

the discomfort of this cognitive dissonance, many of the \$1 subjects later remembered the task as fairly interesting after all.

[10] Finding Good Jobs FALSE. While some people secure high-paid employment through formal channels, even fewer secure it through close friends and relatives.

So how do qualified people find out about good jobs? Mark Granovetter (1973, 1982, 1983) discovered it was through word of mouth from distant acquaintances. He called the phenomenon “the strength of weak ties.” With this finding, Granovetter helped to open an exciting new area of sociology called *network theory*.

The basic idea is that information flows through loose networks of people who do not know each other well. Maybe they were classmates in high school or college, but not close friends. Relatives and friends are of limited help, Granovetter found, because they know about the same information as you do. “Weak ties,” however, indicate the two people are in different social locations. Therefore, they have access to different flows of information. So, in chance meetings, your old acquaintances can tell you about new openings at their firms that require the skills you possess.

This network analysis is an intriguing example of social structure in action—a topic we will discuss throughout the book. It has direct implications for understanding how society filters opportunities by social class, race, and sex. These networks with critical employment information were in the past largely upper-middle class, white, and male in America.

This network perspective offers one reason African Americans who attend interracial schools as children get better jobs than comparable African Americans who attend all-black schools (Braddock, 1989; Braddock, Crain & McPartland, 1984). Integrated education enables them to break through the white monopoly and gain access to critical information about jobs and other opportunities. This explanation does not require that the blacks actually learned more in the interracial schools, or even had particularly close white friends.

In sum, false is the correct response for all ten items of the quiz. If you correctly thought most of the items were false, then three possible conclusions arise. Perhaps you have already taken social science courses. Maybe you have a genuine talent for social science thinking. You will make a prudent consumer of social science findings, and you might even consider specializing in one of these fields. Possibly you shrewdly detected that the context of this opening chapter was to show that social science findings are not as obvious as many think, so you responded accordingly. Such sensitivity to social context suggests you have a talent for thinking like a social scientist.

If, however, you thought many of these items were true, then you share this with most people. You can take heart that I purposely selected tricky items. Not all social science results are so surprising. Yet “conventional wisdom,” a less polite term for “common sense,” often leads one astray in understanding the complexities of social life. For the fact remains: social life is complex.

1.3 THE COMPLEXITIES OF STUDYING SOCIAL LIFE

There are many reasons social life is so complex and difficult to study. Here we shall describe five of the most important reasons.

1.3.1 Multiple Causation

Few events in the social world are caused by only one factor. Multiple factors shape most phenomena, especially the important ones. Popular analyses often search for the *one* key factor to explain an entire social phenomenon. For example, research in criminology (the study of crime) shows that many factors contribute to America’s high rates of crime today. Yet many in political life act as if it were caused by only one simple factor—the so-called “breakdown in family values,” or not enough fear of punishment by criminals, or whatever. Social scientists have learned not to expect the social world to be so simply constructed. An important part of thinking like a social scientist is to expect and search for multiple causal agents.

Making it more complicated, the many causal, independent variables used to predict a phenomenon (the *dependent variable*) are often tightly interrelated themselves. The difficult problem for the social analyst in interpreting such data is how to extract the causal relationships from a mass of possibilities. While this exercise is usually painstaking and time-consuming, it also can be great fun. It is not unlike Sherlock Holmes solving a baffling mystery, so it is my favorite task as a social scientist.

The difference between this situation and that of much research in chemistry and physics is striking. Social science, even in laboratory experiments, must work in open systems—situations in which the key variables under test are not the only ones operating. Physical science can often approximate closed systems for its research. Such closed systems isolate the few variables of interest from contaminating external variables.

1.3.2 Multilevel

As noted in the presidential vote example, significant aspects of social life occur on different levels of analysis. Popular analyses often stay at only the best known and most immediate level of the individual. Yet this is not enough to capture the complexity of social life. All the social sciences have found it necessary to work at higher levels as well.

Hence, macroeconomics considers the economy from the broadest structural perspective. Political science views the entire political system, not just individual voters. Cultural anthropology treats whole cultures and societies, not just the individuals within them. Demography studies whole populations. Sociology looks at whole societies, as well as institutions within societies. Social psychology is the most individually oriented of all. Yet it also specializes in groups of people, particularly in face-to-face situations where people interact.

Those new to social science usually find the broader structural levels of analyses the most difficult to understand at first. We are not as accustomed to thinking of social structures as we are of individual people. The basic idea, however, is straightforward. Social science uses the term social structure to represent two basic aspects of organized social life. First, social arrangements are *patterned*, not random. Second, these patterns are *relatively persistent* over time. Social structure, therefore, translates to *relatively persistent social patterns*.

Institutions, such as colleges, are one type of social structure. To see how social structure works, consider student life at your college. The social world is always changing, so college life this year is not exactly the same as it was last year. Yet events this year on campus are more similar to last year's events than life on other college campuses. In other words, campus life at your college is *patterned* from year to year, and it is *relatively persistent* even though social change is always occurring. In Chapters 6 and 7, we shall return to this basic concept of social structure that underlies much of what is distinctive about social scientific thinking.

1.3.3 Relational

Social life does not merely consist of separate entities at different levels of analysis. These entities relate to each other in complex but patterned ways. So the many aspects of student life on your campus—from dormitory routines to academic expectations—are related to each other. It is these relational links between various aspects of the social world that make up social structure.

There is a direct analogy here with the human body. The human organism does not consist just of its separate parts—the ears, eyes, nose, bones, etc. The essence of the organism is how these various parts interact with each other to form a patterned, organized system. So it is with social systems. This systemic pattern of relational links between parts is why “the whole is more than the sum of its parts.” This truism holds throughout social science. We will see the concept of system used at all levels of analysis—from personality system to political system.

Chapter 7 will focus on this feature of social life. There we will learn how social systems, like the human body, are open systems. They are not self-contained; rather they depend on an exchange with the environment. Just as the body ingests food and excretes, so does a factory take on raw materials and produce products. This open quality of social systems means that we also must study the relations *between* systems. Thus, open systems are more complex to study than closed systems because the links *between* open systems become important.

1.3.4 Reactivity

Human beings present a constantly moving target. This fact is a fourth reason underlying the complexity of social life. This complication, too, differs

from physical science. Many of the major variables of physics and chemistry are inert and change over time only because of the causal variables under test.

Reactivity refers to human beings reacting to each other, to being interviewed, to hearing an economic forecast or a political prediction. Human beings are constantly changing because they are reacting to their environment. In reacting, they affect what caused them to react in the first place. So the subject matter of social science is always in perpetual flux, often changing as a direct function of social science research itself. For example, people interviewed by political surveys become, as a result of the interview, more likely to vote on election day.

Consider the effects of economic forecasts. These widely-broadcast predictions lead many people to change their economic plans. A forecast of bad times ahead, for instance, might cause many investors to sell their stocks. If enough people do this, their actions can affect the accuracy of the forecast itself. If the stock sales drive down share prices, they may help confirm the forecast. Thus, a *self-fulfilling prophecy* occurs. The economic prediction itself helped to cause the prediction to come true.

In a similar vein, some worry the mass media practice of announcing survey predictions during election campaigns may affect voting results. Television coverage of American presidential elections makes this problem more acute. The networks announce early survey results and voting returns from the East long before voting has ended in the West. People may become less likely to vote when they see their favorite candidates far behind. Or, perhaps, people may be less likely to vote when the media predict their favorites to win and their single vote seems less necessary.

Human reactivity often operates through expectancies (Rosenthal & Jacobson, 1968). If elementary school teachers think Linda is bright, they will expect her to do well in her classes. This expectation can cause the teachers to behave differently toward Linda. They wait longer than usual for Linda to respond to questions because they are certain she will know the correct answers. These behaviors are so subtle that teachers themselves are usually not aware of them, yet they can create a self-fulfilling prophecy. The teachers' expectations that Linda will perform well shape a situation in which Linda does indeed perform well! Unfortunately, teachers' expectancies also can work in the opposite direction to the disadvantage of those students thought to be less intelligent.

Laboratory experiments in social psychology show how powerful such expectancies can be in interpersonal situations. One study had two students interact who had not met before (Snyder & Swann, 1978). Before the interaction, the experimenter led one of the subjects to expect that the other student would behave in a hostile manner. This expectation caused the subject to act in a way that provoked hostile behavior from the other subject. Thus, the misinformed subject's expectations actually shaped the other subject's behavior into a self-fulfilling prophecy. Many similar studies show this intense reactivity of human beings to subtle, non-verbal cues.

Reactivity is so powerful that social research must take care not to allow it to distort results. Toward this end, social scientists use an array of "nonre-active" measures ranging from covert observations to archival data (Webb, Campbell, Schwartz, Sechrest & Grove, 1981).

13.5 Measurement Error

Measurement refers to the assignment of numbers to objects or events so that we can study them systematically. Such number assignment must be done according to established rules if it is to make sense (Stevens, 1968:850). An I.Q. test score of 110 makes no sense unless we know how this score was obtained, that 100 is the average score, etc. Any distortion in this score in how it reflects what it is supposed to be measuring is measurement error.

By the nature of its phenomena, social science must contend with large amounts of measurement error in its research compared to that of the physical sciences. The accuracy and calibration of measures in chemistry and physics are often quite fine compared to the size of the effects studied. For the reasons we have just reviewed, it is difficult to measure with such precision the complexities of social life.

There are two types of measurement error—variable error and constant error. Variable error is random error. Research can reduce it by having more observations or subjects. More serious is constant error—non-random error that deviates in one direction from the "true" data. Simply increasing the number of observations or subjects will not correct constant errors. Such expansion will only magnify them.

A measure's reliability refers to the problem of variable error. A highly reliable measure has less variable error. There are two types. Test-retest reliability involves the stability of measures recorded at different times. If you take an achievement test today, will you get a similar score when you take the same or equivalent test a few weeks later? Internal consistency reliability gauges the cohesion of a measure. Do the various items of the achievement test correlate with each other?

A measure's validity refers to constant error. Here the focus is on how well the measure captures the essence of the abstract construct. Are the various tests of intellectual skills *valid* measures of the abstract construct of intelligence? If so, constant error is relatively low.

There are several ways to estimate validity. Face validity is just a matter of judgment: Does the measure look (on the *face* of it) as if it measures the construct? Do the questions asked in the I.Q. test look to you like questions that measure intelligence? Convergent validity goes a step further. It asks if the measure relates positively with other measures of the same construct. Does I.Q. test A correlate closely with I.Q. test B? Divergent validity is exactly the opposite. It checks to see if the measure *fails* to relate with measures of *other* constructs. Does the I.Q. test *not* relate with measures of personality that are thought to be unrelated to intelligence? Finally, criterion validity asks: Does the measure relate with other variables as theory holds the construct should? Do the I.Q. test scores predict grades in school?

Business sections of daily newspapers routinely recognize measurement error. When the U.S. government announces its economic indices each month, they often carry with them a correction for data advanced in earlier months. Sometimes these monthly corrections are large enough to change conclusions about the trends of the current economy. These changes may alter "housing starts"—the number of new houses on which construction began each month—by several hundred thousand units. They may alter unemployment data by hundreds of thousands of workers.

These changes are important. Major decisions of economic policy as well as many individual investment decisions rely on them. Government agencies carefully collect and analyze these data precisely because they are so important. However, by the nature of the measurement of social variables, some error is inherent in them.

It is informative to note the difficulties of a non-social science that also experiences large degrees of error in its predictions. The study and prediction of earthquakes has made marked advances in recent years, but it shares error problems with social science. So earthquake specialists grapple with difficulties that resemble those of social science. Since people are deeply concerned with and react to these results and predictions, this field's work also gets entangled with controversy.

1.4 SO WHO DIDN'T KNOW THAT?

The study of social life, then, is complex for many reasons. The task of social science is anything but simple. Yet this fact is neither commonly understood nor accepted. Why? We have already discussed one reason—we all can fancy ourselves as a social scientist though we cannot similarly imagine ourselves to be an astrophysicist. We think we understand the social world because we negotiate our way through it each day.

Another reason is that social science findings often appear obvious—*after the fact*. The findings seem that way because every culture develops sayings (aphorisms) to prepare us for common social eventualities. These aphorisms in time gain the ring of true wisdom. The problem is that one can use them after the fact to "explain" whatever happens. So, "absence makes the heart grow fonder," but "out of sight, out of mind." "There is no place like home," but "the grass is always greener on the other side of the fence." "Think before you jump," but "he who hesitates is lost." Thus, no matter what direction social scientific findings take, a cultural aphorism can *later* "explain" them.

Social science teachers learn the hard way how obvious many research findings appear to many students. Most of us have had the experience of giving a spirited lecture on our favorite research findings only to hear the dreaded refrain: "So who didn't know that? Do you mean to tell me that it took a research grant of thousands of dollars to find that out? You could have just asked my mother!"

Samuel Stouffer, a distinguished sociologist who taught at Harvard University, would fume at this response. He decided to do something about it. He devised a true-false test that was the inspiration for the one you have just taken. In fact, the first two items from his Army morale study were part of his version of the test. Stouffer handed out his test on the first day of class in his undergraduate courses. All 20 items were false, yet most of his Harvard students marked the majority of the items as true.

Stouffer would collect the tests before announcing the answers. Then, with considerable satisfaction, he would make his preemptory strike. Breaking into a broad smile, Stouffer would shout out, "Who didn't know that? You didn't know that!" Having answered the dreaded question before anyone had even asked it, Stouffer then proceeded to give his inspired lectures on survey research.

There is another more emotional factor involved in the resistance to social science. Social scientific theories and findings can threaten our established beliefs and understanding of the world. Aphorisms are often wrong; cultural truisms turn out to be mistaken; new ideas and data challenge comfortable positions of privilege. I shall later argue that social science is most useful precisely when it is advancing discomfiting insights against the tide of dominant opinion.

Little wonder, then, that social science receives more than its share of harsh criticism. Economics has long been called "the dismal science." The poet W. H. Auden coined the phrase, "to commit a social science" to mean to make a silly or outrageous statement. Witty, but one can easily detect a note of treat.

Likewise, former Senator William Proxmire from Wisconsin enjoyed entertaining the U.S. Senate with contemptuous citations of social science studies. Each month the senator would attract publicity by announcing his Golden Fleece Award." These dubious awards would cite an instance of what Proxmire considered an outrageous example of government waste. Often he would rip out of context an obscure-sounding project from the records of government sponsored research. Without having read the investigation, Proxmire would rage against its having been funded.

In one celebrated incident, he attacked a psychological study of aggression in monkeys (Kiesler & Lowman, 1980). The researcher soon lost his federal funding for the research. He then surprised the senator by suing for defamation. He argued that Proxmire's attack had seriously damaged his standing as psychologist and researcher. After lengthy court battles, the Supreme Court of the United States ruled in the psychologist's favor.

Whatever the merits of this case, the general point is well taken. By definition, social science treads on subjects of great and immediate interest to people—money, power, culture, even personal matters. Of necessity then, controversy will always surround social science. It will often be "hot in the kitchen," whether social scientists like it or not. The Audens and Proxmires of the world will always be around.

Moreover, every field needs critics. Many critics chafe particularly about social science writing. Why must it be so awkward, so abstruse and

filled with new words (neologisms)? I partly agree. I think social scientists should write more clearly, though there is far greater variety than critics allow.

I will, however, defend the use of neologisms. No one criticizes physical science when it finds it necessary to employ new terms. Yet there is an unstated assumption by critics that social science should conduct its work while limited to popular terms of the language. When social science does adopt popular terms, such as "intelligence," it often causes confusion. Typically, the popular term has additional meanings (such as "intelligence" being a single, one-factor entity) that turn out to be imprecise. New terms have the distinct advantage of being precisely defined without such erroneous connotations.

The deeper problem caused by the immediate relevance of social science for everyday life involves values—judgments of right and wrong and what "ought to be." Social scientists are human beings with their own values who study human beings. So value assumptions in their theory and research are unavoidable. In addition, the work of social science may influence public policy in ways that directly affect people's lives. For these reasons, the work of social science necessarily involves values.

To be sure, the natural sciences cannot escape the involvement of values either. One need only think of the painfully difficult value questions raised by atomic energy or DNA research. Yet social science is especially open to charges of value bias by those unhappy with its results and conclusions.

Social scientists are not of one mind on the role of values. Unfortunately, some simply deny the issue. They come to regard themselves as completely "objective." They might agree it is a problem for others, but not for themselves. Nonetheless, most social scientists, I believe, would agree with the Swedish economist, Gunnar Myrdal (1944:1043), when he argued that values are inherent in social science. Be aware of your values, Myrdal maintained, struggle against their biasing effects in your work, and alert your readers to them. Objectivity becomes, then, a sought-for goal of social science, one that you must strive for even if you can never fully attain it.

1.5 SUMMING UP

The social sciences study social life. As such, everyone can think of themselves as a social scientist. This closeness to life has significant consequences for social science, consequences we have considered in this chapter.

It is all too easy to ignore the deep complexities of social life. In doing so, some come to regard the work of social science as obvious—*after the fact*. The short quiz revealed the not so obvious character of many social science findings.

We noted five reasons for the complexity of social life. It is multiply determined, highly interrelated, and simultaneously operates at several levels. So-

cial life is also reactive. Human beings present a moving target; they generally react back to each other and their environment. Finally, social scientists must work with a high level of error in their measurements of this complex scene. Effective measures must possess both reliability (stability over time and internal consistency) and validity (accurate representations of the abstract constructs they are intended to tap).

In the midst of this complexity, social science deals with matters that matter—issues that affect people's lives. Not surprisingly, then, social science has more than its share of critics—many of them thoughtful, some just abusive. Moreover, its most policy-relevant work will necessarily be controversial. This relevancy also means that the values held by social scientists themselves will be involved in their work. They can and should strive for objectivity, yet complete objectivity is unobtainable.

With all these problems—from complexity to controversy, one might wonder how social science can operate at all. The principal weapons any science has to combat these problems are the rigor of its theory and methods, peer review and criticism, and a special form of critical thinking that is the subject of this volume. Basic to this manner of thinking is a *healthy skepticism*.

By "*healthy*," I mean an open stance to new ideas and research results. A nihilistic negativism that virtually rejects the possibility of advancing our understanding of social life is not constructive. Such a rejection is self-fulfilling. If we do not expect to advance knowledge, we will not do so.

By "*skepticism*," I mean a full appreciation of the rich complexities of social life as discussed in this chapter. Such a view includes being skeptical of your work, too, and being prepared—even expecting—for later work to prove you wrong. Such a humbling prospect is usually in the cards. Advances in science are social products, the work of many scientists and many efforts—not the result of lonely scholars working in pristine isolation. Science advances by adopting a critical stance and subjecting its work to critical review.

Throughout the book, we will define the many forms this healthy skepticism assumes. The final chapter will ask you to play the role of a healthy skeptic yourself. You will review articles drawn from leading newspapers and try out what you have learned about thinking like a social scientist.

ISSUES FOR DISCUSSION AND REVIEW

- A> Does the subject matter of social science pose more—or fewer—difficulties than those of physics and chemistry? Why?
- B> Some social scientists believe that it is best not to discuss values. They strive for "objectivity." They do not think they need to inform others about their personal values. Other social scientists disagree. They believe they should publicly express their values so others can better judge how "objective" their research is. What do you think?

RECOMMENDATIONS FOR FURTHER READING ON ISSUES RAISED IN THIS CHAPTER

On the Complexity of the Social World:

For readers who wish to read a basic source:

H. M. Blalock, Jr. 1984. *Basic Dilemmas in the Social Sciences*. Beverly Hills, CA: Sage.

On Expectancy Effects:

For readers who wish to read a basic source:

R. Rosenthal and L. Jacobson. 1968. *Pygmalion in the Classroom*. New York: Holt, Rinehart & Winston.

On Values in Social Science:

For readers who wish to read a basic source:

G. Myrdal. 1944. *An American Dilemma*. New York, Harper & Row. Appendix 2.

Chapter 2

Thinking Theoretically

Theory has a bad name in popular American thought. It often connotes high-flown, unrealistic ideas too impractical to be useful. Moreover, many view scientific theories to be so abstract as to be impossible to understand. Perhaps Einstein's famous theory of relativity led to this view.

This prevalent attitude goes with the stereotype of scientists in general—genial people, perhaps, but so hopelessly wrapped up in their impractical theories they can barely navigate through their daily lives. Yet thinking theoretically is an essential part of science. Indeed, theory is essential for everyone. Our actions are based on predictions that derive from our unstated “mini-theories” about the social world.

To see why theory is essential to thinking like a social scientist, this chapter sketches the broad outlines of social theory. Just what is a theory? How do you define a theory's key concepts? What makes a theory useful? From where do theories come? We shall see that theories are part of larger scientific perspectives (*paradigms*). Finally, we shall consider how theories take different forms across the social science disciplines.

2.1 WHAT IS A THEORY?

Social science theories are answers to puzzles. They arise from conflicts between our observations and our present understanding of the social world. They are attempts to explain unexpected research results, contradictions, inconsistencies—anything that does not logically follow from our present grasp of how social life operates. When successful, theories advance our knowledge of social life.

Social theories take many forms, yet they all express *ideas* about the social world. They do so with abstract statements that attempt to add to scientific knowledge in five important ways. (1) Theories help to *classify* “things”—entities, processes, and causal relationships. (2) They also help to *predict* future events as well as (3) *explain* past events. (4) Theories are especially important

for *understanding* what *causes* events. (5) Finally, they *guide research* in useful directions by specifying on what to focus and what to ignore. Not all theories perform all five tasks. Yet a theory wins acceptance within social science by how well it accomplishes these tasks.

Theories, then, are formal statements of ideas to advance science in these five ways. They do so by proposing particular concepts (or constructs) that classify and describe the phenomenon; then they offer a set of interrelated statements using these concepts. These statements must use a common language others will understand—often this language is mathematics. Theories put in verbal form usually must be translated into statistical terms before they can be rigorously tested (Blalock, 1969, 1984).

Hence, we must formalize theories to communicate clearly with other scientists and to allow research tests of the idea. The statements are systematically related to each other and include causal *generalizations* that are directly testable. Science values simply stated theories, because such theories are more easily understood and tested. Yet, given the complexity of the social world, we cannot always achieve this desirable feature.

We will be discussing social theories throughout the book. Recall examples from Chapter 1. In the question on military morale, we saw how two concepts—reference groups and relative deprivation—helped to explain the surprising results. These concepts expressed the theory's basic idea—that comparisons with significant others shape human satisfaction (Walker & Pettigrew, 1984). In the question on homicide after wars, the concept of a violent culture captured the theory's basic idea. Homicide increases after wars, the theory holds, because war culturally legitimizes violence. In the question on payment and lying, the concept of cognitive dissonance explained why subjects paid only \$1 changed their views of the boring experiment more than those paid \$20.

Observe in each example that the facts do *not* speak for themselves—as the adage claims. Observations must be part of a broader context, a *theoretical* context, before they gain importance and are generalizable to other situations. This needed context, then, must be *abstract*. So, social scientists state their broad theories in a general way that is universal and not unique to a particular location or time. Any test of the theory, however, is *concrete* and limited to the specific conditions of the test.

2.2 DEFINING A THEORY'S KEY CONCEPTS

Concepts (or constructs) are terms needed to shape and communicate ideas. We have seen how they form the building blocks with which we *construct* theories. New theories often introduce concepts, such as relative deprivation, that present a novel approach to an old problem.

Many social science concepts are *fuzzy*—that is, precise definitions are not possible and their boundaries are unclear. This imprecision can cause difficulties for social theory. This is especially true when, as Chapter 1 mentioned, the concept has no clear meaning. Different

example, the popular idea of public opinion turns out to be extremely difficult to define. V. O. Key, Jr., the political scientist, quipped it was harder to define than the religious conception of the Holy Ghost!

Yet fuzzy concepts cause fewer problems in social science than you might think. This is true in part because agreement among social scientists about a concept's meaning is more important than its formal, verbal definition. Fuzzy definitions are also often adequate, because the concrete variables that represent the concept in research define it more precisely. Hence, the specific procedures that measure the variables are called **operational definitions**.

For example, *intelligence* is an abstract construct (or concept). Psychologists measure it by a set of variables thought to be *valid* representations of the abstract concept. The actual procedures for measuring these variables with an intelligence test comprise the operational definition of intelligence. Some would argue what the test measures defines what we mean by intelligence, that the operational definition is itself sufficient. Most social scientists reject this view. They regard this measure of intelligence to be only one among many acceptable operational definitions; the abstract concept is much broader than what any particular test measures.

Social scientists may disagree over a concept's exact verbal definition. If they agree on the variables that measure it, however, research can proceed. For example, there is debate over the verbal definition of social class—a central concept in sociology. Yet there is general agreement that three variables measure social class—years of educational attainment, annual income, and the prestige of one's occupation. As with these three measures of social class, it is highly desirable to have multiple measures of a single concept. Each measure contains its own unique error. So the core meaning of the concept is captured by what the measures have in common.

The problem of fuzzy definitions varies according to the type of concept. **Primitive concepts** are the most basic terms, but the hardest to define precisely. Shared agreement about primitive concepts is vital, because other concepts cannot describe them. **Derived (or nominal) concepts** are, as their name implies, derived from primitive concepts. Obviously, the whole theoretical stack of cards depends on our having a common understanding of the basic, if fuzzy, primitive concepts.

2.3 WHAT MAKES A THEORY USEFUL?

If concepts are the building blocks of theory, the relational statements that comprise the theory form the structure. The bare bones theoretical statement can simply state *A causes B*. In Chapter 4 we will see that the idea of cause is complicated. So even this simple statement requires careful testing. It may turn out that *A causes B* only under condition *X*. When the situation is different from *X*, *A* does not lead to *B*. In such common situations, the *X* condition is a **moderator variable**, since it *moderates* the relationship between *A* and *B*.

In social psychological experiments, for example, female subjects often conformed more than male subjects. Alice Eagly (1978; Eagly & Carli, 1981)

reviewed these studies. She found this relationship held primarily in studies conducted before 1970 by male experimenters who used tasks in which males have an advantage. In recent studies conducted by females with tasks familiar to both sexes, gender differences in conformity disappear. Thus, the date of the study, the sex of the experimenter, and the type of task *moderate* the relationship between sex and conformity. This simple five-variable theory now allows us to predict *when* females will conform more than males and *when* they will not. It also suggests how traditional gender roles operate in our culture. These roles were stronger before 1970 and are triggered by male experimenters and male-oriented tasks.

A may relate to *B* only because they both relate to *C*. In this causal statement, *C*, the **mediator variable**, explains directly *why* *A* relates to *B*. Taller people usually weigh more than others. So height (*A*) and weight (*B*) positively relate with each other, yet no direct causal connection exists between them. Such mediators as genes and diet explain the relationship. Thus, genetic and nutritional factors *mediate* the positive correlation coefficient between height and weight.

More commonly, mediators account for some, but not all, of the link between *A* and *B*. That is, *A* partly causes *B*, but the relationship is also influenced by mediators that relate to both *A* and *B*. For instance, many studies show that older white Americans are on average more prejudiced against minorities than others. Education mediates *some* (but not all) of this relationship. Older people have had on average less education than younger people, and better educated people are usually less prejudiced. The link between age and prejudice involves other mediators as well. Continued work might uncover many more mediators, each explaining a portion of the original relationship. In time, a large array of mediating factors might account for the full correlation between age and prejudice. At that point, we would fully understand why older people are often more prejudiced.

By such means, theories become useful by helping with the five tasks specified above—to classify, predict, explain, understand, and guide research. The **surplus meaning** of both concepts and theories helps in accomplishing these tasks. Surplus meaning refers to the extra meanings and ideas conveyed by concepts and theories that go beyond their formal definitions and statements. The importance of surplus meaning suggests a rough rule of thumb for how useful a new concept or theory is: *Does it lead to new ideas that you would not have had without the new concept or theory?* If it does, then clearly the new idea is useful.

This rule of thumb is not as simple as it may first appear. It contradicts a popular notion about ideas in general—namely, that they are useful only when they are “true.” In Chapter 4 we will learn that the assessment of “truth” is neither easy nor direct. Hence, we must place such terms in quotation marks to remind us of this problem.

Scientific theories that later prove to be wholly or largely “wrong” often lead to scientific advances. They do so by setting off the sparks of sound ideas in others. Often such theories shape later advances by forcing critics to

counter them with rival theories and research. By our rule of thumb, then, these theories are useful although they later prove to be "wrong."

Popular misconceptions about science fuel this difference between scientific and non-scientific thinking. As emphasized in Chapter 1, science is a social enterprise, not the creation of lonely individuals uninfluenced by others. Scientific advances, then, are social products made possible by the work of many people. Even those who advance theories that later prove to be inadequate contribute to the advances.

Theories are also necessary guides to research. We noted the complexity of social life and the almost limitless number of possible variables and causal links that we could study. Remember high school algebra. When there are too many unknowns in a set of equations, solutions are impossible. The social researcher routinely faces this situation. Theory must supply the needed unknowns for work to proceed.

There is, then, a need to narrow our search and avoid *fishing expeditions*. Aimless investigations, unguided by theory, are wasteful of resources and usually fruitless. Well-specified theories provide research direction. They suggest which variables to measure (to represent the key concepts) and what causal relationships to test. Hence, theories reduce the many possibilities to a manageable context for research. Therefore, we need theories to guide research just as we need research to test theories. Science requires a constant interchange between theory and research, with each shaping and guiding the other.

2.4 FROM WHERE DO THEORIES COME?

Puzzles motivate scientists to formulate theories. The ideas advanced in theories come from experience and imagination. This is a major reason social science benefits by having people among its ranks from a wide variety of backgrounds. The more diverse the origins of social scientists, the wider the net of special experiences and knowledge upon which to draw. This provides an additional reason for affirmative action efforts to recruit more women and minorities into social science. To be sure, these efforts are steps toward greater opportunities and fairness for underrepresented groups. In addition, such efforts aid social science by widening its range of ideas and theories.

Science at the theory-building stage is open to influence from all sources. It is a mistake to think that science consists only of quantitative research and statistics. Qualitative research is particularly important at this stage. It can get close to social life to gain new ideas and insights before we learn how to conceptualize and quantify the phenomena under study.

There are, however, two major differences between scientific and non-scientific theories. First, scientists design their theories to be testable and open to disproof (*falsifiable*). Second, rigorous research then tests the scientific theory.

We can learn from where theories come by reviewing three examples of social theory development at different levels of analysis. In each case there is a puzzle to solve, a contradiction to explain. And in each, social scientists draw

The puzzles that social theorists must solve take many forms. Often conflicting research results present the puzzle. So does the failure of a theory to generalize to a new time, situation, or group of people. Our first example is of this type. It describes how sociologists expanded their theory of self-esteem when it did not apply to children.

Sometimes the contradiction arises from the failure of theory to explain what you think you know from your personal experience. My work illustrates this situation. Sometimes a glaring contradiction between abstract theory and societal events present the puzzle. This situation describes our final example. Keynesian theory, a major advance in economics, developed as a direct result of a clash between theory and events.

2.4.1 Rosenberg's Theory of Self-Esteem

Often puzzles come from within social science itself. Discrepancies in empirical findings arise from studies conducted by different investigators on different samples in different locations. Social scientists then alter their theories to explain such discrepancies.

Similarly, error cases can suggest a puzzle. Error cases are instances where the theory's predictions are clearly incorrect. Such cases are important and worth careful attention. They inform us about the weakness of the theory under test. Suppose close inspection of a study's data reveals there are many error cases of a particular type. This circumstance suggests not only the theory's inadequacy, but how to improve it.

Such an instance occurred in the sociological study of self-esteem. Rosenberg and Pearlman (1978) set out to reconcile a series of conflicting findings. Among adults, higher social class standing relates to higher self-esteem. However, among adolescents this relationship is weak, and among younger children it disappears. How can we explain these differences? The two sociologists formulated and tested four different explanations for this puzzle.

(1) *Social comparison*. Adults meet a far wider class range of persons than children and perceive class differences more than children. (2) *Reflected appraisal*. Since we see ourselves in part as others see us, the wider class contacts of adults also shape self-esteem through how others react to us. (3) *Self-perception*. We also form our self-image by observing our own behavior as others observe it. Children are born into their social class standing (ascribed status), while adults often achieve theirs. Hence, adults are more likely to make inferences concerning their self-worth from their social class standing. (4) *Psychological centrality*. The more centrally important social class dimensions are to a person, the more they influence self-esteem. Hence, income and self-esteem relate strongest for those adults who most value money. Children are often confused about their social class position—thus, it cannot be as central for them.

Once they had specified these four processes, Rosenberg and Pearlman had accomplished more than merely explaining the original empirical puzzle. They had developed a broader, more inclusive theory of the social development of

2.4.2 Explaining Anti-Black Prejudice Among White Southerners

Less sweeping theories often arise out of a social scientist's personal experience. Like most social scientists, I can illustrate the point with an example from my experience. I grew up in the American South in the midst of intense racial segregation. Anti-black prejudice and discrimination were deeply ingrained in the traditions of Virginia during the 1930s and 1940s. As an undergraduate at the University of Virginia, I became interested in social science because I wanted to study and combat these phenomena. I read extensively on the subject. There I confronted theoretical arguments that did not fit with my southern experience. The conflict between what I read about racial prejudice and what I thought I knew about it posed the puzzle for me.

The classic work on *The Authoritarian Personality* (Adorno, Frenkel-Brunswick, Levinson & Sanford, 1950) appeared when I was a college sophomore. Its exciting research and analysis became the dominant theory of prejudice in social science in the 1950s, inspiring thousands of follow-up studies. It emphasized the personality basis of prejudice. It did not study the South, however, and it virtually ignored power, culture, and social structure in race relations.

Using insights from Sigmund Freud's psychoanalytic theory, the book focuses on the well-established fact that prejudiced people typically reject not just one but many outgroups. The study showed that people with multiple prejudices often have a particular personality syndrome—called *the authoritarian personality*. Though originally inspired by German Nazis, research throughout the world supports many of the personality tenets of the book.

The authoritarian personality gets its name from its central feature. Authoritarians have an up-and-down (hierarchical) view of society; they see people as ranked in status from top to bottom. Toward authorities at the top, such people are compliant, even obsequious (authoritarian submission). Toward those perceived as beneath them in status, they aggressively demand compliance (authoritarian aggression). In addition, the multiply-prejudiced do not like to think deeply about themselves. They try not to look inside at their own personalities (anti-intrapeception).

As an undergraduate, I found this analysis fascinating. It *was* a major advance in the understanding of prejudice at the individual level of analysis. Yet it did not help me to understand the pervasive southern patterns of racial hatred and discrimination that surrounded me.

Most of the people I knew well—friends and family members—expressed varying degrees of anti-black prejudice and acceptance of racial discrimination, although few of them exhibited features of the authoritarian personality. From my “up close” experience, then, I doubted if greater authoritarianism among white Southerners could explain the region's racist patterns.

The theory is not so wrong as it is incomplete. In ignoring cultural and structural factors, it omitted the South's peculiar history that fashioned its racial problems—slavery, frontier values, a lost civil war, and deep poverty. I drew up a survey research design that could test my ideas. Later I followed the design for my doctoral thesis research.

Surveys of the white populations of four southern and four northern towns provided the data for my thesis (Pettigrew, 1958, 1959, 1961, 1991a, 1993). I found the attitude measure of authoritarianism (the F-Scale) correlated with anti-black prejudice about the same in the two regions. Moreover, the average score on the measure was the same in the North and South. Authoritarianism, then, proved to be an important factor in racial prejudice in both regions at the individual level. Yet it did not explain the greater intensity of such prejudice in the South.

My research showed that the racial norms of the South, shaped by its special history, accounted for the regional difference. Norms are widely-shared expectations regarding how people should think and act (Pettigrew, 1991b). Conformity to the South's norms in other domains predicted the racial attitudes of the white Southern respondents. I repeated the study in South Africa with college student respondents with similar results. Later Middleton (1976) followed up this work in the South with larger samples, and both replicated and extended the results.

My questioning of an important social science analysis proved useful. Research supported my theoretical hunches, stemming directly from my experience in the South and extended them to another society. The point for the reader is to have confidence in your ideas about how the social world operates. When what you learn in social science does not fit with your experience, question the social scientific material. Then formulate your idea in testable terms and gather data. You may be right!

2.4.3 Keynesian Theory in Economics

John Maynard Keynes was an English economist with wide experience in public policy. A critic of classical economic theory, he was a successful financier and journalist before he became the most famous economic theorist of the 20th century. He developed his influential theory in direct response to his criticism of British economic policy.

Keynes' interests in public policy were of long standing. The son of an economist, he showed skill in political debate with Cambridge University's student government. He later served as an economic advisor to the Versailles peace conference following World War I. Events at this 1919 conference horrified Keynes. The Allies required Germany to pay enormous amounts as reparations for war damage. Keynes believed these payments were excessive, could never be paid, and would deter European economic development. He correctly foresaw disaster.

Keynes left the peace conference in protest and ill health, and wrote a stinging indictment of the treaty (Keynes, 1920). Out of government throughout the 1920s, Keynes wrote frequently in leading newspapers on economic policy. He worried about the persistent unemployment of workers in major sectors of Britain's economy—such as coal miners and shipyard workers. His widely-read commentaries advocated public work projects to supply useful jobs for these long-term unemployed.

Dominant economic opinion, however, flatly rejected Keynes' remedy. It placed its faith firmly in classical economic theory; an unfettered market would somehow right the economy's imbalances. Besides, went the argument, the unemployed could secure jobs if they would accept less pay. Similarly, business could sell more goods if it would lower prices. Such concessions would reactivate the nation's economy. To his critics, Keynes' arguments were misguided—kind hearted, perhaps, but lacking a theoretical base. Without an alternative to classical economic theory, his popular articles had scant impact on British policies during the 1920s.

Soon thereafter, the Great Depression struck throughout the world. Keynes' worst fears came to pass. Mainstream economic theory could not account for the near-total collapse of both the British and world economies. The opportune time had arrived to challenge much of classical theory and to supply a different economic perspective.

Keynes, a political activist, seized the moment. Only now did he become a forceful theorist. First, he wrote *A Treatise on Money* (Keynes, 1930). Developing his ideas further, he produced his masterpiece, *The General Theory of Employment, Interest and Money* (Keynes, 1936). Though technical and complex, this volume had direct relevance to the Depression. It held a government-sponsored policy of full employment could best achieve economic recovery.

Keynes questioned much of traditional economic thinking. In a depression, there was no wage so low it could eliminate unemployment. So it was both wrong and unjust to blame the unemployed for their plight. There was a need for an alternative explanation and remedy, and his volume supplied both. The new focus revolved around the concept of *aggregate demand*. This term refers to the total spending in an economy by consumers, business investors, and government. When aggregate demand is high, economic times are good. When it is low, sales of goods suffer and jobs are lost.

Keynes' analysis showed that consumer spending made only a limited contribution to aggregate demand. Hence, variations in business investment and government spending are of primary importance. So, in times of economic slowdowns, there is a need for an increase in spending by business and government. There are many ways government can affect spending. It can make borrowing easier by increasing the money supply and lowering interest rates. Often in mild recessions, such monetary alterations are enough to stimulate business investment and start the recovery.

Deep depressions, such as the devastating one of the 1930s, require stronger economic medicine. Government should change its exchange rates with other currencies, overhaul its taxation policies, and sharply increase its spending. Keynes' most radical break from the past was his remedy of deliberate government deficits for public works and subsidies to afflicted groups.

The world was ready for Keynes' views. They soon won wide acceptance throughout the industrial world, and have shaped American economic policies since 1935. For our purposes, the important point is that Keynes did not set out to be a theorist. The Great Depression that ravaged the industrial world in

his time presented the puzzle. His interests in practical economic policy for Great Britain led him to fashion his innovative new theory.

There is a prejudice among many social scientists that holds practical work and policy interests in low esteem. It views such work as mere applications that do not advance social science understanding. This example challenges this narrow view. Keynes' work illustrates how practical work can lead back to exciting theoretical advances. There are many other examples. Theory suggests new ideas for application to social problems, and these applications in turn present new puzzles and ideas for theory. When working at its best, this full-cycle link between social theory and application is helpful to both.

2.5 PARADIGMS PROVIDE THE CONTEXTS FOR THEORIES

Keynes introduced more than a basic theory; he provided an innovative paradigm—a new perspective on economic systems. Our first two examples concerning theories of self-esteem and prejudice were simply additions to established theory within an existing paradigm. Keynesian economics accomplished far more. Classical economics held national governments to be weak, individual liberty paramount, and economic systems the sum of their parts (Hutton, 1986:218). In contrast, Keynes held governments to be powerful, individual liberty one among many values, and economic systems more than the sum of their parts. Such a shift in view encompasses far more than social research can test.

By making aggregate demand the centerpiece, the Keynesian paradigm offered a new form of macro-economics. Keynes' ideas suggested new theories and ways to conduct research on economic systems. These ideas posed new puzzles for solution while offering explanations for old puzzles other paradigms could not explain.

These are the five functions of new scientific paradigms. They (1) present a broad, new perspective, (2) suggest new theories and (3) types of research, and (4) pose new problems while (5) solving old ones.

There is, however, more agreement over what paradigms do than precisely what they are (Cohen, 1992). They are *not* theories. Theories are testable propositions about causal relationships. Paradigms are much broader. They provide the wider perspective within which a large set of interrelated theories and research studies develop. So paradigms are *meta-theoretical*—that is, they guide a whole scientific tradition. Thus, a paradigm offers a model that inspires a group of scientists to develop a coherent tradition of theory and research (Cohen, 1992:1412).

As extensive scientific traditions, paradigms become deeply established. When they shift, it is a major event. The most famous examples of dramatic paradigm shifts have occurred in the natural sciences. These *scientific revolutions*, in Thomas Kuhn's (1970) terms, change both scientific and popular thinking. Newtonian physics replaced earlier "natural laws," only to be over-

turned itself in the 20th century by the theory of relativity. In biology, Charles Darwin's theory of natural selection replaced earlier biblical and "natural law" explanations for the harmony between living forms and their environments.

Social science has no examples of such sweeping "revolutions." The nearest instance is the rejection of simple biological explanations for social phenomena following World War I (Pettigrew, 1980). The complexity of the social world has led to less agreement within the social sciences on any one supreme paradigm reigning unchallenged.

However, paradigm shifts do occur in social science. They are less decisive than the Newtonian and Darwinistic examples, but they serve similar functions. What typically happens is that the new perspectives add to, rather than replace, existing paradigms. Often the new ideas meld with older conceptions to form even broader perspectives.

Thus, Keynesian theory did not replace classical economic theory. Modern economics blends the two. Neo-classical analyses of *supply* remain while economists widely accept Keynes' emphasis on aggregate *demand*. Similar examples exist throughout social science. In sociology, conflict and consensus paradigms coexist and represent two sides of social reality (Turner, 1990). Conflict theories seek to explain social change, while consensus models seek to explain social order. Both are necessary concerns, though the two paradigms disagree in many ways. To witness paradigm shifts in social science, consider how perspectives on social deviance have shifted over the years.

2.5.1 Paradigm Shifts in Thinking About Social Deviance

Initially, social science regarded deviance from societal dictates as simply a problem of deviant individuals. That is, the cause of deviance rested entirely *within* those who committed the deviant acts. From this perspective, criminality, drug addiction, even mental illness show individual "weakness" for the condition. Early explanations held these individual conditions to be unchangeable (immutable), often genetic. Thus, society had no obligation to help deviants. What good would it do when cures were impossible? This *immutable dispositional paradigm* caused England to send debtors to prison although that made it impossible for them to repay their debts.

The next paradigm of deviance was less heartless. The *mutable dispositional paradigm* still thought the problem existed wholly within deviants themselves. However, it granted that the deviants could be cured. So people expected prisons, asylums, and other institutions to "treat" their inmates and end their deviance so they might return to society. Yet the basic responsibility of these institutions remained that of isolating these deviants from the general population. One needs only to look at most prisons today to see that their remedial mission remains secondary at best.

By the 19th century, social scientists began to propose a more complex *interactive paradigm*. This view held that deviance was a combined result of individual dispositions and social factors. Criminals and others seen as deviants were still held responsible in part, but social causes of their behavior were also

important. This model of deviance did not gain full acceptance in social science until the 1950s.

The most striking paradigm shift on deviance came in the 1950s and 1960s. The *labeling and stigma paradigm* turned the view of deviance completely around. It saw the problem not with those labeled and stigmatized as deviants, but with those who had the power to label and stigmatize.

This new perspective questioned the whole concept of deviance. Was it not merely a *social construction*? That is, was it not a concept developed by society rather than a genuine phenomenon inherently existing in acts labeled "deviant?" After all, society's laws socially define criminality. That which is criminal in one society can be acceptable behavior in others. Hence, many nations do not tolerate the widespread ownership of guns allowed in the U.S. Some societies accept drug addiction; others label it deviant. Even the same society can accept some addictions while stigmatizing others. Western society has long tolerated addiction to alcohol and tobacco, while labeling other drug addictions as deviant.

There are limitations to labeling and stigma theory. Its analysis usually ignores the act regarded as deviant. Moreover, it often neglects society's involvement in these acts. Yet this theory provides a strikingly different vantage point from which to view deviance. Like other paradigm shifts, it broadens the range of inquiry and makes us think of issues ignored by older paradigms. Though it has not replaced the interactive paradigm of deviance, the labeling and stigma paradigm is now an important component of how social science regards deviance.

2.5.2 Kuhn's Model and the Struggle for Paradigm Acceptance

Paradigms in social science, then, are more modest in scope than those in the natural sciences. Nevertheless, Kuhn's (1970) analysis of scientific revolutions is useful in thinking like a social scientist.

Kuhn (1970) states that *normal science* works within a widely-accepted paradigm. This perspective becomes the cognitive cocoon within which *scientific communities* carry through in theory and research the many implications of the paradigm. It goes unchallenged until puzzling research results (anomalies) repeatedly arise. The existing paradigm cannot account for these anomalies. This situation brings on a scientific crisis that sets the scene for a scientific revolution.

At first, there is great reluctance to abandon the old perspective. In time, however, established scientists either convert to the new, more promising paradigm or die off (cohort replacement; see Chapter 5). This conversion process from one perspective to another is complex and not entirely rational. Neutral rules of theory construction and research remain important—they are what distinguish science from other ways of establishing knowledge. Yet, Kuhn maintains, political and other biasing factors also are involved. This is true for natural science, and it may be more true for social science.

Kuhn's model of scientific change is widely debated. It exaggerates the

slow, gradual process of melding and replacement. As we noted, the combining rather than substitution of paradigms is typical of the social sciences.

A second problem comes from a misreading of Kuhn's model by some commentators. Seizing on Kuhn's point concerning irrational factors involved with shifting perspectives, some claim the model shows that neutral rules of theory and research do not operate in science. With no valid ways of choosing between paradigms, goes the argument, scientists are no different from others who have no way to test their claims. Kuhn's model of scientific change has no such implication. Non-rational factors influence science as with any human enterprise. Nonetheless, the neutral procedures of science—the focus of this book—remain important and unique.

These issues aside, Kuhn's model has special strengths. Its basic concepts of paradigm, normal science, scientific community, and scientific revolution provide a useful perspective. Its denial of the romantic view of science as a completely rational enterprise marching relentlessly to final truth is a helpful corrective. Its emphasis upon scientific resistance to change is of special interest to social science.

That science resists new paradigms should not surprise us. Since science is a social product, it is subject to many of the barriers to change other social institutions exhibit. Dominant paradigms become the conventional wisdom. They get deeply rooted; careers of celebrated scientists are based on them; entire research traditions revolve around them. The paradigm's primitive concepts gain common meanings and acceptance. Thus, those on the periphery often introduce new paradigms. They are less enmeshed in the dominant paradigm, have less status, and less access to the leading journals. For these reasons, the acceptance of new scientific paradigms can be problematic (Kuhn, 1970).

Observers who romanticize science as a noble pursuit of truth decry this conservatism. They cite many instances where science was slow to adopt innovative breakthroughs. True enough, but the selection of these instances is biased. We need to know, as control comparisons, the frequency of other types of cases. The critics cite dramatic advances that science was slow to adopt. Yet we also need to know how often science adopted or rejected *negative* cases. The conservative stance of science has its drawbacks, to be sure, but it also screens out many false leads.

2.6 THE WIDE RANGE OF THEORIES IN SOCIAL SCIENCE

In addition to the range of competing paradigms in the social sciences, a variety of theories exist within paradigms. Theories range widely across the various social sciences both as to their level of analysis and how specific they are.

Experimental social psychology's theories are the narrowest in scope. Reflecting its root discipline of psychology, this field typically regards specific hypotheses and predictions as theories. Chapter 1's relative deprivation explanation is an example. From our perspective on theories, these specific explanations

are more accurately regarded as parts of a more inclusive theory. Indeed, one prominent social psychologist complains that his field should advance broader theories (Kelley, 1983). He compares social psychologists to mining engineers instead of geologists. They dig down deeply, but they do not connect their insights with more general theories.

Broader theories in social science, however, often suffer from being too vague to allow direct empirical testing. Such broad theories represent general approaches, since their vagueness makes them impossible to disprove (falsify). General approaches can be useful in social science as paradigms, but we should not confuse them with theories. Those who prefer specific theories grumble that social science needs fewer "approaches" and more "arrivals."

The most effective theories for guiding social research are middle range in scope. These theories are more general than specific hypotheses, but not so broad and vague as to be untestable. Such theories are also broad enough to be generalized across cultures and nations. We will review such middle-range theories in Chapter 6.

Keynes' "general theory" shows how a more sweeping approach can be effective. We noted how this major contribution is basically a paradigm, for it introduced a perspective that countered classical economics. Yet Keynes also provided an array of middle-range theories within the paradigm that are testable. Little wonder, this work won wide attention.

Sociological theory is often even broader. Although called "grand theory," these contributions border on being paradigms. They cast a wide net for detailed work, but direct tests are not possible. Nineteenth-century sociology began the tradition of grand theory. A 20th-century example is Talcott Parsons' theory of action (Parsons, 1937, 1951, 1970; Parsons, Bales & Shils, 1953; Parsons & Shils, 1951).

The complexity of Parsons' ideas defy summary. Yet a brief description of his paradigm's aims provides a glimpse of its enormous sweep. Taking the systems approach we will discuss in Chapter 7, Parsons viewed the structural, cultural, and personality components of social life as interlocking systems. As such, these systems have common problems and processes. From 1937 until his death in 1979, the Harvard professor elaborated on these common problems and processes. Though criticized for its breadth, Parson's contentions have had a lasting influence on sociology. Like most grand theory, it provided a valuable paradigm even if further specification was necessary to allow empirical testing.

2.7 SUMMING UP

Theories are attempts to solve puzzles. Inconsistencies that arise from our present understanding of social life pose these puzzles. Theories advanced to explain these inconsistencies offer new ideas about the social world. They are essential to social science thinking, for they contribute to knowledge in five ways. Theories help to (1) classify, (2) predict future events, (3) explain past events, (4) understand social life, and (5) provide a framework for research.

Theories propose concepts (or constructs) to classify and describe the phenomena under study. They then advance a set of interrelated statements that propose how these concepts relate to each other. We formalize theories to communicate clearly and to allow research tests of the idea. Science values simply-stated theories, but the social world's complexity does not always permit them. Social theories must be abstract so we can generalize their ideas across locations and time. However, any test of the theory must be concrete and limited to the specific conditions of the test.

Concepts are the building blocks of theories. Social science concepts are often fuzzy, with imprecise definitions and unclear boundaries. This difficulty creates fewer problems than one might imagine. Agreement among scientists on a concept's measures is more important than agreement on its verbal definition. In addition, *fuzzy* definitions are often adequate, because the concrete variables that represent the concept in research define it more precisely. The specific procedures that measure the variables are called operational definitions. It also helps to have many variables to measure each concept. Each variable has unique variance of its own, but what the several variables have in common captures the concept.

In addition, we must distinguish between primitive and derived concepts. Primitive concepts are the most basic terms. Yet they are the hardest to define because other concepts cannot describe them. By contrast, we can define derived concepts with primitive concepts. Thus, the theoretical enterprise depends on a common understanding of the basic, but fuzzy, primitive concepts. Relational statements constitute a theory's formal structure. Such simple statements as A causes B are rarely possible in a complex social world. Typically, social theories must specify the moderators and mediators of the relationships. Moderators predict *when* and *where* the relationship between A and B will hold true. Mediators tell us *why* a relationship exists.

The usefulness of new concepts and theories can be gauged by a rule of thumb: *Does it lead to new ideas that we would not have had without it?* Note that even theories that later prove to be incorrect may, by this rule, be useful. Many advances in science are the result of countering erroneous theories.

Theories are also useful guides to social research. They supply the needed unknowns to limit the possibilities to a manageable context for effective research. *Fishing expeditions*—aimless research unguided by theory—usually prove fruitless.

Theories come from many sources. At this initial stage, science is open to all forms of inspiration. There are two differences, however, between scientific and unscientific theories. Scientists design their theories to be testable and falsifiable, and then they test them with rigorous research. Since we often draw our theories from our own experiences, social science benefits by having people within its ranks from diverse backgrounds.

We discussed three examples of theory development. Some puzzles come from contradictions that arise from within social science itself. Rosenberg's broadening of self-esteem theory came from research that found social class did not relate to self-esteem among children as it did among adults. Other

puzzles come from the scientist's own life experiences. Theories of prejudice contradicted what I thought I knew about racial prejudice in my native southern United States. I devised and tested a rival theory that stressed conformity to a society's norms.

The third example shows how applied interests in social policy can lead to major theoretical advances. For John Maynard Keynes, the English economist, opposition to his economic policies preceding the Great Depression inspired a radically different approach to macro-economics. His theory, emphasizing *aggregate demand*, advocated massive governmental spending for public works.

Keynes' views constituted more than a theory; they introduced a paradigm. New paradigms (1) offer broad, new perspectives, (2) suggest new theories and (3) research, and (4) pose new problems while (5) solving old ones. Paradigms, then, are much broader than theories. They provide the contexts within which interrelated theories and research studies develop. Thus, paradigms guide an entire scientific tradition. As such, they become deeply entrenched—virtually the air scientists breathe. So when a paradigm shift occurs, it represents a scientific revolution. Sweeping new paradigms, such as Darwin's natural selection perspective, are more common in natural than social science. More typically in social science new paradigms meld with, rather than replace, older paradigms. Recall the shifts in viewing social deviance—from the *immutable and mutable dispositional paradigms* to the *interactive and labeling paradigms*.

Kuhn's (1970) model of *scientific revolutions* is instructive. He emphasizes the resistance in science to shifting paradigms. The process is often slow and gradual, rather than dramatic. Like any human enterprise, irrational factors retard these shifts. Such resistance can slow the acceptance of important advances, yet it also screens out many false leads.

Finally, we saw that theories vary widely in scope across the social sciences. At their narrowest, theories in experimental social psychology consist largely of specific hypotheses and predictions. At their broadest, "grand theories" in sociology represent virtual paradigms, and are beyond empirical test. Middle-range theories, neither narrow nor sweeping, are the most effective guides for social research. Major contributions, such as Keynes' theory in economics, manage to include testable, middle-range theory while offering a major new paradigm.

ISSUES FOR DISCUSSION AND REVIEW

- A> The author holds theories to be valuable if they lead us to ideas we would not have had without them. Others disagree. They believe theories are valuable only if they are "true." What do you think?
- B> We have seen that theories often come from one's own experience. Use *your* experience to question any current social science idea. How would you put your objection in the form of a rival theory? What research would you want to carry out to test your new theory?

- C> Can you think of two conflicting paradigms operating today in social science? How do they conflict? Is the discipline combining the two perspectives, or is one paradigm replacing the other?

RECOMMENDATIONS FOR FURTHER READING ON ISSUES RAISED IN THIS CHAPTER

On the Structure of Social Theories:

For readers new to the subject:

P. D. Reynolds. 1971. *A Primer in Theory Construction*. Indianapolis, IN: Bobb-Merrill.

For readers who wish to read a basic source:

H. M. Blalock, Jr. 1969. *Theory Construction: From Verbal to Mathematical Formulations*. Englewood Cliffs, NJ: Prentice-Hall.

On Scientific Paradigms:

For readers new to the subject:

B. P. Cohen. 1992. Paradigms and models. In E. F. Borgatta & M. L. Borgatta (Eds.), *Encyclopedia of Sociology*. Volume 3. New York: Macmillan.

For readers who wish to read a basic source:

T. S. Kuhn. (1970). *The Structure of Scientific Revolutions*. 2nd Ed. Chicago: University of Chicago Press.

On the Range of Social Theories:

J. H. Turner, 1990. *The Structure of Sociological Theory*. 5th Ed. Belmont, CA: Wadsworth.

Chapter 3

In Comparison With What?

A 1991 survey asked a sample of American adults about happiness (Davis and Smith, 1991:193). "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?" Almost a third (31%) reported being "very happy." The majority (58%) chose the middle response, "pretty happy." One in nine (11%) said they were "not too happy."

How shall we interpret these isolated data? How do we know what a third of Americans saying "very happy" means? Does this represent an increase or decrease in reported happiness among adult Americans? How does it compare to samples of adults in other countries asked the same question? Obviously, we need additional data for comparison. *Data do not make sense until compared with meaningful benchmarks.*

Actually, we do have 18 previous surveys that asked Americans the same question since 1972. The total results from these previous studies shows little change: about a third (33%) over these years reported being "very happy," a majority (55%) "pretty happy," and one in eight (12%) "not too happy." With this additional comparison, we can now conclude that the 1991 results are not unusual for adult American samples.

How do these data compare with those of other nations? Suppose half of adult Canadians reported they were "very happy." This comparison might tempt us to conclude that Americans were not especially happy. Or suppose that only a tenth of the adult French reported being "very happy." This comparison might tempt us to conclude that Americans were quite happy. Hence, *completely opposite conclusions can flow from different comparisons*. The skeptical social scientist, then, always asks of any data—in comparison with what?