positively (or negatively) related to SWL" is not an adequate hypothesis, because it doesn't specify how you expect gender to be related to SWL—that is, whether you think men or women will be more supportive of women's liberation.
2. It is tempting to say something like "Women are positively related to SWL," but this really doesn't work because female is only an attribute, not a full variable (gender is the variable).
3. "Gender is related to SWL, with women being more supportive than men" would be my recommendation. Or, you could say, "with men being less supportive than women," which makes the identical prediction. (Of course, you could also make

three times as high on the measure of church involvement than did young, married, upper-class fathers. Thus was the Comfort Hypothesis confirmed.

I like this research example because it so clearly illustrates the logic of the deductive model. Beginning with general, theoretical expectations about the impact of social deprivation on church involvement, it was possible to derive concrete hypotheses

the opposite prediction, that men are more supportive than women are, if you wished.)

4. Equally legitimate would be "Women are more likely to support women's liberation than are men." (Note the need for the second "are," or you could be construed as hypothesizing that women support women's liberation more than they support men—not quite the same idea.)

The above examples hypothesized relationships between a "characteristic" (age or gender) and an "orientation" (attitudes toward women's liberation). Because the causal order is pretty clear (obviously age and gender come *before* attitudes, and are less alterable), we could state the hypotheses as I've done, and everyone would assume that we were stating causal hypotheses.

Finally, you may run across references to the **null hypothesis**, especially in statistics. Such a hypothesis predicts no relationship (technically, no statistically significant relationship) between the two variables, and it is always implicit in testing hypotheses. Basically, if you have hypothesized a positive (or negative) relationship, you are hoping that the results will allow you to reject the null hypothesis and verify your hypothesized relationship.

linking specific measurable variables, such as age and church attendance. The actual empirical data could then be analyzed to determine whether the deductive expectations were supported by empirical reality.

I sav this example shows how it was possible to do it that way, but, alas, I've been fibbing. To tell the truth, although we began with an interest in

discovering what caused variations in church involvement among Episcopalians, we didn't actually begin with a Comfort Hypothesis, or any other hypothesis for that matter. (In the interest of further honesty, Glock and Ringer initiated the study, and I joined it years after the data had been collected.) A questionnaire was designed to collect information that might shed some light on why some parishioners participated in the church more than others, but the construction of the questionnaire was not guided by any precise, deductive theory. Once the data were collected, the task of explaining differences in religiosity began with an analysis of variables that have a wide impact on people's lives, including gender, age, social class, and family status. Each of these four variables was found to relate strongly to church involvement, in the ways already described. Indeed, they had a cumulative effect, also already described. Rather than being good news, however, this presented a dilemma.

Glock recalls discussing his findings with colleagues over lunch at the Columbia faculty club. Once he had displayed the tables illustrating the impact of each individual variable as well as their powerful composite effect, a colleague asked, "What does it all mean, Charlie?" Glock was at a loss. Why *were* those variables so strongly related to church involvement?

That question launched a process of reasoning about what the several variables had in common, aside from their impact on religiosity. Eventually we saw that each of the four variables also reflected *differential status in the secular society*. He then had the thought that perhaps the issue of comfort was involved. Thus, the inductive process had moved from concrete observations to a general theoretical explanation.

A Graphic Contrast

As the preceding case illustration shows, theory and research can usefully be done both inductively and deductively. Figure 2-3 shows a graphic comparison of the two approaches applied to an inquiry into study habits and performance on exams. In both cases, we are interested in the relationship be-

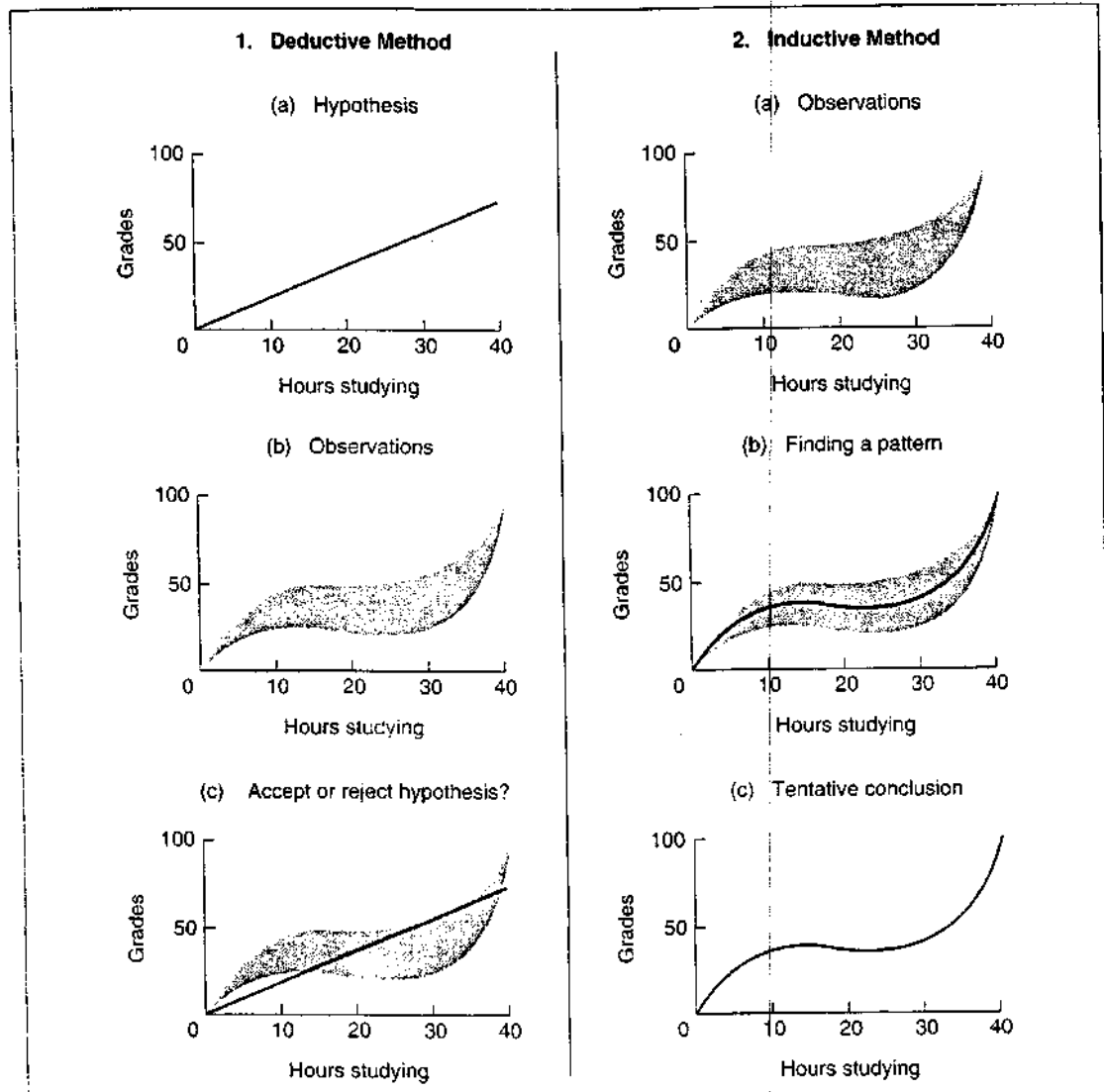
tween the number of hours spent studying for an exam and the grade earned on that exam. Using the deductive method, we would begin by examining the matter logically. Doing well on an exam reflects a student's ability to recall and manipulate information. Both of these abilities should be increased by exposure to the information before the exam. In this fashion, we would arrive at a hypothesis suggesting a positive relationship between the number of hours spent studying and the grade earned on the exam. We say positive because we expect grades to increase as the hours of studying increase. If increased hours produced decreased grades, that would be called a negative, or inverse, relationship. The hypothesis is represented by the line in part 1(a) of Figure 2-3.

Our next step would be to make observations relevant to testing our hypothesis. The shaded area in part 1(b) of the figure represents perhaps hundreds of observations of different students, noting how many hours they studied and what grades they received. Finally, in part 1(c), we compare the hypothesis and the observations. Because observations in the real world seldom if ever match our expectations perfectly, we must decide whether the match is close enough to consider the hypothesis confirmed. Put differently, can we conclude that the hypothesis describes the general pattern that exists, granting some variations in real life? Sometimes, answering this question necessitates methods of statistical analysis, which will be discussed in Part 4.

Now suppose we used the inductive method to address the same research question. In this case, we would begin with a set of observations, as in part 2(a) of Figure 2-3. Curious about the relationship between hours spent studying and grades earned, we might simply arrange to collect relevant data. Then we'd look for a pattern that best represented or summarized our observations. In part 2(b) of the figure, the pattern is shown as a curved line running through the center of our observations.

The pattern found among the points in this case suggests that with 1 to 15 hours of studying, each additional hour generally produces a higher grade on the exam. With 15 to about 25 hours,

FIGURE 2-3
Deductive and Inductive Methods



however, more study seems to slightly lower the grade. Studying more than 25 hours, on the other hand, results in a return to the initial pattern: More hours produce higher grades. Using the inductive method, then, we end up with a tentative conclusion about the pattern of the relationship between the two variables. The conclusion is tentative be-

cause the observations we have made cannot be taken as a test of the pattern—those observations are the source of the pattern we've created.

As I discussed in Chapter 1, in actual practice, theory and research interact through a never ending alternation of deduction and induction. A good example is the classic work of Emile Durkheim on

suicide ([1897] 1951). When Durkheim pored over table after table of official statistics on suicide rates in different areas, he was struck by the fact that Protestant countries consistently had higher suicide rates than did Catholic ones. Why should that be the case? His initial observations led him to create inductively a theory of religion, social integration, anomie, and suicide. His theoretical explanations in turn led deductively to further hypotheses and further observations.

In summary, the scientific norm of logical reasoning provides a two-way bridge between theory and research. Scientific inquiry in practice typically involves alternating between deduction and induction. Both methods involve an interplay of logic and observation. And both are routes to the construction of social theories.

Although both inductive and deductive methods are valid in scientific inquiry, individuals may feel more comfortable with one approach than the other. Consider this exchange in Sir Arthur Conan Doyle's story "A Scandal in Bohemia," as Sherlock Holmes answers Dr. Watson's inquiry (Doyle [1891] 1892:13):

"What do you imagine that it means?"

"I have no data yet. It is a capital mistake to theorise before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts."

Some social scientists would more or less agree with this inductive position, while others would take a more deductive stance. Most, however, concede the legitimacy of both approaches.

With this understanding of the deductive and inductive links between theory and research in hand, let's now delve a little more deeply into how theories are constructed using these two different approaches.

Deductive Theory Construction

To see what is involved in deductive theory construction and hypothesis testing, let's imagine that you are going to construct a deductive theory. How would you go about it?

Getting Stoned

The first step in deductive theory construction is to pick a topic that interests you. The topic can be very broad, such as "What is the structure of society?" or it can be narrower, as in "Why do people support or oppose the idea of a woman's right to an abortion?" Whatever the topic, it should be something you're interested in understanding and explaining.

Once you've picked your topic, the next step is to undertake an inventory of what is already known or thought about it. In part, this means writing down your own observations and ideas. Beyond that, it means learning what other scholars have said about it. You can talk to other people, and you'll want to read the scholarly literature on the topic. Appendix A provides guidelines for using the library—you'll likely spend a lot of time there.

Your preliminary research will probably uncover consistent patterns discovered by prior scholars. For example, religious and political variables will stand out as important determinants of attitudes about abortion. Findings such as these will be very useful to you in creating your own theory.

In this process, don't overlook the value of introspection. Whenever we can look at our own personal processes—including reactions, fears, and prejudices—we may gain important insights into human behavior in general. I don't mean to say that everyone thinks like you or me, but introspection can provide a useful source of insights that can inform our inquiries.

Constructing Your Theory

Now that you've reviewed previous work on the topic, you're ready to begin constructing your theory. Although theory construction is not a lockstep affair, the process generally involves something like the following steps.

1. Specify the topic.
2. Specify the range of phenomena your theory addresses. Will your theory apply to all of human social life, will it apply only to U.S. citizens, only to young people, or what?

3. Identify and specify your major concepts and variables.
4. Find out what is known (propositions) about the relationships among those variables.
5. Reason logically from those propositions to the specific topic you are examining.

We've already discussed items (1) through (3), so let's focus now on (4) and (5). As you identify the relevant concepts and discover what has already been learned about them, you can begin to create a propositional structure that explains the topic under study.

Let's look now at an example of how these building blocks fit together in deductive theory construction and empirical research.

An Example of Deductive Theory: Distributive Justice

A topic of central interest to scholars is the concept of distributive justice—people's perceptions of whether they are being treated fairly by life, whether they are getting "their share." Guillermina Jasso describes the theory of distributive justice more formally, as follows:

The theory provides a mathematical description of the process whereby individuals, reflecting on their holdings of the goods they value (such as beauty, intelligence, or wealth), compare themselves to others, experiencing a fundamental instantaneous magnitude of the justice evaluation (J), which captures their sense of being fairly or unfairly treated in the distributions of natural and social goods.

(Jasso 1988:11)

Notice that Jasso has assigned a symbolic representation for her key variable: J will stand for distributive justice. She does this to support her intention of stating her theory in mathematical formulas. Though theories are often expressed mathematically, we'll not delve too deeply into that practice here.

Jasso indicates that there are three kinds of postulates in her theory. "The first makes explicit the

fundamental axiom which represents the substantive point of departure for the theory." She elaborates as follows: "the theory begins with the received Axiom of Comparison, which formalizes the long-held view that a wide class of phenomena, including happiness, self-esteem, and the sense of distributive justice, may be understood as the product of a comparison process" (Jasso 1988:11).

Thus, your sense of whether you are receiving a "fair" share of the good things of life comes from comparing yourself with others. If this seems obvious to you, that's not a shortcoming of the axiom. Remember, axioms are the taken-for-granted beginnings of theory.

Jasso continues to do the groundwork for her theory. First, she indicates that our sense of distributive justice is a function of "Actual Holding (A)" and "Comparison Holdings (C)" of some good. Let's consider money, for example. My sense of justice in this regard is a function of how much I actually have compared with how much others have. By specifying the two components of the comparison, Jasso can use them as variables in her theory.

Next, Jasso offers a "measurement rule" that further specifies how the two variables, A and C, will be conceptualized. This step is needed because some of the goods to be examined are concrete and commonly measured (Such as money), whereas others are less tangible (such as respect). The former kind, she says, will be measured conventionally, whereas the latter will be measured "by the individual's relative rank... within a specially selected comparison group." The theory will provide a formula for making that measurement (Jasso 1988:13).

Jasso continues in this fashion to introduce additional elements, weaving them into mathematical formulas to be used in deriving predictions about the workings of distributive justice in a variety of social settings. Here is just a sampling of where her theorizing takes her (1988:14-15).

- Other things [being] the same, a person will prefer to steal from a fellow group member rather than from an outsider.
- The preference to steal from a fellow group member is more pronounced in poor groups than in rich groups.

- In the case of theft, informants arise only in cross-group theft, in which case they are members of the thief's group.
- Persons who arrive a week late at summer camp or for freshman year of college are more likely to become friends of persons who play games of chance than of persons who play games of skill.
- A society becomes more vulnerable to deficit spending as its wealth increases.
- Societies in which population growth is welcomed must be societies in which the set of valued goods includes at least one quantity-good, such as wealth.

Jasso's theory leads to many other propositions, but this sampling should provide a good sense of where deductive theorizing can take you. To get a feeling for how she reasons her way to these propositions, let's look briefly at the logic involved in two of the propositions that relate to theft within and outside one's group.

- Other things [being] the same, a person will prefer to steal from a fellow group member rather than from an outsider.

Beginning with the assumption that thieves want to maximize their relative wealth, ask yourself whether that goal would be best served by stealing from those you compare yourself with or from outsiders. In each case, stealing will increase your Actual Holdings, but what about your Comparison Holdings?

A moment's thought should suggest that stealing from people in your comparison group will lower their holdings, further increasing your relative wealth. To simplify, imagine there are only two people in your comparison group: you and me. Suppose we each have \$100. If you steal \$50 from someone outside our group, you will have increased your relative wealth by 50 percent compared with me: \$150 versus \$100. But if you steal \$50 from me, you will have increased your relative wealth 200 percent: \$150 to my \$50. Your goal is best served by stealing from within the comparison group.

- In the case of theft, informants arise only in cross-group theft, in which case they are members of the thief's group.

Can you see why it would make sense for informants (1) to arise only in the case of cross-group theft and (2) to come from the thief's comparison group? This proposition again depends on the fundamental assumption that everyone wants to increase his or her relative standing. Suppose you and I are in the same comparison group, but this time the group contains additional people. If you steal from someone else within our comparison group, my relative standing in the group does not change. Although your wealth has increased, the average wealth in the group remains the same (because someone else's wealth has decreased by the same amount). So my relative standing remains the same. I have no incentive to inform on you.

If you steal from someone outside our comparison group, however, your nefarious income increases the total wealth in our group. Now my own wealth relative to that total is diminished. Since my relative wealth has suffered, I am more likely to inform on you in order to bring an end to your stealing. Hence, informants arise only in cross-group theft.

This last deduction also begins to explain why these informants come from the thief's own comparison group. We've just seen how your theft decreased my relative standing. How about members of the other group (other than the individual you stole from)? Each of them actually profits from the theft, since you have reduced the total with which they compare themselves. Hence, they have no reason to inform on you. Thus, the theory of distributive justice predicts that informants arise from the thief's own comparison group.

This brief peek into Jasso's derivations should give you some sense of the enterprise of deductive theory. Of course, none of the given predictions are guaranteed by the theory. The role of research is to test each of them to determine whether what makes sense (logic) actually occurs in practice (observation).

Inductive Theory Construction

As we have seen, quite often social scientists begin constructing a theory through the inductive method by first observing aspects of social life and then seeking to discover patterns that may point to relatively universal principles. Barney Glaser and Anselm Strauss (1967) coined the *term grounded theory* in reference to this method.

Field research—the direct observation of events in progress—is frequently used to develop theories through observation. A long and rich anthropological tradition has used this method to good advantage.

Among modern social scientists, no one has been more adept at seeing the patterns of human behavior through observation than Erving Goffman:

A game such as chess generates a habitable universe for those who can follow it, a plane of being, a cast of characters with a seemingly unlimited number of different situations and acts through which to realize their natures and destinies. Yet much of this is reducible to a small set of interdependent rules and practices. If the meaningfulness of everyday activity is similarly dependent on a closed, finite set of rules, then explication of them would give one a powerful means of analyzing social life.

(1974:5)

In a variety of research efforts, Goffman uncovered the rules of such diverse behaviors as living in a mental institution (1961) and managing the "spoiled identity" of being disfigured (1963). In each case, Goffman observed the phenomenon in depth and teased out the rules governing behavior. Goffman's research provides an excellent example of qualitative field research as a source of grounded theory.

Our earlier discussion of the Comfort Hypothesis and church involvement shows that qualitative field research is not the only method of observation appropriate to the development of inductive theory. Here's another detailed example to illustrate further the construction of inductive theory using quantitative methods.

An Example of inductive Theory: Why Do People Smoke Marijuana?

During the 1960s and 1970s, marijuana use on U.S. college campuses was a subject of considerable discussion in the popular press. Some people were troubled by marijuana's popularity; others welcomed it. What interests us here is why some students smoked marijuana and others didn't. A survey of students at the University of Hawaii (Takeuchi 1974) provided the data to answer that question.

At the time of the study, countless explanations were being offered for drug use. People who opposed drug use, for example, often suggested that marijuana smokers were academic failures trying to avoid the rigors of college life. Those in favor of marijuana, on the other hand, often spoke of the search for new values: Marijuana smokers, they said, were people who had seen through the hypocrisy of middle-class values.

David Takeuchi's (1974) analysis of the data gathered from University of Hawaii students, however, did not support any of the explanations being offered. Those who reported smoking marijuana had essentially the same academic records as those who didn't smoke it, and both groups were equally involved in traditional "school spirit" activities. Both groups seemed to feel equally well integrated into campus life.

There were other differences between the groups, however:

1. Women were less likely than men to smoke marijuana.
2. Asian students (a large proportion of the student body) were less likely to smoke marijuana than were non-Asians.
3. Students living at home were less likely to smoke marijuana than were those living in apartments.

As in the case of religiosity, the three variables independently affected the likelihood of a student's smoking marijuana. About 10 percent of the Asian women living at home had smoked marijuana, in contrast to about 80 percent of the non-Asian men

living in apartments. And, as in the religiosity study, the researchers discovered a powerful pattern of drug use before they had an explanation for that pattern.

In this instance, the explanation took a peculiar turn. Instead of explaining why some students smoked marijuana, the researchers explained why some didn't. Assuming that all students had some motivation for trying drugs, the researchers suggested that students differed in the degree of "social constraints" preventing them from following through on that motivation.

U.S. society is, on the whole, more permissive with men than with women when it comes to deviant behavior. Consider, for example, a group of men getting drunk and boisterous. We tend to dismiss such behavior with references to "camaraderie" and "having a good time," whereas a group of women behaving similarly would probably be regarded with great disapproval. We have an idiom, "Boys will be boys," but no comparable idiom for girls. The researchers reasoned, therefore, that women would have more to lose by smoking marijuana than men would. In other words, being female provided a constraint against smoking marijuana.

Students living at home had obvious constraints against smoking marijuana, compared with students living on their own. Quite aside from differences in opportunity, those living at home were seen as being more dependent on their parents—hence more vulnerable to additional punishment for breaking the law.

Finally, the Asian subculture in Hawaii has traditionally placed a higher premium on obedience to the law than have other subcultures, so Asian students would have more to lose if they were caught violating the law by smoking marijuana.

Overall, then, a "social constraints" theory was offered as the explanation for observed differences in the likelihood of smoking marijuana. The more constraints a student had, the less likely he or she would be to smoke marijuana. It bears repeating that the researchers had no thoughts about such a theory when their research began. The theory came from an examination of the data.

The Links Between Theory and Research

Throughout this chapter, we have seen various aspects of the links between theory and research in social scientific inquiry. In the deductive model research is used to test theories. In the inductive model theories are developed from the analysis of research data. This final section looks more closely into the ways theory and research are related in actual social scientific inquiry.

Whereas we have discussed two idealized logical models for linking theory and research, social scientific inquiries have developed a great many variations on these themes. Sometimes theoretical issues are introduced merely as a background for empirical analyses. Other studies cite selected empirical data to bolster theoretical arguments. In neither case is there really an interaction between theory and research for the purpose of developing new explanations. Some studies make no use of theory at all aiming specifically, for example, at an ethnographic description of a particular social situation, such as an anthropological account of food and dress in a particular society.

As you read social research reports, however, you will very often find that the authors are conscious of the implications of their research for social theories and vice versa. Here are a few examples to illustrate this point.

When W. Lawrence Neuman (1998) set out to examine the problem of monopolies (the "trust problem") in U.S. history, he saw the relevance of theories about how social movements transform society ("state transformation"). He became convinced, however, that existing theories were inadequate for the task before him:

State transformation theory links social movements to state policy formation processes by focussing on the role of cultural meaning in organized political struggles. Despite a resemblance among concepts and concerns, constructionist ideas found in the social problems, social movements, and symbolic politics literatures have not been incorporated into the theory. In this paper, I draw on these three

literatures to enhance state transformation theory.

(Neuman 1998:315)

Having thus modified state transformation theory, Neuman had a theoretical tool that could guide his inquiry and analysis into the political maneuverings related to monopolies beginning in the 1880s and continuing until World War I. Thus, theory served as a resource for research and at the same time was modified by it.

In a somewhat similar study, Alemseghed Kebede and J. David Knottnerus (1998) set out to investigate the rise of Rastafarianism in the Caribbean. However, they felt that recent theories on social movements had become too positivistic in focusing on the mobilization of resources. Resource mobilization theory, they felt, downplays

the motivation, perceptions, and behavior of movement participants. .. and concentrates instead on the whys and hows of mobilization. Typically theoretical and research problems include: How do emerging movement organizations seek to mobilize and routinize the flow of resources and how does the existing political apparatus affect the organization of resources?

(1998:500)

To study Rastafarianism more appropriately, the researchers felt the need to include several concepts from contemporary social psychology. In particular, they sought models to use in dealing with problems of meaning and collective thought.

Frederika E. Schmitt and Patricia Yancey Martin (1999) were particularly interested in discovering what made for successful rape crisis centers and how they dealt with the organizational and political environments within which they operated. The researchers found theoretical constructs appropriate to their inquiry:

This case study of unobtrusive mobilizing by Southern California Rape Crisis Center uses archival, observational, and interview data to explore how a feminist organization worked to change police, schools, prosecutor, and some

state and national organizations from 1974 to 1994. Mansbridge's concept of street theory and Katzenstein's concepts of unobtrusive mobilization and discursive politics guide the analysis.

(1999:364)

In summary, there is no simple recipe for conducting social science research. It is far more open-ended than the traditional view of science suggests. Ultimately, science depends on two categories of activity: logic and observation. As you'll see throughout this book, they can be fit together in many patterns.

MAIN POINTS

- Social scientists use a variety of paradigms to organize how they understand and inquire into social life.
- A distinction between types of theories that cuts across various paradigms is macrotheory (theories about large-scale features of society) versus microtheory (theories about smaller units or features of society).
- The positivistic paradigm assumes that we can scientifically discover the rules governing social life.
- The Social Darwinist paradigm saw a progressive evolution in social life.
- The conflict paradigm focuses on the attempt of persons and groups to dominate others and to avoid being dominated.
- The symbolic interactionist paradigm examines how shared meanings and social patterns are developed in the course of social interactions.
- Ethnomethodology focuses on the ways people make sense out of social life in the process of living it, as though each were a researcher engaged in an inquiry.
- The structural functionalist (or social systems) paradigm seeks to discover what functions the many elements of society perform for the whole system.

- Feminist paradigms, in addition to drawing attention to the oppression of women in most societies, highlight how previous images of social reality have often come from and reinforced the experiences of men.
- Some contemporary theorists and researchers have challenged the long-standing belief in an objective reality that abides by rational rules. They point out that it is possible to agree on an "intersubjective" reality.
- The elements of social theory include observations, facts, and laws (which relate to the reality being observed) and concepts, variables, axioms or postulates, propositions, and hypotheses (which are logical building blocks of the theory itself).
- In the traditional image of science, scientists proceed from theory to operationalization to observation. But this image is not an accurate picture of how scientific research is actually done.
- Social scientific theory and research are linked through the two logical methods of deduction (the derivation of expectations and hypotheses from theories) and induction (the development of generalizations from specific observations).
- In practice, science is a process involving an alternation of deduction and induction.
- Guillermina Jasso's theory of distributive justice illustrates how formal reasoning can lead to a variety of theoretical expectations that can be tested by observation.
- David Takeuchi's study of factors influencing marijuana smoking among University of Hawaii students illustrates how collecting observations can lead to generalizations and an explanatory theory.
- In practice, there are many possible links between theory and research and many ways of going about social inquiry.

KEY TERMS

The following terms are defined in context in the chapter and can also be found in the Glossary at the back of the book.

paradigms	operationalization
macrotheory	operational definition
microtheory	null hypothesis
hypothesis	

REVIEW QUESTIONS AND EXERCISES

1. Consider the possible relationship between education and prejudice mentioned in Chapter 1. Describe how you might examine that relationship through (a) deductive and (b) inductive methods.
2. Review the relationships between theory and research discussed in this chapter. Select a research article from an academic journal and classify the relationship between theory and research you find there.
3. Using one of the many search engines (such as Excite, HotBot, Infoseek, Lycos, Netscape, WebCrawler, or Yahoo), find information on the Web concerning at least three of the following paradigms. Give the Web locations and report on the theorists discussed in connection with the discussions you found.

Conflict Theory	Functionalism
Exchange Theory	Interactionism
Ethnomethodology	Positivism
Feminism	Postmodernism

ADDITIONAL READINGS

Chafetz, Janet. 1978. *A Primer on the Construction and Testing of Theories in Sociology*. Itasca, IL: Peacock. One of the few books on theory construction written expressly for undergraduates. Chafetz provides a rudimentary understanding of the

- philosophy of science through simple language and everyday examples. She describes the nature of explanation, the role of assumptions and concepts, and the building and testing of theories.
- Denzin, Norman K., and Yvonna S. Lincoln. 1994. *Handbook of Qualitative Research*. Newbury Park, CA: Sage. Various authors discuss the process of qualitative research from the perspective of various paradigms, showing how they influence the nature of inquiry. The editors also critique positivism from a postmodern perspective.
- DeVault, Marjorie L. 1999. *Liberating Method: Feminism and Social Research*. Philadelphia: Temple University Press. This book elaborates on some of the methods associated with the feminist paradigm and is committed to both rigorous inquiry and the use of social research to combat oppression.
- Kuhn, Thomas. 1970. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press. An exciting and innovative recasting of the nature of scientific development. Kuhn disputes the notion of gradual change and modification in science, arguing instead that established paradigms tend to persist until the weight of contradictory evidence brings their rejection and replacement by new paradigms. This short book is at once stimulating and informative.
- Lofland, John, and Lyn H. Lofland. 1995. *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Belmont, CA: Wadsworth. An excellent text on how to conduct qualitative inquiry with an eye toward discovering the rules of social life. Includes a critique of postmodernism.
- McGrane, Bernard. 1994. *The Un-TV and 10 mph Car: Experiments in Personal Freedom and Everyday Life*. Fort Bragg, CA: The Small Press. Some excellent and imaginative examples of an ethnomethodological approach to society and to the craft of sociology. The book is useful for both students and faculty.
- Reinharz, Shulamit. 1992. *Feminist Methods in Social Research*. New York: Oxford University Press. This book explores several social research techniques (such as interviewing, experiments, and content analysis) from a feminist perspective.
- Ritzer, George. 1988. *Sociological Theory*. New York: Knopf. This is an excellent overview of the major theoretical traditions in sociology.
- Turner, Jonathan H., ed. 1989. *Theory Building in Sociology: Assessing Theoretical Cumulation*. Newbury Park, CA: Sage. This collection of essays on sociological theory construction focuses specifically on the question posed by Turner's introductory chapter, "Can Sociology Be a Cumulative Science?"
- Turner, Stephen Park, and Jonathan H. Turner. 1990. *The Impossible Science: An Institutional Analysis of American Sociology*. Newbury Park, CA: Sage. Two authors bring two very different points of view to the history of U.S. sociologists' attempt to establish a science of society.

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<http://www.sociology.wadsworth.com>