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SCIENCE, SOCIETY, AND
SOCIAL RESEARCH

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LEARNING OBJECTIVES

Upon completion of this chapter, the reader should be able to

- 1.1 Formulate examples of the four common errors in everyday reasoning
- 1.2 Compare the four types of social research
- 1.3 Argue for the primary importance of one of the components of validity

How do you contact friends and relatives you don't live with—Direct message? Email? Social media like Facebook, Instagram, or Snapchat? Do you call, or do you prefer in-person contact? Is in-person contact better when you need someone to confide in? What do your grandparents, who grew up without the internet or smartphones, think about digital communication? Do they use it?

In the past few decades, the internet, cell phones, and all the interrelated forms of communication they support—email, texting, social media, Zoom, Teams, and others—added new forms of social connection across the globe. Internet use in the United States has risen rapidly from 52% of U.S. adults in 2000 to 95% in 2023 (Sidoti 2024). By the end of March 2021, 65.6% of the total world population of 7,875,765,587 was connected in some way to the internet—an increase of 1,332% since 2000. Across continents, the percentage connected ranged from highs of 93.4% in North America and 89.2% in Europe to 77.1% in the Middle East, 70.1% in Oceania and Australia, 67.0% in Asia, and 43.2% in Africa (Internet World Stats 2024). These connections increased rapidly during the pandemic, with internet usage rising by 40% or more and videoconferencing increasing ten times (De, Pandey, and Pal 2020). As you can imagine, many social scientists wonder how these developments have affected our lives.

That's where social researchers begin: with questions about the social world and a desire to accurately answer them. Social research differs from ordinary thinking in its use of systematic scientific research methods.

In this chapter, we raise questions about internet use, social networking services, and social ties to suggest how the use of scientific research methods can result in knowledge that's more important, more trustworthy, and more useful than personal opinions or individual experiences. You will learn how social scientists' investigations are helpful in answering questions about social ties and about the impact of the internet on these ties. You will also learn about the challenges that researchers confront. By the chapter's end, you should know what is "scientific" in social science and appreciate how the methods of science can help us understand the problems of society.

LEARNING ABOUT THE SOCIAL WORLD

We can get a sense of how social scientists investigate the social world by reviewing some questions that social researchers have asked about the internet and social ties.

1. What percentage of Americans are connected to the internet?

That's a pretty simple question, with a straightforward answer. Surveys in the United States have found that internet use in the United States has risen rapidly from 52% of U.S. adults in 2000 to 95% in 2023 (Sidoti 2024). Usage rates are now similar in other high-income countries (Internet World Stats 2024).

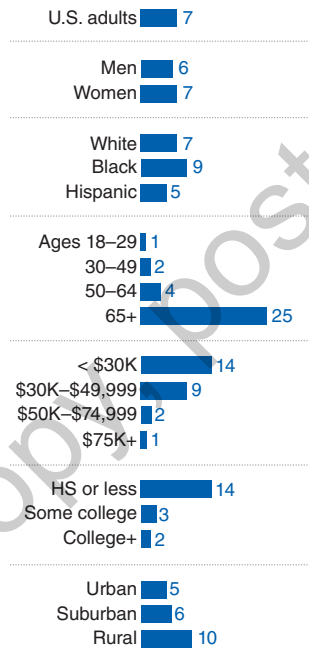
2. How does internet use vary across social groups?

Internet use is quite high in the United States, but whereas the percentage of U.S. adults who were *not* online (to flip the question) in 2021 (7% overall) was similar between men and women and differed only a bit by race, it varied markedly by age—from a low of 1% of those aged 18–29 to a high of 25% among those 65 or older. Internet use also varied by income, education, and location, with those in the lowest income and educational groups least likely to be online (Perrin and Atske 2021; see Figure 1.1). How much variation have you observed across people with these different characteristics?

FIGURE 1.1 ■ Percentage of Individuals Not Using Internet, by Personal Characteristics

Who's not online?

% of U.S. adults who say they do not use the internet



Note: White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race. Respondents who did not give an answer are not shown.

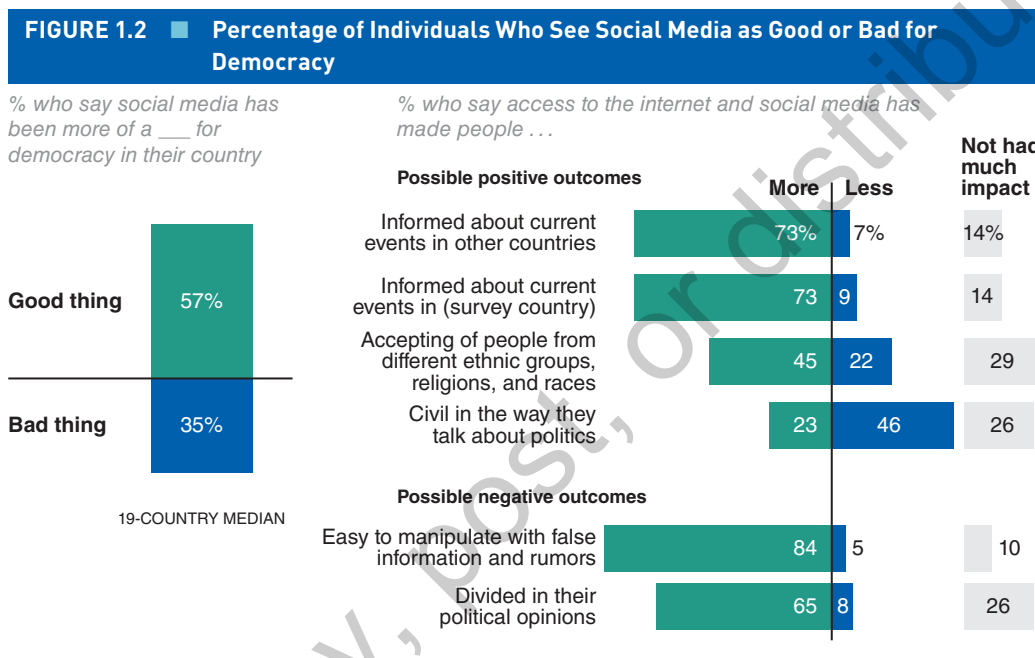
Source: Survey of U.S. adults conducted Jan. 25–Feb. 8, 2021.

Source: Perrin, Andrew, and Sara Atske. 2021, April 2. *7% of Americans don't use the internet. Who are they?* Pew Research Center. From <https://www.pewresearch.org/fact-tank/2021/04/02/7-of-americans-dont-use-the-internet-who-are-they/> (accessed February 8, 2024).

3. Does social media on the internet have a positive impact on the social world?

This kind of question is harder to address, but it seems the best answer is that it's a mixed bag. Across 19 high-income countries, 57% said that social media has been

more of a good thing for democracy in their country, while 35% said it has been more of a bad thing. Those in the United States had the most negative views: 64% said social media has been a bad thing for democracy (see Figure 1.2). Focusing on more specific outcomes, 75% said the internet and social media have made people more informed about current events, but only 45% said it has made people more accepting of different ethnic groups, religions, and races, while 65% said it has divided people more in their political opinions and 84% said it has made it easier to manipulate people with false information and rumors (Wike et al. 2022: 4–5).



Source: Wike, Richard, Laura Silver, Janell Fetterolf, Christine Huang, Sarah Austin, Laura Clancy, and Sneha Gubbala. 2022, December 6. *Social media seen as mostly good for democracy across many nations, but U.S. is a major outlier*. Pew Research Center. From <https://www.pewresearch.org/global/2022/12/06/social-media-seen-as-mostly-good-for-democracy-across-many-nations-but-u-s-is-a-major-outlier/> (accessed February 8, 2024).

4. Does social contact over the internet provide the same mental health benefits as in-person social contact?

Israeli researchers Howard Litwin and Michal Levinsky (2022) sought to answer this question with data from the ongoing Survey of Health, Ageing and Retirement in Europe (SHARE). The survey was conducted in the summer of 2020 and focused on social networks and mental health among persons 50 years or older in the early months of the COVID-19 pandemic. They found that people who had more in-person social contact were less likely to become more depressed or anxious in the early months of the pandemic, while anxiety levels tended to increase among those who had more internet-based social contact.

The more that you begin to think like a social scientist, the more often questions like these four will come to mind, and the more likely you will be to seek the results of social science research before you answer them. You will also find yourself asking harder questions

about the social science evidence you find. How confident can you be that the survey questions were understood, that the people who responded to the survey were like those who didn't, or that the conclusion that in-person social contact was beneficial was right? You will learn how to evaluate carefully the strengths and weaknesses of any research project, and that's a good thing!

We think you'll also come to understand why social science research methods can produce more trustworthy results than the everyday reasoning we all rely on so much of the time. When we reason about the social world without the foundation of systematic research, prior experiences and orientations can have a major influence on what we perceive and how we interpret these perceptions. As a result, one person may think that posting messages on Facebook is what's wrong with modern society, but another person may see the same action as helping people get connected. We need to move beyond first impressions and gut reactions to more systematic methods of investigation. That's what social research does.

People misunderstand society and social life for various reasons. It's easy to do, particularly when we are analyzing the world in which we are self-interested participants. We can call some of these mistakes *everyday errors*, because they occur so frequently in the nonscientific, unreflective conversations that we hear on a daily basis.

Consider the case of two timid cats. This comes from a letter sent to Ann Landers, a popular newspaper advice columnist, some years ago. See if you can spot the everyday errors here: The letter was written by a woman who had just moved, with her two pet cats, from an apartment in the city to a house in the country. In the city, she had not let the cats go outside, but she felt guilty about keeping them locked up. Upon arrival at the country house, she opened the door to let the cats outside. The cats tiptoed cautiously to the door, looked outside, then went right back into the living room and lay down!

The woman concluded that people shouldn't feel guilty about keeping cats indoors, because even when cats have the chance, they don't really want to play outside.

Can you spot the woman's errors in reasoning?

- *Overgeneralization*—She observed only two cats, both of which were previously confined indoors. Maybe they aren't like most cats.
- *Selective or inaccurate observation*—She observed the cats at the outside door only once. But maybe if she let them out several times, they would become more comfortable with going out.
- *Illogical reasoning*—She assumed that other people feel guilty about keeping their cats indoors. But maybe they don't.
- *Resistance to change*—She was quick to conclude that she had no need to change her approach to the cats. But maybe she just didn't want to change her own routines and was eager to believe that she was managing her cats just fine already.

You don't have to be a scientist or use sophisticated research techniques to avoid these four errors in reasoning. If you recognize and make a conscious effort to avoid them, you can improve your own reasoning. Along the way, you also will be heeding advice you probably heard from your parents (minister, teacher, adviser) not to stereotype people, to avoid jumping to conclusions, and to look at the big picture. These are all roughly the kinds of mistakes that the methods of social science systematically help us to avoid.

Let's look at each kind of error in turn.

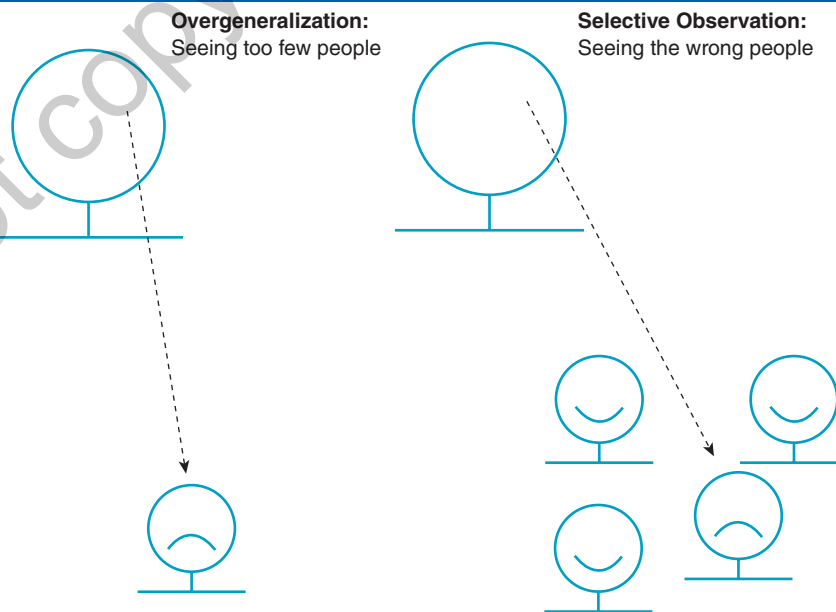
Overgeneralization

Overgeneralization occurs when we unjustifiably conclude that what is true for some cases is true for all cases. We are always drawing conclusions about people and social processes from our own interactions with them, but sometimes we forget that our experiences are limited. The social (and natural) world is, after all, a complex place. Maybe someone made a wisecrack about the ugly shoes you're wearing today, but that doesn't mean that everyone is talking about you. Or there may have been two drunk-driving accidents following fraternity parties this year, but by itself, this doesn't mean that all fraternity brothers are drunk drivers. Or maybe you had a boring teacher in your high school chemistry class, but that doesn't mean all chemistry teachers are boring. We can interact with only a small fraction of the individuals who inhabit the social world, especially in a limited span of time; rarely are they completely typical people. One heavy internet user found that his online friendships were "much deeper and have better quality" than his other friendships (Parks and Floyd 1996). Would his experiences generalize to yours? To those of others?

Selective or Inaccurate Observation

We also have to avoid **selective** or **inaccurate observation**—choosing to look only at things that are in line with our preferences or beliefs. When we dislike individuals or institutions, it is all too easy to notice their every failing. For example, if we are convinced that heavy internet users are antisocial, we can find many confirming instances. But what about older people who serve as internet pen pals for grade school children or therapists who deliver online counseling? If we acknowledge only the instances that confirm our predispositions, we are victims of our own selective observation. Figure 1.3 depicts the difference between selective observation and overgeneralization.

FIGURE 1.3 ■ Overgeneralization vs. Selective Observation: "Everybody's Unhappy!"



Our observations can also simply be inaccurate. When you were in high school, maybe your mother complained that you were “always” staying out late with your friends. Perhaps that was inaccurate; perhaps you stayed out late only occasionally. And when you complained that she “yelled” at you, even though her voice never actually increased in volume, that, too, was an inaccurate observation. In social science, we try to be more precise than that.

Such errors often occur in casual conversation and in everyday observation of the world around us. What we think we have seen is not necessarily what we really have seen (or heard, smelled, felt, or tasted). Even when our senses are functioning fully, our minds have to interpret what we have sensed (Humphrey 1992). The optical illusion in Figure 1.4, which can be viewed as either two faces or a vase, should help you realize that even simple visual perception requires interpretation.

FIGURE 1.4 ■ An Optical Illusion



Illogical Reasoning

When we prematurely jump to conclusions or argue on the basis of invalid assumptions, we are using **illogical reasoning**. For example, we might think that people who don't have many social ties just aren't friendly, even if we know they have just moved into a community and started a new job. Obviously, that's not logical. Conversely, an unquestioned assumption that everyone seeks social ties or benefits from them overlooks some important considerations, such as the impact of childhood difficulties on social trust and the exclusionary character of many tightly knit social groups. Logic that seems impeccable to one person can seem twisted to another—but people having different assumptions, rather than just failing to “think straight,” usually causes the problem.

Resistance to Change

Resistance to change, the reluctance to change our ideas in light of new information, is a common problem. After all, we know how tempting it is to make statements that conform to our own needs rather than to the observable facts (“I can't live on that salary!”). It can also

be difficult to admit that we were wrong once we have staked out a position on an issue (“I don’t want to discuss this anymore”). Excessive devotion to tradition can stifle adaptation to changing circumstances (“This is how we’ve always done it; that’s why”). People often accept the recommendations of those in positions of authority without question (“Only the president has all the facts”). In all of these ways, we often close our eyes to what’s actually happening in the world.

THE SOCIAL SCIENCE APPROACH

Can social science do any better? Can we see the social world more clearly if we use the methods of social science? **Science** relies on logical and systematic methods to answer questions, and it does so in a way that allows others to inspect and evaluate its methods. So social scientists develop, refine, apply, and report their understanding of the social world more systematically, or “scientifically,” than the general public does.

- **Social science** research methods reduce the likelihood of overgeneralization by using systematic procedures for selecting individuals or groups to study so that the study subjects are representative of the individuals or groups to which we want to generalize.
- Social science methods can reduce the risk of selective or inaccurate observation by requiring that we measure and sample phenomena systematically.
- To avoid illogical reasoning, social researchers use explicit criteria for identifying causes and for determining whether these criteria are met in a particular instance.
- Scientific methods lessen the tendency to answer questions about the social world from ego-based commitments, excessive devotion to tradition, or unquestioning respect for authority. Social scientists insist, “Show us the evidence!”

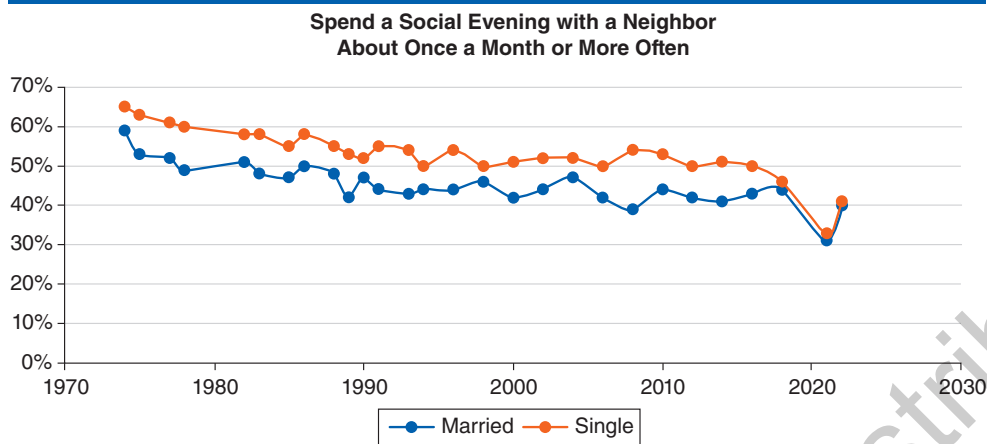
Types of Social Research

Although all social science research seeks to minimize errors in reasoning, different projects may have different goals. The four most important goals of social research are (1) description, (2) exploration, (3) explanation, and (4) evaluation. Let’s look at examples of each.

Description: How Often Do Americans “Neighbor”?

The biennial General Social Survey (GSS, which was annual from 1972 to 1994) investigates a wide range of characteristics, attitudes, and behaviors. Every other year, more than 2,000 adults in the United States complete the GSS by phone; many questions are repeated over time so that trends can be identified. Robert Putnam (2000) often used GSS data in his famous *Bowling Alone* investigation of social ties in America.

Survey responses indicated that “neighboring” declined throughout this period. Using GSS data updated since Putnam’s book with results from the 2022 survey, Figure 1.5 shows the percentage of GSS respondents who reported spending a social evening with a neighbor at least once a month for married people from a high of 59% in 1974 to 40% in 2022, while the

FIGURE 1.5 ■ The Decline of Neighboring 1974–1998

corresponding change for single people was from 65% to 41%. Figure 1.5 also shows the dramatic decline in such neighborhood socializing during the pandemic period and the rebound by 2022. This is **descriptive research** because the findings simply describe differences or variations in social phenomena.

Exploration: How Do Athletic Teams Build Player Loyalty?

Organizations such as combat units, surgical teams, and athletic teams must develop intense organizational loyalty among participants if organizations are to maximize their performance. How do they do it? This question motivated Patricia and Peter Adler (2000) to study college athletics. They wanted to explore this topic without preconceptions or fixed hypotheses. So Peter Adler joined his college basketball team as a “team sociologist,” while Patti participated in some team activities as his wife and as a professor at the school. They recorded observations and comments at the end of each day for a period of 5 years. They also interviewed at length the coaches and all 38 basketball team members during that period.

Careful and systematic review of their notes led Adler and Adler (2000) to conclude that intense organizational loyalty emerged from five processes: (1) domination, (2) identification, (3) commitment, (4) integration, and (5) goal alignment. We won’t review each of these processes here, but the following quote indicates how one player found the process of integration into a cohesive group had occurred:

By the time the three months were over [the summer before they started classes] I felt like I was there a year already. I felt so connected to the guys. You’ve played with them, it’s been 130 degrees in the gym, you’ve elbowed each other, knocked each other around. Now you’ve felt a relationship, it’s a team, a brotherhood type of thing. Everybody’s got to eat the same rotten food, go through the same thing, and all you have is each other. So you’ve got a shared bond, a camaraderie. It’s a whole houseful of brothers. And that’s home to everybody in the dorm, not your parents’ house. (p. 43)

Participating in and observing the team over this long period enabled Adler and Adler (2000) to identify and to distinguish particular aspects of such loyalty-building processes, such as identifying three modes of integration into the group: (1) unification in opposition to others, (2) development of group solidarity, and (3) sponsorship by older players. Adler and Adler also identified negative consequences of failures in group loyalty, such as the emergence of an atmosphere of jealousy and mistrust, and the disruption of group cohesion, as when one team member focused only on maximizing his own scoring statistics.

In this project, Adler and Adler did more than simply describe what people did—they tried to explore the different elements of organizational loyalty and the processes by which loyalty was built. **Exploratory research** seeks to find out how people get along in the setting under question, what meanings they give to their actions, and what issues concern them. You might say the goal is to learn “what’s going on here?”

Explanation: Does Social Context Influence Adolescent Outcomes?

Often, social scientists want to explain social phenomena, usually by identifying causes and effects. Bruce Rankin at Koç University in Turkey and James Quane at Harvard University (Rankin and Quane 2002) analyzed data collected in a large survey of African American mothers and their adolescent children to test the effect of social context on adolescent outcomes. The source of data was a study funded by the MacArthur Foundation, Youth Achievement and the Structure of Inner City Communities, in which face-to-face interviews were conducted with more than 636 youth living in 62 poor and mixed-income urban Chicago neighborhoods.

Explanatory research like this seeks to identify causes and effects of social phenomena and to predict how one phenomenon will change or vary in response to variation in another phenomenon. Rankin and Quane (2002) were most concerned with determining the relative importance of three different aspects of social context—neighborhoods, families, and peers—on adolescent outcomes (both positive and negative). To make this determination, they had to conduct their analysis in a way that allowed them to separate the effects of neighborhood characteristics, such as residential stability and economic disadvantage, from parental involvement in child-rearing and other family features, as well as from peer influence. They found that neighborhood characteristics affect youth outcomes primarily by influencing the extent of parental monitoring and the quality of peer groups.

RESEARCH IN THE NEWS

QuitToks: Young Workers Are Quitting Their Jobs and Documenting It in on Social Media

Why are young workers posting social media videos (e.g., QuitToks) of themselves quitting their jobs? Young workers feel their pay (often minimum wage) does not justify putting up with poor working conditions. Posting QuitToks and other videos provides young workers with a sense of power in the face of disempowering work environments. Ann Swidler, a sociology professor at the University of California at Berkeley, explains the phenomenon of QuitToks as “a breakdown of the social contract that if you work hard and play by the rules, the American dream is still there for you.”

For Further Thought

1. Do you think QuitToks would be less popular if young workers were paid more? Why or why not?
2. Is there a possibility a researcher could overgeneralize what young workers' jobs are like based on watching QuitToks? Explain your reasoning.

News source: Pogash, Carol. 2023, March 9. The satisfaction of viral quitting. *The New York Times*. From <https://www.nytimes.com/2023/03/09/business/quitting-videos-viral-tiktok-youtube.html> [accessed February 8, 2024].

Evaluation: Does More Social Capital Result in More Community Participation?

The “It’s Our Neighbourhood’s Turn” project (Onze Buurt aan Zet, or OBAZ) in the city of Enschede, the Netherlands, was one of a series of projects initiated by the Dutch Ministry of the Interior and Kingdom Relations to increase the quality of life and safety of individuals in the most deprived neighborhoods in the Netherlands. In the fall of 2001, residents in three of the city’s poorest neighborhoods were informed that their communities had received funds to use for community improvement and that residents had to be actively involved in formulating and implementing the improvement plans (Lelieveldt 2003: 1). Political scientist Herman Lelieveldt (2004: 537) at the University of Twente, the Netherlands, and others then surveyed community residents to learn about their social relations and their level of local political participation; a second survey was conducted 1 year after the project began.

Lelieveldt wanted to evaluate the impact of the OBAZ project—to see whether the “livability and safety of the neighborhood” could be improved by taking steps like those Putnam (2000: 408) recommended to increase “social capital,” meaning that citizens would spend more time connecting with their neighbors.

It turned out that residents who had higher levels of social capital participated more in community political processes. However, not every form of social capital made much of a difference. Neighborliness—the extent to which citizens are engaged in networks with their neighbors—was an important predictor of political participation, as was a feeling of obligation to participate. By contrast, a sense of trust in others (something that Putnam emphasizes) was not consistently important (Lelieveldt 2004: 535, 547–548): Those who got more involved in the OBAZ political process tended to distrust their neighbors. When researchers focus their attention on social programs such as the OBAZ project, they are conducting **evaluation research**—research that describes or identifies the impact of social policies and programs.

Certainly many research studies have more than one such goal—all studies include some description, for instance. But clarifying your primary goal can often help when deciding how to do your research.

HOW WELL HAVE WE DONE OUR RESEARCH?

Social scientists want validity in their research findings—they want to find the truth. The goal of social science is not to reach conclusions that other people will like or that suit our personal preferences. We shouldn’t start our research determined to “prove” that our college’s writing program is successful, or that women are portrayed unfairly in advertisements, or that the last presidential election was rigged, or that people experiencing homelessness are badly treated. We may learn that all of these are true, or aren’t, but our goal as social scientists should be to learn the

truth, even if it's sometimes disagreeable to us. The goal is to figure out how and why some part of the social world operates as it does and to reach valid conclusions. We reach the goal of **validity** when our statements or conclusions about empirical reality are correct. Many social scientists are also concerned with achieving **authenticity** in their research. In *Making Sense of the Social World: Methods of Investigation*, we will be concerned with three kinds of validity: (1) measurement validity, (2) generalizability, and (3) causal validity (also known as internal validity). We will learn that invalid measures, invalid generalizations, or invalid causal inferences result in invalid conclusions. We will also consider the importance of authenticity as a goal in qualitative research.

Measurement Validity

Measurement validity is our first concern because without having measured what we think we've measured, we don't even know what we're talking about. So when Putnam (2000: 291) introduces a measure of "social capital" that has such components as number of club meetings attended and number of times worked on a community project, we have to stop and consider the validity of this measure. Measurement validity is the focus of Chapter 4.

Problems with measurement validity can occur for many reasons. In studies of internet forums, for instance, researchers have found that some participants use fictitious identities, even pretending to be a different gender (men posing as women, for instance; Donath 1999). Therefore, it's difficult to measure gender in these forums, and researchers could not rely on gender as disclosed in the forums when identifying differences in usage patterns between men and women. Similarly, if you ask people, "Are you an alcoholic?" they probably won't say yes, even if they are; the question elicits less valid information than would be forthcoming by asking them how many drinks they consume, on average, each day. Some college students may be hesitant to admit they binge-watch *The Walking Dead* on YouTube 6 hours a day, so researchers use internet records to measure what programs people watch and how often.

Generalizability

The **generalizability** of a study is the extent to which it can inform us about persons, places, or events that were not directly studied. For instance, if we ask our favorite students how much they enjoyed our Research Methods course, can we assume that other students (perhaps not as favored) would give the same answers? Maybe they would, but probably not. Achieving generalizability through correct sampling is the focus of Chapter 5.

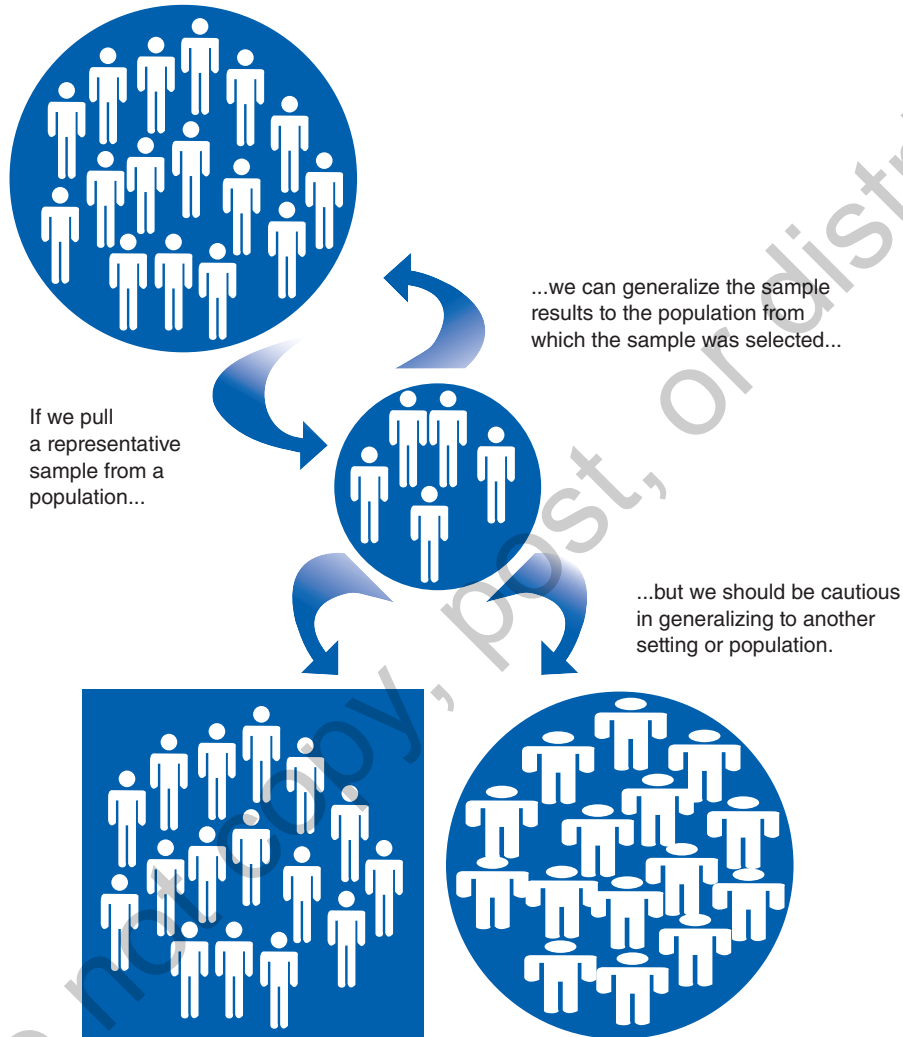
Generalizability is always an important consideration when you review social science research. Even the huge, international National Geographic Society (2000) survey of internet users had some limitations in generalizability. Only certain people were included in the sample: people who were connected to the internet, who had heard about the survey, and who actually chose to participate. This meant that many more respondents came from wealthier countries, which had higher rates of computer and internet use, than from poorer countries. However, the inclusion of individuals from 178 countries and territories does allow some interesting comparisons among countries.

There are two kinds of generalizability: sample and cross-population.

Sample generalizability is a key concern in survey research. Political polls, such as the Gallup Poll or Zogby International, may study a sample of 1,400 likely voters, for example, and then generalize the findings to the entire American population of 120 million likely voters. No one would be interested in the results of political polls if they represented only the tiny sample that actually was surveyed rather than the entire population.

Cross-population generalizability occurs to the extent that the results of a study hold true for multiple populations; these populations may not all have been sampled, or they may be represented as subgroups within the sample studied (see Figure 1.6). We can only wonder about the cross-population generalizability of Putnam’s findings about social ties in the United States. Has the same decline occurred in Mexico, Argentina, Britain, or Thailand?

FIGURE 1.6 ■ Sample and Cross-Population Generalizability



Causal Validity

Causal validity, also known as **internal validity**, refers to the truthfulness of an assertion that A causes B. It is the focus of Chapter 6.

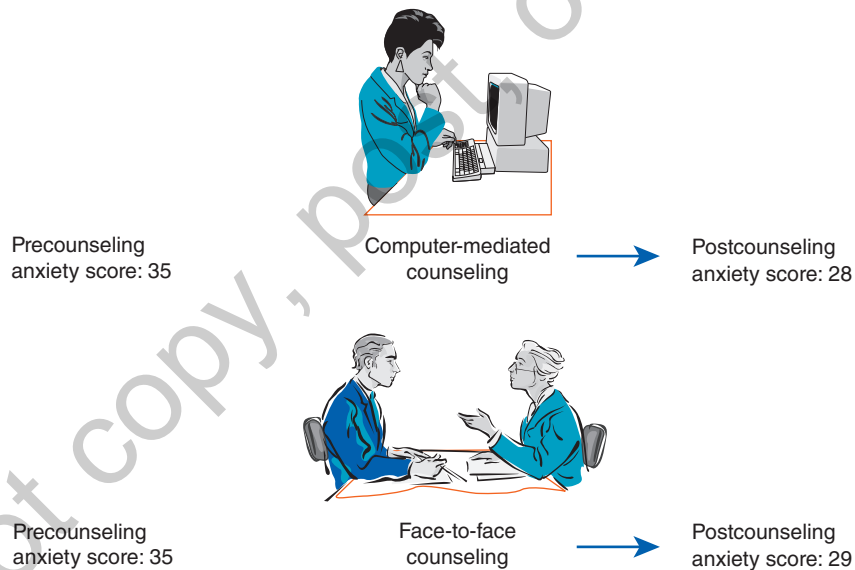
Most research seeks to determine what causes what, so social scientists frequently must be concerned with causal validity. For example, Gary Cohen and Barbara Kerr (1998) asked whether computer-mediated counseling could be as effective as face-to-face counseling for mental health problems—that is, whether one type of counseling leads to better results than the other. Cohen and Kerr could have compared people who had voluntarily experienced one of

these types of treatment, but it's quite likely that individuals who sought out a live person for counseling would differ, in important ways, from those who sought computer-mediated counseling. Younger people tend to use computers more; so do more educated people. Or maybe less sociable people would be more drawn to computer-mediated counseling. Normally, it would be hard to tell if different results from the two therapies were caused by the therapies themselves or by different kinds of people going to each.

So Cohen and Kerr (1998) designed an experiment in which students seeking counseling were assigned randomly (by a procedure somewhat like flipping a coin) to either computer-mediated or face-to-face counseling. In effect, people going to one kind of counseling were just like people going to the other; as it happens, their anxiety scores afterward were roughly the same. There seemed to be no difference (see Figure 1.7). By using the random assignment procedure, Cohen and Kerr strengthened the causal validity of this conclusion.

FIGURE 1.7 ■ Partial Evidence of Causality

Precounseling Anxiety Score	Type of Counseling	Postcounseling Anxiety Score
35	Computer-mediated	28
35	Face-to-face	29



Conversely, even in properly randomized experiments, causal findings can be mistaken because of some factor that was not recognized during planning for the study. If the computer-mediated counseling sessions were conducted in a modern building with all the latest amenities, but face-to-face counseling was delivered in a run-down building, this difference might have led to different outcomes for reasons quite apart from the type of counseling. Also, Cohen and Kerr (1998) didn't have a group that received no counseling. Maybe just a little quiet time or getting older would provide the same benefits as therapy.

So establishing causal validity can be quite difficult. In subsequent chapters, you will learn in more detail how experimental designs and statistics can help us evaluate causal propositions, but the solutions are neither easy nor perfect. We always have to consider critically the validity of causal statements that we hear or read.

Authenticity

The goal of authenticity is stressed by researchers who focus attention on the subjective dimension of the social world. An authentic understanding of a social process or social setting is one that reflects fairly the various perspectives of participants in that setting (Gubrium and Holstein 1997). Authenticity is one of several different standards proposed by some observers as uniquely suited to qualitative research; it reflects a belief that those who study the social world should focus first and foremost on how participants view that social world, rather than on developing a unique social scientists' interpretation of that world. Rather than expecting social scientists to be able to provide a valid mirror of reality, this perspective emphasizes the need for recognizing that what is understood by participants as reality is a linguistic and social construction of reality (Kvale 2002: 306).

Angela M. Moe (2007) explained her basis for considering the responses of women she interviewed in a domestic violence shelter to be authentic:

Members of marginalized groups are better positioned than members of socially dominant groups to describe the ways in which the world is organized according to the oppressions they experience. (p. 682)

Moe's (2007) assumption was that "battered women serve as experts of their own lives" (p. 682). Adding to her assessment of authenticity, Moe found that the women "exhibited a great deal of comfort through their honesty and candor" as they produced "a richly detailed and descriptive set of narratives" (p. 683). You will learn more about how authenticity can be achieved in qualitative methods in Chapters 9 and 10.

CONCLUSION

This first chapter should have given you an idea of what to expect in the rest of the book. Social science provides us with a variety of methods for avoiding everyday errors in reasoning and for coming to valid conclusions about the social world. We will explore different kinds of research, using different techniques, in the chapters to come, always asking, is this answer likely to be correct? The techniques are fairly simple, but they are powerful nonetheless if properly executed. You will also learn some interesting facts about social life. We have already seen, for instance, some evidence of the following:

- The internet and social media may have surprising effects on our relationships with others.
- Organizational processes that build loyalty, as happens on athletic teams, can strengthen social ties.
- Neighborhoods in which social ties are weaker may result in less effective forms of parenting, but both parenting and peer group quality have stronger effects than neighborhood social ties on adolescent outcomes.
- Government programs to increase social capital in neighborhoods can increase local political participation.
- Students may benefit as much from computer-mediated counseling as from face-to-face counseling.

Remember, you must ask a direct question of each research project you examine: How valid are its conclusions? The theme of validity ties the chapters in this book together. Each technique

will be evaluated for its ability to help us with measurement validity, generalizability, and causal validity.

To illustrate the process of doing research, in Chapter 2, we describe studies of domestic violence, community disaster, student experience of college, and other topics. We review the types of research questions that social scientists ask, the role of theory, the major steps in the research process, and other sources of information that may be used in social research. In Chapter 3, we set out the general principles of ethical research that social scientists try to follow. Examples of ethical challenges to good research will be presented in many of the following chapters as well.

Then, in Chapters 4, 5, and 6, we return to the subject of validity—the three kinds of validity and the specific techniques used to maximize the validity of our measures, our generalizations from a sample, and our causal assertions. Chapter 6 also introduces experimental studies, one of the best methods for establishing causal relationships.

Other methods of data collection and analysis are introduced in Chapters 7, 8, 9, and 10. Survey research is the most common method of data collection in sociology, and in Chapter 7, we devote attention to the different types of surveys. Chapter 8 is not a substitute for an entire course in statistics, but it gives you a good idea of how to use statistics honestly in reporting the results of your own studies using quantitative methods, in interpreting the results of research reported by others, and in analyzing secondary data sources. Chapter 9 shows how qualitative methods such as participant observation, intensive interviewing, and focus groups can uncover aspects of the social world that we are likely to miss in experiments and surveys, and Chapter 10, on qualitative data analysis, illustrates several approaches that researchers can take to the analysis of the data they collect in qualitative projects. Both Chapters 9 and 10 emphasize the importance of authenticity.

Chapter 11 introduces a range of unobtrusive measures that aren't experienced by the people being studied; these include historical and comparative methods, content analysis, and a variety of creative techniques. Chapter 12 explains the role of evaluation research in investigating social programs and how to design evaluation research studies. Finally, Chapter 13 focuses on how to review prior research, how to propose new research, and how to report original research. We give special attention to how to formulate research proposals and how to critique, or evaluate, reports of research that you encounter.

Throughout these chapters, we will try to make the ideas interesting and useful to you, both as a consumer of research (e.g., as reported in newspapers) and as a potential producer (if, say, you do a survey in your college, neighborhood, or business). Each chapter ends with several helpful learning tools. Lists of key terms and chapter highlights will help you review, and exercises will help you apply your knowledge. Social research isn't rocket science, but it does take some clear thinking, and these exercises should give you a chance to practice.

Here is a closing thought: Vince Lombardi, legendary coach of the Green Bay Packers of the National Football League during the 1960s, used to say that championship football was basically a matter of “four yards and a cloud of dust.” Nothing too fancy, no razzle-dazzle plays, no phenomenally talented players doing it all alone—just solid, hardworking, straight-ahead fundamentals. This may sound strange, but excellent social research can be done—can “win games”—in the same way. We'll show you how to design and conduct surveys that get the right answers, interviews that discover people's true feelings, and experiments that pinpoint what causes what. And we'll show you how to avoid getting taken in by every “Studies Show . . . We're Committing More Crimes!” article you read on the internet. It takes a little effort initially, but we think you will find it worthwhile and even enjoyable.

KEY TERMS

Authenticity	Illogical reasoning
Causal validity (internal validity)	Measurement validity
Cross-population generalizability (external validity)	Overgeneralization
Descriptive research	Resistance to change
Evaluation research	Sample generalizability
Explanatory research	Science
Exploratory research	Selective (inaccurate) observation
Generalizability	Social science
	Validity

HIGHLIGHTS

LO 1.1 Formulate examples of the four common errors in everyday reasoning

We can avoid making errors in four processes involved in learning about the social world the following ways:

- Observing—not participating in selective observation (choosing to look only at things that are in line with our preferences or beliefs) or inaccurate observation (an observation based on faulty perceptions of empirical reality)
- Generalizing—avoiding overgeneralization (when we unjustifiably conclude that what is true for some cases is true for all cases)
- Reasoning—steering clear of illogical reasoning (when we prematurely jump to conclusions or argue based on invalid assumptions)
- Reevaluating—abstaining from resistance to change (the reluctance to change our ideas in response to new information) perhaps related to ego-based commitments, excessive devotion to tradition, and uncritical agreement with authority

These errors result from the complexity of the social world, subjective processes that affect the reasoning of researchers and those they study, researchers' self-interestedness, and unquestioning acceptance of tradition or of those in positions of authority.

The scientific approach involves investigating phenomena in the world by testing ideas about them with observations—empirical data—of those phenomena.

- Science uses logical, systematic, documented methods.
- Science investigates nature and natural processes.
- Science is the knowledge produced by these investigations.
- Science is an ongoing, cumulative process.

LO 1.2 Compare the four types of social research

Social research can be descriptive, exploratory, explanatory, or evaluative—or some combination of these.

- Descriptive research—research in which social phenomena are defined and described
- Exploratory research—research that seeks to find out how people get along in the setting under question, what meanings they give to their actions, and what issues concern them

- Explanatory research—research that seeks to identify causes and effects of social phenomena and to predict how one phenomenon will change or vary in response to variation in some other phenomenon
- Evaluation research—research that describes or identifies the impact of social policies and programs

LO 1.3 Argue for the primary importance of one of the components of validity

- Valid knowledge is the central concern of scientific research.
- Measurement validity exists when a measure measures the thing we think it measures.
- Generalizability can refer to the ability to generalize from a subset of a population (a sample) to the entire population. Cross-population generalizability (external validity) refers to the ability to apply findings about one population to other populations.
- Causal (internal) validity refers to the truthfulness of an assertion that A causes B.
- Authenticity involves reflecting fairly the various perspectives of participants in a setting.
- Qualitative researchers may emphasize the goal of authenticity.
- The preference for the goal of authenticity reflects a concern with subjective meanings.

DISCUSSION QUESTIONS

1. Select a social issue that interests you, such as internet use or crime. List at least four of your beliefs about this phenomenon. Try to identify the sources of each of these beliefs.
2. Does the academic motivation to do the best possible job of understanding how the social world works conflict with policy or personal motivations? How could personal experiences with social isolation or with internet use shape research motivations? In what ways might the goal of influencing policy about social relations shape how a researcher approaches this issue?
3. Pick a contemporary social issue of interest to you. List descriptive, exploratory, explanatory, and evaluative questions that you could investigate about this issue.
4. Review each of the three sets of research alternatives. Which alternatives are most appealing to you? Which combination of alternatives makes the most sense to you (one possibility, for example, is quantitative research with a basic science orientation)? Discuss the possible bases of your research preferences relative to your academic interests, personal experiences, and policy orientations.
5. The chapter began with a brief description of research on social media and internet use. What would you do if you were interviewing college students who spent lots of time online and found that some were very isolated and depressed or even suicidal, apparently as a result of the isolation? Do you believe that social researchers have an obligation to take action in a situation like this? What if you discovered a similar problem with a child? What guidelines would you suggest for researchers?
6. Would you encourage social researchers to announce their findings about problems such as social isolation in press conferences and to encourage relevant agencies to adopt

policies encouraged to lessen social isolation? Should policies regarding attempts to garner publicity and shape policy depend on the strength of the research evidence? Do you think there is a fundamental conflict between academic and policy motivations? Do social researchers have an ethical obligation to recommend policies that their research suggests would help other people?

EXERCISES

1. Read the abstracts (initial summaries) of each article in a recent issue of a major social science journal. (Ask your instructor for some good journal titles.) On the basis of the abstract only, classify each research project represented in the articles as primarily descriptive, exploratory, explanatory, or evaluative. Note any indications that the research focused on other types of research questions.
2. From the news, record statements of politicians or other leaders about some social phenomenon. Which statements do you think are likely to be in error? What evidence could the speakers provide to demonstrate the validity of these statements?
3. What topic would you focus on if you could design a social research project without any concern for costs? What are your motives for studying this topic?
4. Develop four questions that you might investigate about the topic you just selected. Each question should reflect a different research goal: description, exploration, explanation, or evaluation. Be specific. Which question most interests you? Why?

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2

THE PROCESS AND PROBLEMS OF SOCIAL RESEARCH

LEARNING OBJECTIVES

Upon completion of this chapter, the reader should be able to

- 2.1 Formulate a social research question that is feasible, socially important, and scientifically relevant
- 2.2 Discuss the role of theory in social research
- 2.3 Compare the strengths and weaknesses of using deductive and inductive research strategies
- 2.4 Compare cross-sectional research designs and the three types of longitudinal research design

In Chapter 1, we introduced the reasons *why* we do social research: to describe, explore, explain, and evaluate. Each type of social research can have tremendous impact. Alfred Kinsey's descriptive studies of the sex lives of Americans, conducted in the 1940s and 1950s, were at the time a shocking exposure of the wide variety of sexual practices that apparently staid, "normal" people engaged in behind closed doors, and the studies helped introduce the unprecedented sexual openness we see more than 75 years later (Kinsey, Pomeroy, and Martin 1948; Kinsey, Pomeroy, Martin, and Gebhard 1953). At around the same time, Gunnar Myrdal's exploratory book, *An American Dilemma* (1944/1964), forced our grandparents and great-grandparents to confront the tragedy of institutional racism. Myrdal's research was an important factor in the 1954 Supreme Court decision *Brown v. Board of Education of Topeka*, which ended de jure school segregation in the United States. The explanatory *broken windows* theory of crime, developed during the 1980s by George L. Kelling and James Q. Wilson (1982), dramatically changed police practices in our major cities. The theory's usefulness in reducing crime, and in fueling controversial "stop and frisk" programs, is hotly debated both in academic journals (Sampson and Raudenbusch 1999) and on the front pages of newspapers (Goldstein 2014). Evaluative social research actively influences advertising campaigns, federal housing programs, the organization of military units (from U.S. Army fire teams to U.S. Navy submarine crews), drug treatment programs, and corporate employee benefit plans.

We now introduce the *how* of social research. In this chapter, you will learn about the process of specifying a research question, developing an appropriate research strategy and design with which to investigate that question, and choosing appropriate units of analysis. By the chapter's end, you should be ready to formulate a question, to design a strategy for answering the question, and to begin to critique previous studies that addressed the question.

WHAT IS THE QUESTION?

A **social research question** is a question about the social world that you seek to answer through the collection and analysis of firsthand, verifiable, empirical data. Questions like this may emerge from your own experience, from research by other investigators, from social theory, or from a *request for research* issued by a government agency that needs a study of a particular problem.

Some researchers of the health care system, for example, have had personal experiences as patients with serious diseases, as nurses or aides working in hospitals, or as family members touched directly and importantly by doctors and hospitals. These researchers may want to learn

why our health care system failed or helped them. Feminist scholars study violence against women in hopes of finding solutions to this problem as part of a broader concern with improving women's lives. One colleague of ours, Veronica Tichenor (2005), was fascinated by a prominent theory of family relations that argues that men do less housework than women do because men earn more money; Professor Tichenor did research on couples in which the woman made far more money than the man to test the theory. (She found, by the way, that the women still did more of the housework.) Some researchers working for large corporations or major polling firms conduct marketing studies simply to make money. So, a wide variety of motives can push a researcher to ask research questions.

A good research question doesn't just spring effortlessly from a researcher's mind. You have to refine and evaluate possible research questions to find one that is worthwhile. It's a good idea to develop a list of possible research questions as you think about a research area. At the appropriate time, you can narrow your list to the most interesting and feasible candidate questions.

What makes a research question "good"? Many social scientists evaluate their research questions in terms of three criteria: *feasibility* given the time and resources available, *social importance*, and *scientific relevance* (King, Keohane, and Verba 1994):

- Can you start and finish an investigation of your research question with available resources and in the time allotted? If so, your research question is feasible.
- Will an answer to your research question make a difference in the social world, even if it only helps people understand a problem they consider important? If so, your research question is socially important.
- Does your research question help resolve some contradictory research findings or a puzzling issue in social theory? If so, your research question is scientifically relevant.

Here's a good example of a question that is feasible, socially important, and scientifically relevant: Does the imposition of fines and fees on criminal defendants increase the likelihood of additional criminal involvement? Although this may seem counterintuitive (shouldn't financial penalties deter future offending?), the fact is that most defendants are poor and so may not be able to pay these costs. In 2017, Devah Pager, Rebecca Goldstein, Helen Ho, and Bruce Western (2022) developed a research project to answer this question in a misdemeanor court in Oklahoma County, Oklahoma. The study was feasible as a result of funding provided by a private foundation and the National Science Foundation, and because the presiding judge, the district attorney, and the public defender agreed to host the study. The study was socially important because in recent decades fines and fees have proliferated in the criminal justice system—affecting about two-thirds of state prison inmates in 2004—and nonpayment can lead to incarceration in all but three states. The study was scientifically relevant because of the attention given in recent years to the "criminalization of poverty" theory. This theory expects that court-imposed fines and fees create economic financial hardships and stress that lead to more crime.

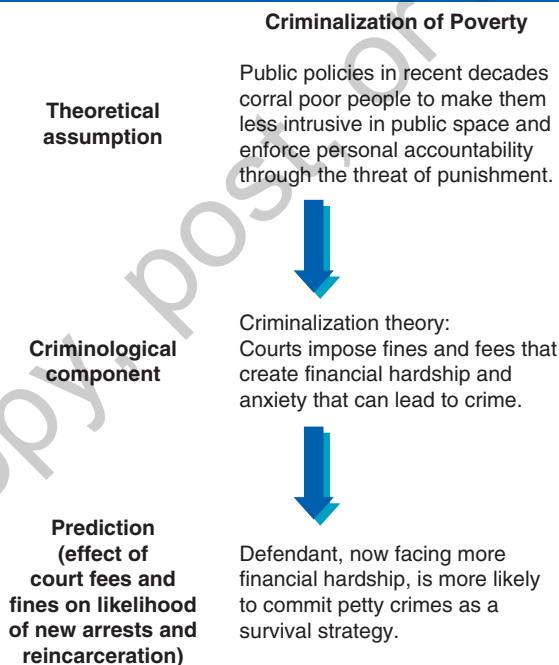
WHAT IS THE THEORY?

Theories have a special place in social research because they help us make connections to general social processes and large bodies of research. Building and evaluating theory is, therefore, one of the most important objectives of social science. A social **theory** is a logically interrelated set of propositions about empirical reality (i.e., the social world as it actually exists). You may know, for

instance, about conflict theory, which proposes that (1) people are basically self-interested, (2) power differences between people and groups reflect the different resources available to groups, (3) ideas (religion, political ideologies, etc.) reflect the power arrangements in a society, (4) violence is always a potential resource and the one that matters most, and so on (Collins 1975). These statements are related to each other, and the sum of conflict theory is a sizable collection of such statements (entire books are devoted to it). Dissonance theory in psychology, deterrence theory in criminology, and labeling theory in sociology are other examples of social theories.

Social theories suggest the areas on which we should focus and the propositions that we should consider testing. For example, Devah Pager and her coauthors (2022) drew on *criminalization of poverty* theory that suggests financial obligations imposed by the court on criminal defendants who are poor increase financial hardship and therefore the incentive for committing new crimes (see Figure 2.1). More generally, this theory views court-imposed fines and fees as a way institutions increase state surveillance and punishment of people who are socioeconomically disadvantaged.

FIGURE 2.1 ■ A Social Theory and Its Prediction About the Effect of Court Fees and Fines



Source: Based on Pager, Devah, Rebecca Goldstein, Helen Ho, and Bruce Western. 2022. Criminalizing poverty: The consequences of court fees in a randomized experiment. *American Sociological Review* 87(3): 529–553.

How do we find relevant social theory and prior research? You may already have encountered some of the relevant material in courses pertaining to research questions that interest you, but that won't be enough. The social science research community is large and active, and new research results appear continually in scholarly journals and books. The World Wide Web contains reports on some research even before it is published in journals (like some of the research reviewed in Chapter 1). Conducting a thorough literature review in library sources and checking for recent results on the Web are essential steps for evaluating scientific relevance.

When you consider research questions, you should first consult and then review the published literature. Your goal here and in subsequent stages of research should be to develop a research question and specific expectations that build on prior research and to use the experiences of prior researchers to chart the most productive directions and design the most appropriate methods. Appendix A describes how to search the literature and the Web, and Chapter 13 includes detailed advice for writing up the results of your search in a formal review of the relevant literature.

WHAT IS THE STRATEGY?

When conducting social research, we try to connect theory with empirical data—the evidence we obtain from the real world. Researchers may make this connection in one of two ways:

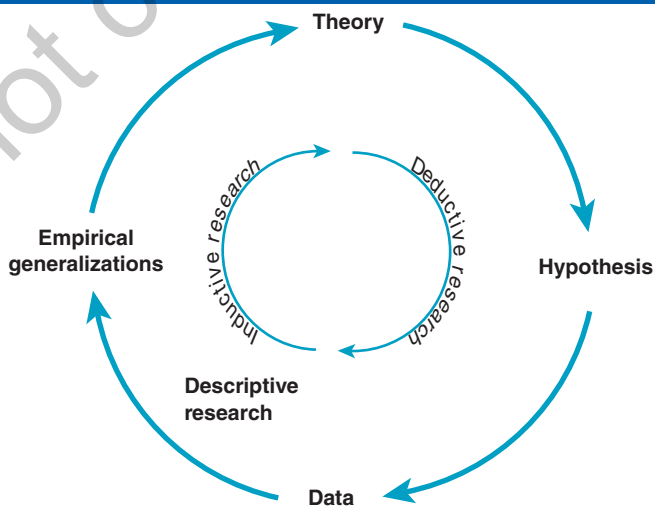
1. By starting with a social theory and then testing some of its implications with data. This is called **deductive research**; it is most often the strategy used in quantitative methods.
2. By collecting the data and then developing a theory that explains the data. This **inductive research** process is typically used with qualitative methods.

A research project can use both deductive and inductive strategies. Let's examine the two different strategies in more detail. We can represent both within what is called the **research circle**.

Deductive Research

In deductive research, we start with a theory and then try to find data that will confirm or deny it. Figure 2.2 shows how deductive research starts with a theoretical premise and logically *deduces* a specific expectation. Let's begin with an example of a theoretical idea: When people have emotional and personal connections with coworkers, they will be more committed to their work. We could extend this idea to college life by deducing that if students know their professors well, they will be more engaged in their work. And from this, we can deduce a more specific

FIGURE 2.2 ■ The Research Circle



expectation—or hypothesis—that smaller classes, which allow more student–faculty contact, will lead to higher levels of engagement. Now that we have a hypothesis, we can collect data on levels of engagement in small and large classes and compare them. We can’t always directly test the general theory, but we can test specific hypotheses that are deduced from it.

RESEARCH IN THE NEWS

Confounding Results: Gender Differences in Affect and Life Satisfaction

Recent survey research indicates that women feel depressed, lonely, anxious, downhearted, tense, frustrated, and sad and experience restless sleep more often than men, yet women report their level of happiness and overall life satisfaction as the same as or higher than men’s. David Blanchflower and Alex Bryson, the two researchers behind the survey, are not sure why this is, but have some hypotheses for future exploration.

For Further Thought

1. What is one possible hypothesis you have that could explain this confounding survey finding?
2. What type of research could help us gain a better understanding of why women report more negative feelings than men but a similar or higher level of happiness and general life satisfaction?

News source: Coy, Peter. 2023, May 12. The struggle to explain the “gender well-being gap.” *The New York Times*. From <https://www.nytimes.com/2023/05/12/opinion/gender-well-being-mothers-day.html> (accessed February 10, 2024).

A **hypothesis** states a relationship between two or more **variables**—characteristics or properties that can vary, or change. Classes can be large, like a 400-student introductory psychology course, or they can be small, like an upper-level seminar. Class size is thus a variable. And hours of homework done per week can also vary (obviously); you can do 2 hours or 20 hours. So, too, can engagement vary, as measured in any number of ways. (Nominal designations such as religion are variables, too, because they can vary among Protestant, Catholic, Jew, etc.)

But a hypothesis doesn’t just state that there is a connection between variables; it suggests that one variable actually influences another—that a change in the first one somehow propels (or predicts, influences, or causes) a change in the second. It says that *if* one thing happens, *then* another thing is likely: *If* you stay up too late, *then* you will be tired the next day. *If* you smoke cigarettes for many years, *then* you are more likely to develop heart disease or cancer. *If* a nation loses a major war, *then* its government is more likely to collapse. And so on.

So in a hypothesis, we suggest that one variable influences another—or that the second in some ways “depends” on the first. We may believe, again, that students’ reported enthusiasm for a class “depends” on the size of the class. Hence, we call enthusiasm the dependent variable—the variable that *depends* on another, at least partially, for its level. If cigarettes damage your health, then health is the dependent variable; if lost wars destabilize governments, then government stability is the dependent variable.

The predicted result in a hypothesis, then, is called the **dependent variable**. And the hypothesized cause is called the **independent variable** because in the stated hypothesis, it doesn't depend on any other variable. For instance, if we hypothesize that poverty leads to homelessness, then the poverty rate is the independent variable, and the homeless rate is the dependent variable.

These terms—*hypothesis*, *variable*, *independent variable*, and *dependent variable*—are used repeatedly in this book and are widely used in all fields of natural and social science, so they are worth knowing well!

You may have noticed that sometimes an increase in the independent variable leads to a corresponding increase in the dependent variable; in other cases, it leads to a decrease. An increase in your consumption of fatty foods will often lead to a corresponding increase in the cholesterol levels in your blood. But an increase in cigarette consumption leads to a decrease in health. In the first case, we say that the **direction of association** is positive; in the second, we say it is negative. Either way, you can clearly see that a change in one variable leads to a predictable change in the other.

In both explanatory and evaluative research, you should say clearly what you expect to find (your hypothesis) and design your research accordingly to test that hypothesis. Doing this strengthens the confidence we can place in the results. So the deductive researcher (to use a poker analogy) states their expectations in advance, shows their hand, and lets the chips fall where they may. The data are accepted as a fair picture of reality.

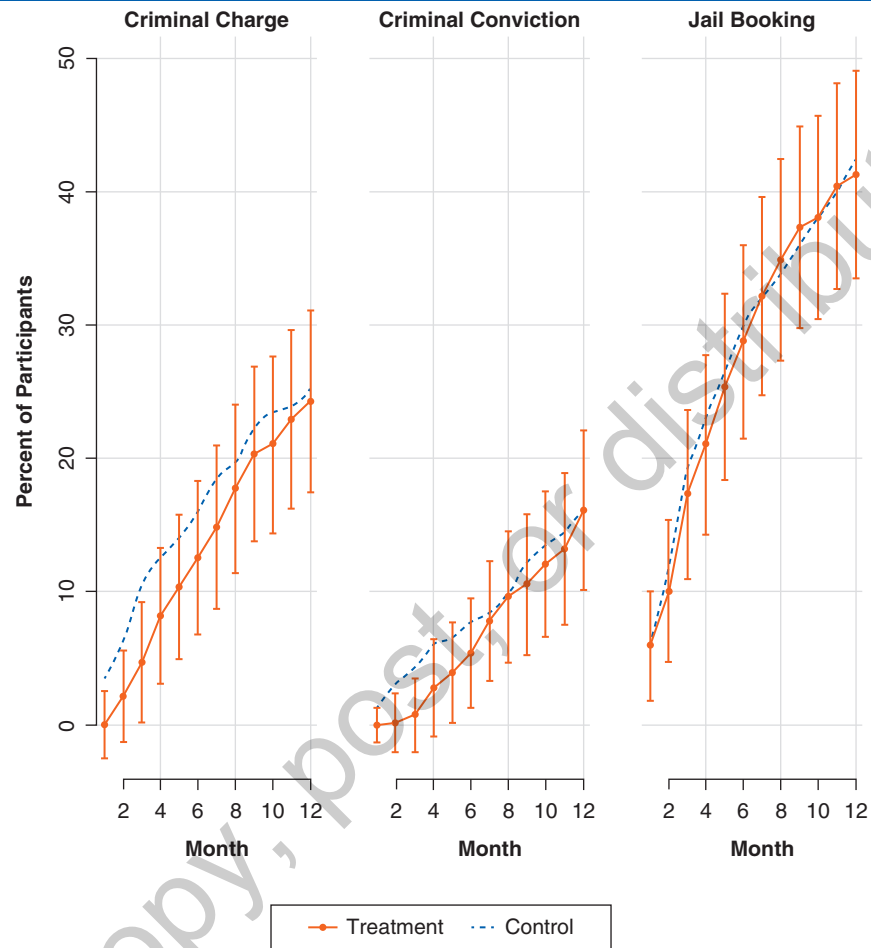
Court Fees and Fines and the Research Circle

The Pager et al. (2022) study of the impact of court fees and fines is a good example of how the research circle works. Pager et al.'s study was designed to test three hypotheses based on the theory of criminalization of poverty. One of these hypotheses was that the relief of debt reduces the likelihood of new arrests and reincarceration (Pager et al. 2022: 533). In this hypothesis, relief of debt is the independent variable, and variation in the likelihood of new arrests and reincarceration is the dependent variable (it is hypothesized to depend on relief of debt). Another hypothesis was that the relief of debt prevents a variety of court efforts at debt collection. This hypothesis has the same independent variable, but now the dependent variable is court efforts at debt collection.

Pager et al. (2022) tested these hypotheses by setting up an experiment in which persons awaiting a misdemeanor court date who were represented by the public defender could agree to participate during a 16-month enrollment period. Of the 606 who consented (more than 90% of those eligible), court orders were issued for half (determined randomly, for reasons we'll explain in Chapter 6) that waived all current Oklahoma County court fines and costs, including supervision and prosecution fees for misdemeanor cases, as well as all prior fines and costs on Oklahoma County felony and misdemeanor cases. When the researchers examined their data for the first hypothesis (new criminal charges, new convictions, and jail bookings for 12 months), they found there were fewer criminal charges just in the first three months after the initial case for those in the treatment group, but no reduction in their rate of new convictions and jail bookings compared to the control group (those whose fees and fines were not removed; see Figure 2.3). (We'll explain what a "mean" is in Chapter 8.)

When they examined the data used to test the second hypothesis (court actions), Pager et al. (2022) found that those who no longer had to pay court fees and fines (the treatment group) had less new debt and fewer court actions related to debt collection (see Figure 2.4).

FIGURE 2.3 ■ Mean Levels of New Criminal Justice Contact for Treatment and Control Groups in the 12 Months After Randomization, Oklahoma County



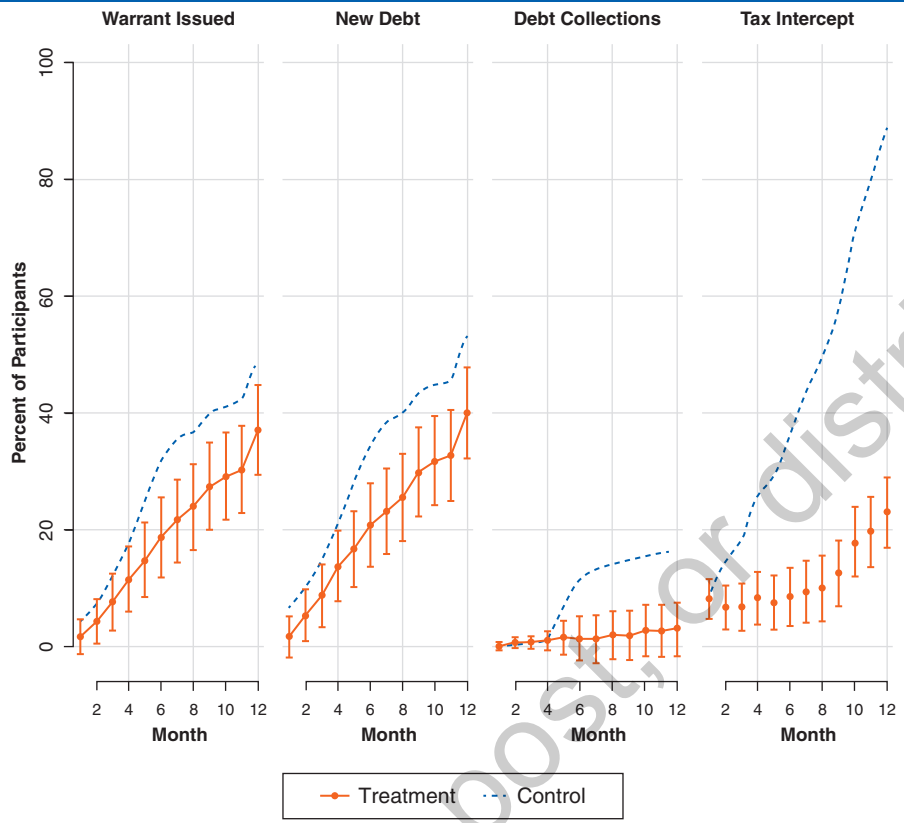
Source: Pager, Devah, Rebecca Goldstein, Helen Ho, and Bruce Western. 2022. Criminalizing poverty: The consequences of court fees in a randomized experiment. *American Sociological Review* 87(3): 539.

In summary, the first hypothesis was not supported, but the test did show that dropping fees and fines did not result in offenders committing more crimes after their conviction. The second hypothesis was supported (Pager et al. 2022: 544): “Study participants who were relieved of legal debt were significantly less likely to receive new warrants, to be assessed new debt, to receive a new hold on state tax refunds, and to have their cases referred to a private debt collector.” This pattern in the data, or empirical generalization, was consistent with the hypotheses that the researchers deduced from the criminalization of poverty theory. The theory thus received support from the experiment (see Figure 2.5).

Inductive Research

In contrast to deductive research, inductive research begins with specific data, which are then used to develop (*induce*) a theory to account for the data. (Hint: When you start *in* the data, you are doing inductive research.)

FIGURE 2.4 ■ Mean Levels of New Court Actions for Treatment and Control Groups in the 12 Months After Randomization, Oklahoma County



Source: Pager, Devah, Rebecca Goldstein, Helen Ho, and Bruce Western. 2022. Criminalizing poverty: The consequences of court fees in a randomized experiment. *American Sociological Review* 87(3): 539.

FIGURE 2.5 ■ The Research Circle: Consequences of Court Fees Experiment



One way to think of this process is in terms of the research circle. Rather than starting at the top of the circle with a theory, the inductive researcher starts at the bottom of the circle with

data and then moves up to a theory. Some researchers committed to an inductive approach even resist formulating a research question before they begin to collect data. Their technique is to let the question emerge from the social situation itself (Brewer and Hunter 1989: 54–58). In the research for his book *Champions: The Making of Olympic Swimmers*, Dan Chambliss (1988) spent several years living and working with world-class competitive swimmers who were training for the Olympics. Chambliss entered the research with no definite hypotheses and certainly no developed theory about how athletes became successful, what their lives were like, or how they related to their coaches and teams. He simply wanted to understand who these people were, and he decided to report on whatever struck him as most interesting in his research.

As it turned out, what Chambliss learned was not how special these athletes were but actually how ordinary they were. Becoming an Olympic athlete was less about innate talent, special techniques, or inspired coaching than it was about actually paying attention to all the little things that make one perform better in one's sport. His theory was *induced* from what he learned in his studies (Chambliss 1988) while being immersed *in* the data.

Research designed using an inductive approach, as in Chambliss's study, can result in new insights and provocative questions. **Inductive reasoning** also enters into deductive research when we find unexpected patterns in data collected for testing a hypothesis. Sometimes such patterns are **anomalous**, in that they don't seem to fit the theory being proposed, and they can be **serendipitous**, in that we may learn exciting, surprising new things from them. Even if we do learn inductively from such research, the adequacy of an explanation formulated after the fact is necessarily less certain than an explanation presented before the collection of data. Every phenomenon can always be explained in some way. Inductive explanations are more trustworthy if they are tested subsequently with deductive research. Great insights and ideas can come from inductive studies, but verifiable proof comes from deductive research.

An Inductive Study of Response to a Disaster

Qualitative research is often inductive: To begin, the researcher observes social interaction or interviews social actors in depth, and then develops an explanation for what has been found. The researchers often ask such questions as these: What is going on here? How do people interpret these experiences? Why do people do what they do? Rather than testing a hypothesis, the researchers try to make sense of some social phenomenon.

In 1972, for example, towns along the 17-mile Buffalo Creek hollow (a long, deep valley among mountains) in West Virginia were wiped out when a dam at the top of the hollow broke, sending 132 million gallons of water, mud, and garbage crashing down through the towns that bordered the creek. After the disaster, sociologist Kai Erikson went to the Buffalo Creek area and interviewed survivors. In the resulting book, *Everything in Its Path*, Erikson (1976) described the trauma suffered by those who survived the disaster. His explanation of their psychological destruction—an explanation that grew out of his interviews with the residents—was that people were traumatized not only by the violence of what had occurred but also by the “destruction of community” that ensued during the recovery efforts. Families were transplanted all over the area with no regard for placing them next to their former neighbors. Extended families were broken up in much the same way, as federal emergency housing authorities relocated people with little concern for whether they knew the people with whom they would be housed. Church congregations were scattered, lifelong friends were resettled miles apart, and entire neighborhoods simply vanished, both physically—that is, their houses were destroyed—and socially. Erikson's explanation grew out of his in-depth immersion in his data—the conversations he had with the people themselves.

Inductive explanations such as Erikson's feel authentic because we hear what people have to say in their own words and we see the social world as they see it. These explanations are often richer and more finely textured than are those in deductive research; however, they are probably based on fewer cases and drawn from a more limited area.

Descriptive Research: A Necessary Step

Both deductive and inductive research move halfway around the research circle, connecting theory with data. Descriptive research does not go that far, but it is still part of the research circle shown earlier in Figure 2.2. Descriptive research starts with data and proceeds only to the stage of making empirical generalizations; it does not generate entire theories.

Valid description is actually critical in all research. The Pager et al. (2022: 531) experiment on the effect of court fees was motivated partly by prior descriptive research indicating that court-imposed fines and fees have become very common: In 2004 they had been imposed on 66% of people in state prison, compared to just 24% in 1991.

Much important research for the government and private organizations is primarily descriptive: How many people experiencing poverty live in this community? Is the health of older people improving? How frequently do convicted criminals return to crime? Description of social phenomena can stimulate more ambitious deductive and inductive research. Simply put, good description of data is the cornerstone for the scientific research process and an essential component of understanding the social world.

WHAT IS THE DESIGN?

Researchers usually start with a question, although some begin with a theory or a strategy. If you're very systematic, the *question* is related to a *theory*, and an appropriate *strategy* is chosen for the research. All of these, you will notice, are critical defining issues for the researcher. If your research question is trivial (How many shoes are in my closet?), or your theory sloppy (More shoes reflect better fashion sense), or your strategy inappropriate (I'll look at lots of shoes and see what I learn), the project is doomed from the start.

But let's say you've settled these first three elements of a sound research study. Now we must begin a more technical phase of the research: the design of a study. From this point on, we will be introducing a number of terms and definitions that may seem arcane or difficult. In every case, though, these terms will help you clarify your thinking. Like exact formulae in an algebra problem or precisely the right word in an essay, these technical terms help, or even require, scientists to be absolutely clear about what they are thinking—and to be precise in describing their work to other people.

An overall research strategy can be implemented through several different types of research design. One important distinction between research designs is whether data are collected at one point in time—a **cross-sectional research design**—or at two or more points in time—a **longitudinal research design**. Another important distinction is between research designs that focus on individuals—the **individual unit of analysis**—and those that focus on groups, or aggregates of individuals—the **group unit of analysis**.

Cross-Sectional Designs

In a cross-sectional design, all of the data are collected at one point in time. In effect, you take a *cross section*—a slice that cuts across an entire population—and use that to see all the different

parts, or sections, of that population. Imagine cutting out a slice of a tree trunk, from bark to core. In looking at this cross section, one can see all the different parts, including the rings of the tree. In social research, you might do a cross-sectional study of a college's student body, with a sample that includes freshmen through seniors. This "slice" of the population, taken at a single point in time, allows one to compare the different groups.

But cross-sectional studies, because they use data collected at only one time, suffer from a serious weakness: They don't directly measure the impact of time. For instance, you may see that seniors at your college write more clearly than do freshmen. You might conclude, then, that the difference is because of what transpired over time, that is, what they learned in college. But it might actually be because this year's seniors were recruited under a policy that favored better writers. In other words, the cross-sectional study doesn't distinguish if the seniors have learned a lot in college or if they were just better than this year's freshmen when they first enrolled.

Or let's say that in 2015, you conduct a study of the U.S. workforce and find that older workers make more money than younger workers do. You may conclude (erroneously) that as one gets older, one makes more money. But you didn't actually observe that happening because you didn't track actual people over time. It *may* be that the older generation (say, people born in 1965) have just enjoyed higher wages all along than have people born in 1985.

With a cross-sectional study, we can't be sure which explanation is correct, and that's a big weakness. Of course, we could ask workers what they made when they first started working, or we could ask college seniors what test scores they received when they were freshmen, but we are then injecting a *longitudinal* element into our cross-sectional research design. Because of the fallibility of memory and the incentives for distorting the past, taking such an approach is not a good way to study change over time.

Longitudinal Designs

In longitudinal research, data are collected over time. By measuring independent and dependent variables at each of several different times, the researcher can determine whether change in the independent variable actually precedes change in the dependent variable—that is, whether the hypothesized cause comes before the effect, as a true cause must. In a cross-sectional study, when the data are all collected at one time, you can't really show if the hypothesized cause occurs first; in longitudinal studies, though, you can see if a cause occurs and then, later in time, an effect occurs. So if possible to do, longitudinal research is always preferable.

But collecting data more than once takes time and work. Often researchers simply cannot, or are unwilling to, delay completion of a study for even 1 year to collect follow-up data. In student research projects, longitudinal research is typically not possible because you have to finish up the project quickly. Still, many research questions really should have a long follow-up period: What is the impact of job training on subsequent employment? How effective is a school-based program in improving parenting skills? Under what conditions do traumatic experiences in childhood result in later mental illness? The value of longitudinal data is great, so every effort should be made to develop longitudinal research designs whenever they are appropriate.

Three basic research designs are shown in Figure 2.6. The first is a simple *cross-sectional* design; it is not longitudinal.

The second is a cross-sectional study that is then *repeated* at least once; therefore, this approach is referred to as a *repeated cross-sectional* or a *trend* design because it can capture trends over time; it is longitudinal. The frequency of the follow-up measurements can vary, ranging from a simple before-and-after design with just one follow-up to studies in which various

FIGURE 2.6 ■ Three Types of Research Designs

1. Cross-Sectional Design



One sample drawn at *one* time (not longitudinal)

2. Trend (or “Repeated Cross-Sectional”) Design



At least two samples, drawn at least two different times (longitudinal)

3. Panel Design



One sample, measured at least two different times (longitudinal)

indicators are measured every month for many years. In such trend studies, members of the sample are rotated or completely replaced each time a measurement is done.

The third design, also longitudinal, is called a *panel* study. A panel study uses a single sample that is studied at multiple points across time; the same people, for instance, will be asked questions on multiple occasions so researchers can learn how they change and develop as individuals.

Let's consider the longitudinal designs to see how they are done and what their strengths and weaknesses are.

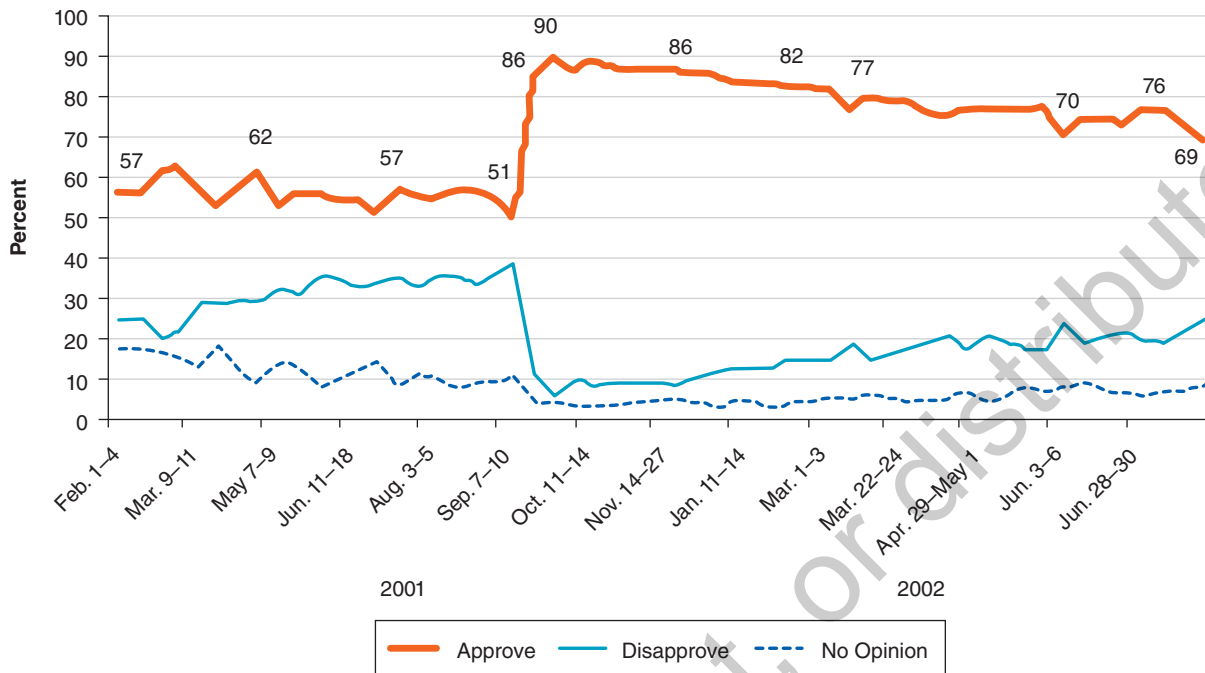
Trend Designs

Trend (repeated cross-sectional) designs are conducted as follows:

1. A sample is drawn from a population at Time 1, and data are collected from the sample.
2. As time passes, some people leave the population, and others enter it.
3. At Time 2, a different sample is drawn from this population.

The Gallup polls, begun in the 1930s, are a well-known example of trend studies. One Gallup poll, for instance, asks people how well they believe the U.S. president is doing his job (Figure 2.7). Every so often, the Gallup organization takes a sample of the U.S. population (usually about 1,400 people) and asks them this question. Each time, Gallup researchers ask a different, though roughly demographically equivalent, group of people the question; they aren't talking to the same people every time. That is, they can see when support for presidents is high and when it is low, in general. This is a trend study. Figure 2.7 shows the dramatic increase in the public's approval rating of President George W. Bush following the September 11, 2001, World Trade Center attacks. In the entire history of Gallup polls, this is the single biggest approval increase ever recorded for an American president.

FIGURE 2.7 ■ George W. Bush Approval Ratings, Before and After Sept. 11, 2001: A Trend Study by the Gallup Organization



Source: Gallup Organization. 2002, August 20. *Poll analyses*, July 29, 2002. Bush job approval update.

When the goal is to determine whether a population (not necessarily individuals) has changed over time, trend (or “repeated cross-sectional”) designs are appropriate. Has support for same-sex marriage increased among Americans in the past 20 years? Are employers more likely to pay maternity benefits today than they were in the 1950s? Are college students today more involved in their communities than college students were 10 years ago? These questions concern changes in populations as a whole, not changes in individuals.

Panel Designs

When we need to know whether specific individuals in a population have changed, we must turn to a **panel design**. For their book *How College Works* (2014), Dan Chambliss and Chris Takacs selected a panel of 100 random students entering college in 2001. Each of those students was interviewed once a year for each of their 4 years in college; then they were interviewed every 2 years after graduation until 2010. The goal was to determine which experiences in their college career were valuable and which were a hindrance to their education. By following the same people over time, we can see how changes happen in the lives of individual students.

Panel designs allow clear identification of changes in the units (individuals, groups, or whatever) we are studying. Here is the process for conducting fixed-sample panel studies:

1. A sample (called a *panel*) is drawn from a population at Time 1, and data are collected from the sample (e.g., 100 freshmen are selected and interviewed).

2. As time passes, some panel members become unavailable for follow-up, and the population changes (some students transfer to other colleges or decline to continue participating).
3. At Time 2, data are collected (the remaining students are reinterviewed) from the same people (the panel) as at Time 1, except for those people who cannot be located.

A panel design allows us to determine how individuals change, as well as how the population as a whole has changed; this is a great advantage. However, panel designs are difficult to implement successfully and often are not even attempted, for two reasons:

1. *Expense and attrition*—It can be difficult and expensive to keep track of individuals over a long period, and inevitably the proportion of panel members who can be located for follow-up will decline over time. Panel studies often lose more than one quarter of their members through attrition (Miller 1991: 170).
2. *Subject fatigue*—Panel members may grow weary of repeated interviews and drop out of the study, or they may become so used to answering the standard questions in the survey that they start giving stock answers rather than actually thinking about their current feelings or actions (Campbell 1992).

Although quite difficult to do, panel studies can be scientifically valuable and intrinsically fascinating. In the British *Up* documentary film series, a group of 14 British 7-year-olds were followed after first being filmed in 1964, for a movie titled *7 Up*. There were 10 boys and 4 girls from a range of socioeconomic backgrounds. Every 7 years since then, the same people have been interviewed, for what has become one of the most extraordinary documentaries ever made. The ninth and latest movie is titled *63 Up*, and shows the current lives of the same people, now much older. Only one has dropped out completely, although one died before the last filming in 2019. The series as a whole thus follows these people through their lives. We can't really consider this documentary series to be a social science project, but it exemplifies a panel design and raises many interesting questions about the ways the participants' social class and other characteristics have affected them.

Cohort Designs

Among other uses, longitudinal studies can be designed to track the results of either an event (such as the 9/11 terrorist attacks or the 2008 economic crash) or the progress of a specific historical generation (e.g., people born in 1996). In these cases, the group of people selected because they had the same starting point (such as an event or a birth year) is known as a **cohort**. If you sample people from the same cohort at two or more different times, the study is using a **cohort design**. You could also follow the same cohort in a panel study, but in this case you would have to collect data from the same people at each follow-up. Examples of cohorts include the following:

- *Birth cohorts* are those who share a common period of birth—for example, “baby boomers” born after World War II, “millennials” who became adults around 2000, “digital natives” born since the internet became pervasive, and so forth.
- *Seniority cohorts* include those who have worked at the same place for about 5 years, about 10 years, and so on.

- *Event cohorts* are people who have shared an event—for instance, all the victims of Hurricane Harvey that hit Texas and Louisiana in 2017. Many panel studies are based on cohorts because the people selected by definition all start in the research at the same specific time in history; the researcher needs to be aware that their cohort status (when they are living) may affect the results.

We can see the value of longitudinal research using a cohort design in comparing two studies that estimated the impact of public and private schooling on high school students' achievement test scores. In an initial cross-sectional (not longitudinal) study, James Coleman, Thomas Hoffer, and Sally Kilgore (1982) compared standardized achievement test scores of high school sophomores and seniors in public, Catholic, and other private schools. The researchers found that test scores were higher in the private (including Catholic) high schools than in the public high schools.

But was this difference a causal effect of private schooling? Perhaps the parents of higher-performing students were choosing to send them to private schools rather than to public ones. So Coleman and Hoffer (1987) went back to the high schools and studied the test scores of the former sophomores 2 years later, when they were seniors; in other words, the researchers used a panel (longitudinal) design, but one in which they were following the same cohort over time. In this second study, they found that the verbal and math achievement test scores of the private (including Catholic) school students had increased more over the 2 years than the scores of the public school students had. Irrespective of students' initial achievement test scores, the private schools seemed to “do more” for their students than did the public schools. The researchers' causal conclusion rested on much stronger ground because they used a longitudinal panel design to study change in the same cohort of students.

Units and Levels of Analysis

Units of analysis are the things you are studying, whose behavior you want to understand. Often these are individual people (e.g., why do certain students work harder?), but they can also be, for instance, families, groups, colleges, governments, or nations. All of these could be units of analysis for your research. Sociologist Erving Goffman, writing about face-to-face interaction, became famous partly because he realized that the interaction itself—not just the people in it—could be a unit of analysis. He argued that interactions as such worked in certain ways, apart from the individuals who happened to be joining them: “Not, then, men and their moments. Rather, moments and their men” (Goffman 1967: 3). Researchers must always be clear about the level of social life they are studying: What are their units of analysis? The units of analysis are the entities you are studying and trying to learn about.

As the examples suggest, units exist at different *levels* of collectivity, from the most micro (small) to the most macro (large). Individual people are easily seen and talked to, and you can learn about them quite directly. A university, however, although you can certainly visit it and walk around it, is harder to visualize, and data regarding it may take longer to gather. Finally, a nation is not really a “thing” at all and can never be seen by human eyes; understanding such a unit may require many years of study. People, universities, and nations exist at different *levels* of social reality. And as probably already known, groups don't act like individuals do.

Sometimes researchers confuse levels of analysis, mistakenly using data from one level to draw conclusions about a different level. Even the best social scientists fall into this trap. In Émile Durkheim's classic (1951) study of suicide, for example, nationwide suicide rates were compared for Catholic and Protestant countries (in an early stage of his research). The data

on suicide were collected for individual people, and religion was tallied for individuals as well. Then Durkheim used aggregated numbers to characterize entire countries as being high or low suicide countries and as Protestant (England, Germany, Norway) or Catholic (Italy, France, Spain) countries. He found that Catholic countries had lower rates of suicide than Protestant countries had. His accurate finding was about countries, then, not about people; the unit of analysis was the country, and he ranked countries by their suicide rates. Yes, the data were collected from individuals and were about individuals, but they had been combined (aggregated) to describe entire nations. Thus, Durkheim's units of analysis were countries. So far, so good.

But Durkheim then made his big mistake. He used his findings from one level of analysis to make statements about units at a different level. He used country data to draw conclusions about individuals, claiming that Catholic individuals were less likely than were Protestant individuals to commit suicide. Much of his later discussion in *Suicide* (1951) was about why Catholic individuals would be less likely to kill themselves. Perhaps they are, but we can't be sure based on aggregate data. It could be that Protestant individuals were more likely to kill themselves in Durkheim's time when they lived in areas with high numbers of Catholics.

Confusion about levels of analysis can take several forms (Lieberman 1985). Durkheim's mistake was to use findings from a "higher" level (countries) to draw conclusions about a "lower" level (individuals). This is called the **ecological fallacy** because the *ecology*—the broader surrounding setting, in this case a country—is mistakenly believed to straightforwardly parallel how individuals will act as well. The ecological fallacy occurs when group-level data are used to draw conclusions about individual-level processes. It's a mistake, and a common one.

Try to spot the ecological fallacy in each of the following deductions. The first half of each sentence is true, but the second half doesn't logically follow from the first:

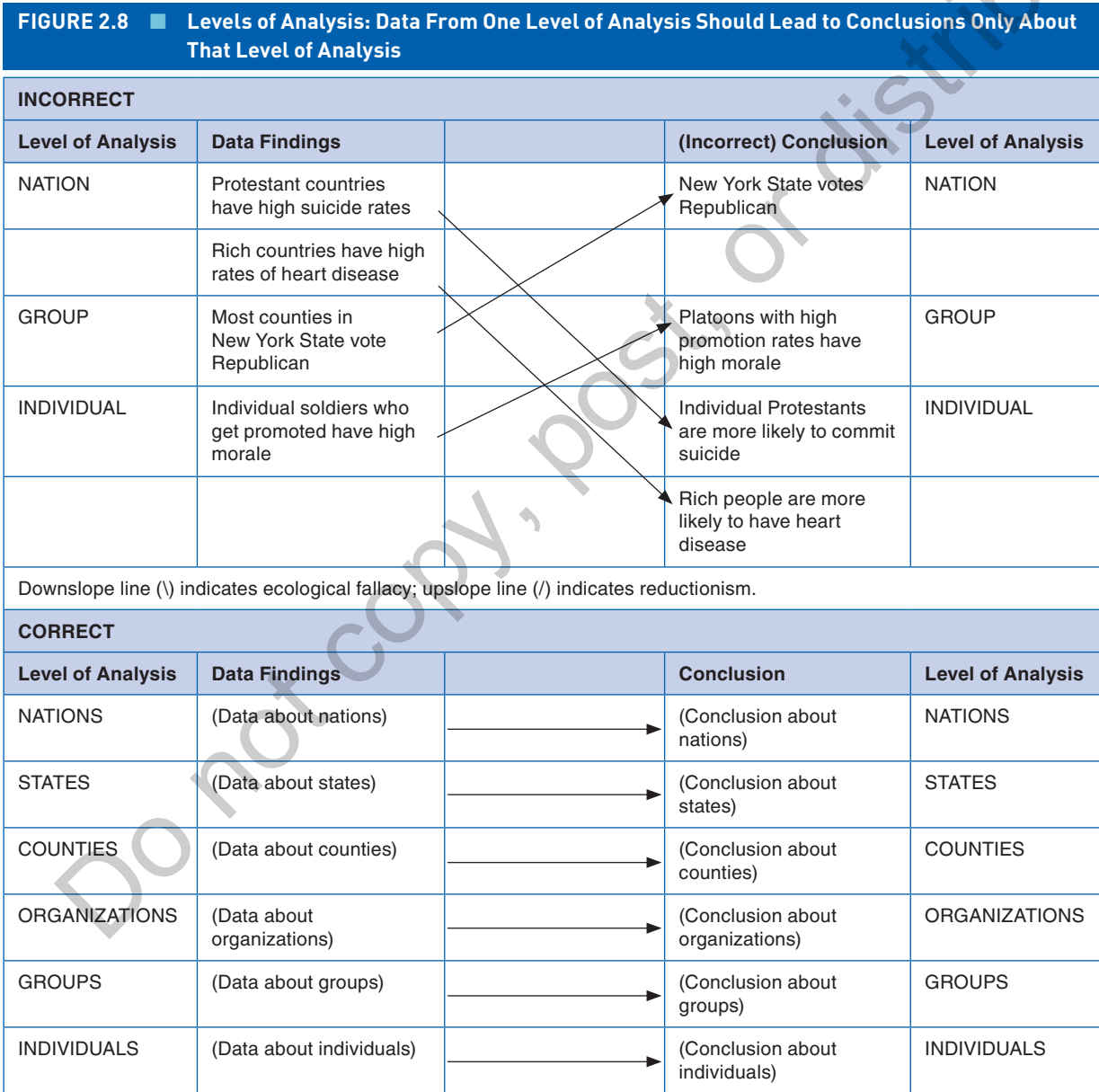
- Richer countries have higher rates of heart disease; therefore, richer people have higher rates of heart disease.
- Florida counties with the largest number of Black residents have the highest rates of Ku Klux Klan membership; therefore, Blacks join the Klan more than whites.
- In the 2022 congressional election, Republicans won the House of Representatives, but Democrats held onto the Senate; therefore, Americans want a divided government.

In each case, a group-level finding from data is used to draw (erroneous) conclusions about individuals. In rich countries, yes, there is more heart disease, but actually, it's among the poor individuals within those countries. Florida counties with more Black people attract more white individuals to the Klan. And although the United States (as a whole) was certainly divided in the 2022 election, just as certainly many individual Americans, both Republican and Democratic, had no ambivalence whatsoever about their favorite candidates. *America* as a whole may "want a divided government," but relatively few *Americans* do.

A researcher who draws such hasty conclusions about individual-level processes from group-level data is committing an ecological fallacy. In August 2006, the *American Sociological Review* published a fierce exchange in which Mitchell Duneier, a well-known qualitative researcher from Princeton University, attacked a very popular book, *Heat Wave*, by Eric Klinenberg. *Heat Wave* vividly described how hundreds of poor people in Chicago died during a heat wave in July 1995. Klinenberg argued that the deaths were the result of deteriorating community conditions—for instance, that vulnerable old people, afraid to go outside and possibly be attacked or mugged, remained indoors despite literally killer temperatures in their homes. Although it was clear that

community conditions mattered, Duneier (2006) claimed that Klinenberg lacked any data on individual deaths to show that this is what happened. Duneier said that although (1) certain features prevailed in the stricken communities and (2) lots of people died, that did not mean that it was those conditions themselves that led to individual deaths. To show that, Klinenberg would need evidence about the cause of death for each person, as an individual. Klinenberg (2006) disagreed, strongly.

So, conclusions about processes at the individual level should be based on individual-level data; conclusions about group-level processes should be based on data collected about groups (see Figure 2.8). When that principle is not followed, the conclusions could be fallacious as a result.



We don't want to leave you with the belief that conclusions about individual processes based on group-level data are *necessarily* wrong. We just don't know for sure. Suppose, for example, that we find that communities with higher average incomes have lower crime rates. Perhaps something about affluence improves community life such that crime is reduced; that's possible. Or, it may be that the only thing special about these communities is that they have more individuals with higher incomes, who tend to commit fewer crimes. Even though we collected data at the group level and analyzed them at the group level, they may reflect a causal process at the individual level (Sampson and Lauritsen 1994: 80–83). The ecological fallacy just reminds us that we can't *know* about individuals without having individual-level information.

Confusion between levels of analysis also occurs in the other direction, when data from the individual level are used to draw conclusions about group behavior. For instance, you may know the personal preferences of everyone on a hiring committee, so you try to predict whom the committee will decide to hire, but you could easily be wrong. Or you may know two good individuals who are getting married, so you think that the marriage (the higher-level unit) will be good, too. But often, such predictions are wrong because groups as units don't work like individuals. Nations often go to war even when most of their people (individually) don't want to. Adam Smith, in the 1700s, famously argued that millions of people (individuals) acting selfishly could in fact produce an economy (a group) that acted selflessly, helping almost everyone. You can't predict higher-level processes or outcomes from lower-level ones. You can't, in short, always reduce group behavior to individual behavior added up; doing so is called the **reductionist fallacy**, or **reductionism** (because it *reduces* group behavior to that of individuals), and it's basically the reverse of the ecological fallacy.

Both involve confusion of levels of analysis.

CONCLUSION

Social researchers can find many questions to study, but not all questions are equally worthy. The ones that warrant the expense and effort of social research are feasible, socially important, and scientifically relevant.

Selecting a worthy research question does not guarantee a worthwhile research project. The simplicity of the research circle presented in this chapter belies the complexity of the social research process. In the following chapters, we will focus on particular aspects of that process. Chapter 3 focuses on the importance of ethical research practice, with examples of the problems resulting from ethical violations and the guidelines that should be followed. Chapter 4 examines the interrelated processes of conceptualization and measurement, the foundation for what is arguably the most important research goal: achieving measurement validity. Chapter 5 reviews the meaning of generalizability and the sampling strategies that help us to achieve this aspect of validity. Chapter 6 introduces the third aspect of validity—causal validity—and illustrates different methods for achieving causal validity, with an emphasis on experimental design as a method of data collection. Chapters 7 and 9 introduce two other approaches to data collection—surveys and qualitative research—that help us, in different ways, to achieve valid and authentic conclusions, while Chapters 8 and 10 introduce means for analyzing data collected in these ways. Chapter 11 then introduces different types of unobtrusive measures, including content analysis, historical methods, and comparative methods. Chapter 12 shows how the

methods you have learned can be used to evaluate social programs, while Chapter 13 compares the different research designs before discussing how to review research, how to propose research, and how to report research.

You are now forewarned about the difficulties that all scientists, but social scientists in particular, face in their work. We hope that you will return often to this chapter as you read the subsequent chapters, when you criticize the research literature, and when you design your own research projects. To be conscientious, thoughtful, and responsible—this is the mandate of every social scientist. If you formulate a feasible research problem, ask the right questions in advance, try to adhere to the research guidelines, and steer clear of the most common difficulties, you will be well along the road to fulfilling this mandate.

KEY TERMS

Anomalous	Inductive reasoning
Cohort	Inductive research
Cohort design	Longitudinal research design
Cross-sectional research design	Panel design
Deductive research	Reductionist fallacy (reductionism)
Dependent variable	Research circle
Direction of association	Serendipitous
Ecological fallacy	Social research question
Group unit of analysis	Theory
Hypothesis	Trend (repeated cross-sectional) design
Independent variable	Units of analysis
Individual unit of analysis	Variable

HIGHLIGHTS

- LO 2.1** Formulate a social research question that is feasible, socially important, and scientifically relevant
- Social research questions should be feasible in that one is able to conduct a study to answer them with the time and resources available and gain access to the group one desires to study.
 - Social research questions should have a focus on a substantive area of importance.
 - Social research questions should be scientifically relevant and grounded in the social science literature.
- LO 2.2** Discuss the role of theory in social research
- Building social theory is a major objective of social science research. Investigate relevant theories before starting social research projects, and draw out the theoretical implications of research findings.
 - A theory is a logically interrelated set of propositions that help us make sense of many interrelated phenomena and predict behavior or attitudes that are likely to occur under certain conditions.
- LO 2.3** Compare the strengths and weaknesses of using deductive and inductive research strategies

- Research based on deductive reasoning proceeds from general ideas, deduces specific expectations from these ideas, and then tests the ideas with empirical data.
- Research based on inductive reasoning begins with (*in*) specific data and then develops (*induces*) general ideas or theories to explain patterns in the data.
- It may be possible to explain unanticipated research findings after the fact, but such explanations have less credibility than those that have been tested with data collected for the purpose of the study.
- The scientific process can be represented as circular, with connections from theory, to hypotheses, to data, and to empirical generalizations. Research investigations may begin at different points along the research circle and traverse different portions of it. Deductive research begins at the point of theory; inductive research begins with data but ends with theory. Descriptive research begins with data and ends with empirical generalizations.

LO 2.4 Compare cross-sectional research designs and the three types of longitudinal research design

- Research designs vary.
- Cross-sectional designs collect data at one point in time. The length of time required to collect the data from all units may vary from days to months, but data are collected from each unit only once.
- Longitudinal designs vary in whether the same people are measured at different times, how the population of interest is defined, and how frequently follow-up measurements are taken.
- **Repeated cross-sectional design (trend study):** A type of longitudinal study in which data are collected at two or more points in time from different samples of the same population. This design is appropriate when the goal is to determine whether a population has changed over time.
- **Fixed-sample panel design (panel study):** A type of longitudinal study in which data are collected from the same individuals—the panel—at two or more points in time. This design can be difficult to carry out successfully because of their expense as well as subject attrition and fatigue.
- **Event-based design (cohort study):** A type of longitudinal study in which the follow-up samples (at one or more times) are selected from the same cohort—people who all have experienced a similar event or a common starting point. An event-based design can be a type of repeated cross-sectional design or a type of panel design.
- In most sociological and psychological studies, the units of analysis are individuals. But in some studies, the units of analysis may instead be groups of some sort, such as families, schools, work organizations, towns, states, or countries.
- Invalid conclusions may occur when relationships between variables measured at the group level are assumed to apply at the individual level (the ecological fallacy).
- Invalid conclusions may occur when relationships between variables measured at the level of individuals are assumed to apply at the group level (the reductionist fallacy).
- Nonetheless, many research questions point to relationships at multiple levels and so may profitably be investigated at multiple units of analysis.

DISCUSSION QUESTIONS

1. Pick a social issue about which you think research is needed. Draft three research questions about this issue. Refine one of the questions and evaluate it in terms of the three criteria for good research questions.
2. Identify variables that are relevant to your three research questions. Now formulate three related hypotheses. Which are the independent and which are the dependent variables in these hypotheses?
3. If you were to design research about domestic violence, would you prefer an inductive approach or a deductive approach? Explain your preference. What would be the advantages and disadvantages of each approach? Consider in your answer the role of social theory, the value of searching the literature, and the goals of your research.

EXERCISES

1. State a problem for research—some feature of social life that interests you. If you have not already identified a problem for study, or if you need to evaluate whether your research problem is doable, a few suggestions should help to get the ball rolling and keep you on course.
 - a. Jot down several questions that have puzzled you about people and social relations, perhaps questions that have come to mind while reading textbooks or research articles, talking with friends, or hearing news stories.
 - b. Now take stock of your interests, your opportunities, and the work of others. Which of your research questions no longer seem feasible or interesting? What additional research questions come to mind? Pick out one question that is of interest and seems feasible and that has probably been studied before.
 - c. Do you think your motives for doing the research will affect how the research is done? How? Imagine several different motives for doing the research. Might any of them affect the quality of your research? How?
 - d. Write out your research question in one sentence; then elaborate on it in one paragraph. List at least three reasons why it is a good research question for you to investigate. Then present your question to your classmates and instructor for discussion and feedback.
2. Review Appendix A: Finding Information, and then search the literature (and the internet) on the research question you identified. Copy down at least five citations for articles (with abstracts from SocINDEX or Sociological Abstracts) and two websites reporting research that seems highly relevant to your research question. Look up at least two of these articles and one of the websites. Inspect the article bibliographies and the links at the website, and identify at least one more relevant article and website from each source.

Write a brief description of each article and website you consulted and evaluate its relevance to your research question. What additions or changes to your thoughts about the research question do the sources suggest?

3. Using recent newspapers or magazines, find three articles that report on large interview or survey research studies. Describe each study briefly. Then say (a) whether the study design was longitudinal or cross-sectional and (b) if that mattered—that is, if the study's findings would possibly have been different using the alternative design.
4. Search the journal literature for three studies concerning some social program or organizational policy after you review the procedures in Appendix A. Several possibilities are research on Head Start, the effects of government assistance payments, and standardized statewide testing in the public schools. Would you characterize the findings as largely consistent or inconsistent? How would you explain discrepant findings?

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