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DISCOVER SOCIOLOGICAL RESEARCH

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WHAT DO YOU THINK?

1. What kinds of research questions could one pose to guide studies of sociological phenomena such as long-term poverty, cyberbullying, family or veteran homelessness, Generation Z consumption habits, or the high dropout rate in some high schools?
2. What factors may affect the honesty of people's responses to survey or interview questions?
3. What makes a sociological research project ethical or unethical?

LEARNING OBJECTIVES

- 2.1 Describe the scientific method and distinguish between qualitative and quantitative research.
- 2.2 Describe the components of a scientific theory and how a scientific theory is tested.
- 2.3 Identify key methods employed in sociological research and explain when it is appropriate to use them.
- 2.4 Understand the basic steps in building a sociological research project.

NO ROOF OVERHEAD: RESEARCHING EVICTION IN AMERICA

In *Evicted: Poverty and Profit in the American City*, sociologist Matthew Desmond (2016a) writes that

[M]illions of Americans are evicted every year because they can't make rent. . . . In 2013, 1 in 8 poor renting families nationwide were unable to pay all of their rent, and a similar number thought it would be likely they would be evicted soon. (pp. 4–5)

Desmond argues that eviction is not only a consequence of poverty but also a cause because the lack of a stable home undermines the ability of the poor to get and keep a job and to establish children in good schools, and it can lead to stress, depression, and even suicide. As a *New York Times* book review of *Evicted* poignantly notes, “Living in extreme poverty in the United States means waging an almost gladiatorial battle for creature comforts that luckier people take for granted. And of all those comforts, perhaps the most important is a stable, dignified home” (Senior, 2016, para. 4).

Desmond builds his research around a powerful, on-the-ground ethnographic account of the lives of eight Milwaukee families caught in a web of destitution and despair as they try to navigate the private rental market in that city. They include Arleen and her two young sons, fighting to find safe haven as Arleen struggles with money, depression, and the behavioral troubles of her boys. Desmond also offers an account of the multigenerational Hinkston family, including young teenager Ruby, whose efforts at the public library to construct a bright, pleasant virtual home with a free online computer game are a grim contrast to her own living conditions in low-rent housing, which are characterized by instability, cockroaches, and chronically clogged plumbing.

Desmond points out that their stories are not isolated accounts; rather, in 2013, 67% of poor renting families received no housing assistance—the demand for housing help far outpaces the availability of subsidized apartments and housing vouchers. This leaves families to seek what they



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hope will be permanent shelter in a private low-rent housing market that is rife with dismal, dirty, and even dangerous living conditions. Significantly, even the worst housing may stretch the resources of many families beyond their means: The majority of poor families spend over half their income on rent, whereas about one quarter spend over 70% (Desmond, 2016a, p. 4). An unanticipated expense, a dispute with a landlord, or the loss of a job can easily put families on the street. The lack of resources and an eviction record can keep them there for a significant period of time.

In 2020, the pain of eviction reached an even greater proportion of Americans: Among the most significant economic consequences of the COVID-19 pandemic was a soaring rate of evictions as tenants who lost jobs and income as a result of the economic slowdown ran short of funds to pay their rent. At the end of September 2020, the Eviction Lab, which hosts a public website, had logged over 50,600 evictions in 17 monitored cities since the start of the pandemic (<https://evictionlab.org/eviction-tracking/>).

Desmond's work is a good example of qualitative sociological research, and he recognizes its significance to academic and policy debates. By using a scientific approach and rigorous field research, Desmond casts light on the little-examined but significant problem of evictions. He recognizes the struggles of those who are most at risk of eviction—low-income minority women: “Women living in black neighborhoods in Milwaukee represent 9.6% of the population, but 30% of evictions” (Desmond, 2015, pp. 3–4). Importantly, he also sees that there is profit to be made from the misery of others, and he documents the multitude of ways in which landlords exploit the low-end market for their benefit, skimping on repairs, failing to provide even basic appliances (apparently a legal action), and keeping even low rents high enough that if tenants fail to pay, the landlord can evict them, keep the deposit, and move on to a new renter (Desmond, 2016a). As a sociologist, Desmond has described and defined his problem, examined its causes and consequences, and provided policy prescriptions to address it.

In this chapter, we examine the ways sociologists like Matthew Desmond study the social world. First, we distinguish between sociological understanding and common sense. Then we discuss the key steps in the research process itself. We examine how sociologists test their theories using a variety of research methods, and finally, we consider the ethical implications of doing research on human subjects.

SOCIOLOGY AND COMMON SENSE

Using science means using a unique way of seeing to investigate the world around us. The essence of the **scientific method** is straightforward: It is *a process of gathering empirical (scientific and specific) data, creating theories, and rigorously testing theories*. In sociological research, theories and empirical data exist in a dynamic relationship (Figure 2.1). Some sociological research begins from general theories, which offer “big picture” ideas: **Deductive reasoning** starts from broad theories about the social world but proceeds to break them down into more specific and testable hypotheses. Sociological **hypotheses** are ideas about the world, derived from theories, that describe possible relationships between social phenomena. Some research begins from the ground up: **Inductive reasoning** starts from specific data, such as interviews, observations, or field notes, that may focus on a single community or event and endeavors to identify larger patterns from which to derive more general theories.

Sociologists employ the scientific method in both quantitative and qualitative research. **Quantitative research**, which is often done through methods such as large-scale surveys, *gathers data that can be quantified and offers insight into broad patterns of social behavior* (for example, the percentage of U.S. adults who use corporal punishment such as spanking with their children) *and social attitudes* (for example, the percentage of U.S. adults who approve of corporal punishment) without necessarily exploring the meaning of or reasons for the identified phenomena. **Qualitative research**, such as that conducted by Matthew Desmond, *is characterized by data that cannot be quantified (or converted into numbers), focusing instead on generating in-depth knowledge of social life, institutions, and processes* (for example, why parents in particular demographic groups are more or less likely to use spanking as a method of punishment). It relies on the gathering of data through methods such as focus groups, participant and nonparticipant observation, interviews, content analysis, and archival research. Generally, population samples in qualitative research are small because they focus on in-depth understanding.

Scientific method: A process of gathering empirical (scientific and specific) data, creating theories, and rigorously testing theories.

Deductive reasoning: Starts from broad theories about the social world but proceeds to break them down into more specific and testable hypotheses.

Hypotheses: Ideas about the world, derived from theories, that describe possible relationships between social phenomena.

Inductive reasoning: Starts from specific data, such as interviews, observations, or field notes, that may focus on a single community or event and endeavors to identify larger patterns from which to derive more general theories.

Quantitative research: Research that gathers data that can be quantified and offers insight into broad patterns of social behavior and social attitudes.

Qualitative research: Research that is characterized by data that cannot be quantified (or converted into numbers), focusing instead on generating in-depth knowledge of social life, institutions, and processes.

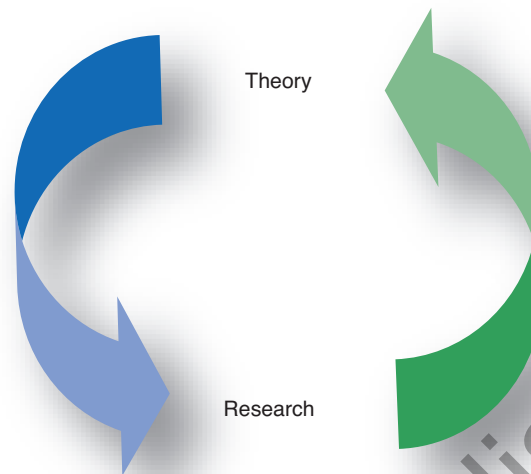
FIGURE 2.1 ■ The Relationship Between Theory and Research

TABLE 2.1 ■ Annual Percentage of Drug Use Among 8th, 10th, and 12th Graders, 2019

	MARIJUANA	COCAINE	CRACK COCAINE	LSD	HEROIN
8th	11.8	0.7	0.4	1.6	0.3
10th	28.8	1.5	0.6	2.3	0.3
12th	35.7	2.2	1.0	3.6	0.4

Source: National Institute on Drug Abuse. (2019). *Monitoring the future study: Trends in prevalence of various drugs for 8th graders, 10th graders, and 12th graders; 2016–2019 (in percent)*. <https://www.drugabuse.gov/drug-topics/trends-statistics/monitoring-future/monitoring-future-study-trends-in-prevalence-various-drugs>

Personal experience and common sense about the world are often fine starting points for sociological research. Researchers are driven by a passion to understand the world around them, and curiosity that emerges from personal experience can be a powerful motivator. Personal experience and even common sense can, however, mislead us. In the 14th century, common sense suggested to people that the Earth was flat; after all, it *looks* flat. Today, influenced by stereotypes and media portrayals of youthful deviance, many people believe that drug use is common among high schoolers. But common sense misleads—or is far more nuanced. The Earth is not flat (as you know!), and, while the rate of marijuana use has risen among young people, the use of hard drugs is very low (Table 2.1).

Consider the following ideas, which many believe to be true, although all are false.

Common Wisdom

I know women who earn more than their husbands or boyfriends. The gender wage gap is no longer an issue in the United States.

Sociological Research

Data show that men as a group earn more than women as a group. For example, in mid-2020, men had a weekly median income of \$1,087, compared with \$913 for women for all full-time occupations (U.S. Bureau of Labor Statistics, 2020). There is some statistical variation, but data suggest that women as a group earn 84 cents to a dollar that men earn. These figures compare all men and all women who

work full time and year-round. Reasons for the gap include worker characteristics (such as experience, education, and ability or willingness to negotiate salary), job characteristics (such as hours required), devaluation of women's work by society, and pay discrimination against female workers (American Association of University Women, 2016; Cabeza et al., 2011; Reskin & Padavic, 2002). Although some women, of course, earn more than some men, the overall pattern of men outearning women remains in place today. This topic is discussed in greater detail in Chapter 10.

Common Wisdom

Homeless people lack adequate shelter because they do not work.

Sociological Research

Finding safe, permanent housing is a challenge for many Americans, even those who work for pay. Low wages and poor benefits in the service industry, where many less-educated people work, as well as a shortage of adequate housing options for low-income families, can make finding permanent shelter a challenge and eviction a chronic risk (Desmond, 2016a). The precarity of housing for millions of families was highlighted in 2020 when the COVID-19 pandemic resulted in massive job losses that rendered many Americans unable to meet their rental and mortgage obligations.

There is also a population of the long-term homeless who cannot work: “Nearly all of the long-term homeless have tenuous family ties and some kind of disability, whether it is a drug or alcohol addiction, a mental illness, or a physical handicap” (Culhane, 2010, para. 4). Alas, this is a group that would benefit from housing in facilities that can treat their ailments so they can attain self-sufficiency. The important sociological subjects of poverty and access (or lack thereof) to resources like safe housing are discussed more fully in Chapter 7.

Common Wisdom

Education is the great equalizer. All children in the United States have the opportunity to get a good education. Low academic achievement is an individual failure.

Sociological Research

Public education is free and available to all in the United States, but the quality of education varies dramatically. Consider the fact that in many states and localities, a major source of public school funding is local property taxes, which constitute an average of about 45% of funding (state and federal allocations make up the rest) (National Public Radio, 2010). As such, communities with high property values have richer sources of funding from which to draw educational resources, whereas poor communities—even those with high tax rates—have more limited resource pools.

As well, high levels of racial segregation persist in U.S. schools. A U.S. Government Accountability Office report found that the proportion of schools that are highly segregated by race and class—that is, where more than 75% of children get free or reduced-price lunch and more than 75% are Black or Hispanic—is rising, climbing from 9% to 16% of schools between 2001 and 2014. It is also significant that students in the high-poverty and majority-Black or Hispanic schools were less likely to have access to the range of math and science courses available to their peers in better-off schools and to be subject to harsher disciplinary measures (U.S. Government Accountability Office, 2016). Research also shows a relationship between academic performance and class and racial segregation: Students who are not isolated in poor, racially segregated schools perform better on a variety of academic measures than those who are (Condrón, 2009; Logan et al., 2012).

The problem of low academic achievement is complex, and no single variable can explain it. At the same time, the magnitude and persistence of this problem suggest that we are looking at a phenomenon that is a public issue rather than a personal trouble. We discuss issues of class, race, and educational attainment further in Chapter 12.

Even deeply held and widely shared beliefs about society and social groups may be inaccurate—or more nuanced and complex than they appear on the surface. Until it is tested, common sense is merely conjecture. Careful research allows us to test our beliefs to gauge whether they are valid or merely

anecdotal. From a sociological standpoint, empirical evidence is granted greater weight than common sense. By basing their decisions on scientific evidence rather than on personal beliefs or common wisdom, researchers and students can draw informed conclusions and policy makers can ensure that policies and programs are data driven and maximally effective.

RESEARCH AND THE SCIENTIFIC METHOD

Scientific theories:

Explanations of how and why scientific observations are as they are.

Scientific theories are *explanations of how and why scientific observations are as they are*. A good scientific theory has the following characteristics:

- *It is logically consistent.* One part of the theory does not contradict another part.
- *It can be disproved.* If the findings contradict the theory, then we can deduce that the theory is wrong. Although we can say that testing has failed to disprove the theory, we cannot assume the theory is true if testing confirms it. Theories are always subject to further testing, which may point to needed revisions, highlight limitations, or strengthen conclusions.

Concepts: Ideas that summarize a set of phenomena.

Theories are made up of **concepts**, *ideas that summarize a set of phenomena*. Concepts are the building blocks of research and prepare a solid foundation for sociological work. Some key concepts in sociology are *social stratification, social class, power, inequality, and diversity*, which we introduced in the opening chapter.

Operational definition:

Describes the concept in such a way that it can be observed and measured.

To gather data and create viable theories, we need to define concepts in ways that are precise and measurable. A study of social class, for example, would need to begin with a working definition of that term. An **operational definition** of a concept *describes the concept in such a way that it can be observed and measured*. Many sociologists define *social class* in terms of dimensions such as income, wealth, education, occupation, and consumption patterns. Each of these aspects of class has the potential to be measurable. We may construct operational definitions in terms of *qualities* or *quantities* (Babbie, 1998; Neuman, 2000). In terms of qualities, we might say that the *upper-middle class* is composed of working professionals who have completed advanced degrees, even though there may be a broad income spread between those with a master's degree in fine arts and those with a master's degree in business administration. This definition is based on an assumption of *class* as a social position that derives from educational attainment. Alternatively, by using quantity as a key measure, we might operationally define *upper class* as households with an annual income greater than \$200,000 and *lower class* as households with an annual income of less than \$30,000. This definition takes income as the pre-eminent determinant of class position, irrespective of education or other variables.



Some research on bullying relies on self-reports, whereas other data come from peer reports. Research (Bronson & Carson, 2019) suggests that more than twice as many students (11%) were labeled bullies in peer reports than in self-reports (5%), highlighting the fact that definitions of what constitutes bullying may differ, and any method of data collection has limitations.

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Consider a social issue of contemporary interest—bullying. Imagine that you want to conduct a research study of bullying to determine how many female middle schoolers have experienced bullying in the past academic year. You would need to begin with a clear definition of *bullying* that operationalizes the term. That is, to measure how many girls have experienced bullying, you would need to articulate what constitutes bullying. Would you include physical bullying? If so, how many instances of being pushed or punched would constitute bullying? What kinds of verbal behaviors would be considered bullying? Would you include the newer phenomenon of cyberbullying? To study a phenomenon such as bullying, it is not enough to assume that we know it when we see it. Empirical research relies on the careful and specific definition of terms and the recognition of how definitions and methods affect research outcomes.

Relationships Between Variables

In studying social relationships, sociologists identify key *variables*. A **variable** is a concept that can take on two or more possible values. For instance, marital status can be married or unmarried, work status can be employed or unemployed, and geographic location can be urban, suburban, or rural. We can measure variables both *quantitatively* and *qualitatively*. **Quantitative variables** include factors that can be counted, such as rates of employment or unemployment, marriage rates, crime victimization rates, and drug use frequency. **Qualitative variables** are variables that express qualities and do not have numerical values. Qualitative variables might include attitudinal characteristics such as a parent's preference for a private or public school, or a commuter's preference for riding public transportation or driving to work.

Sociological research often tries to establish a relationship between two or more variables. Suppose you want to find out whether more education is associated with higher earnings. After asking people about their years of schooling and their annual incomes, both of which are quantitative variables, you could estimate the degree of *correlation* between the two. **Correlation**—literally, “co-relationship”—is the degree to which two or more variables are associated with one another. Correlating the two variables *years of education* and *annual income* demonstrates that the greater the education, the higher the income (Figure 2.2). Do you see the exception to that relationship? How might you explain it?

When two variables are correlated, we are often tempted to infer a **causal relationship**, a relationship between two variables in which one variable is the cause of the other. Nevertheless, even though two variables are correlated, we cannot assume that one causes the other. For example, ice cream sales rise during the summer, as does the homicide rate. These two events are correlated in the sense that both increase during the hottest months. Yet, because the rise in ice cream sales does not cause rates of homicide to increase (nor, clearly, does the rise in homicide rates cause a spike in ice cream consumption), these two phenomena do not have a causal relationship. Correlation does not equal causation.

Sometimes an observed correlation between two variables is the result of a **spurious relationship**—a correlation between two or more variables caused by another factor that is not being measured rather than a causal link between the variables themselves. In the example given earlier, the common factor missed in the relationship is the temperature. When it's hot, more people want to eat ice cream. Studies also show that rising temperatures are linked to an increase in violent crimes—although after a certain

Variable: A concept or its empirical measure that can take on two or more possible values.

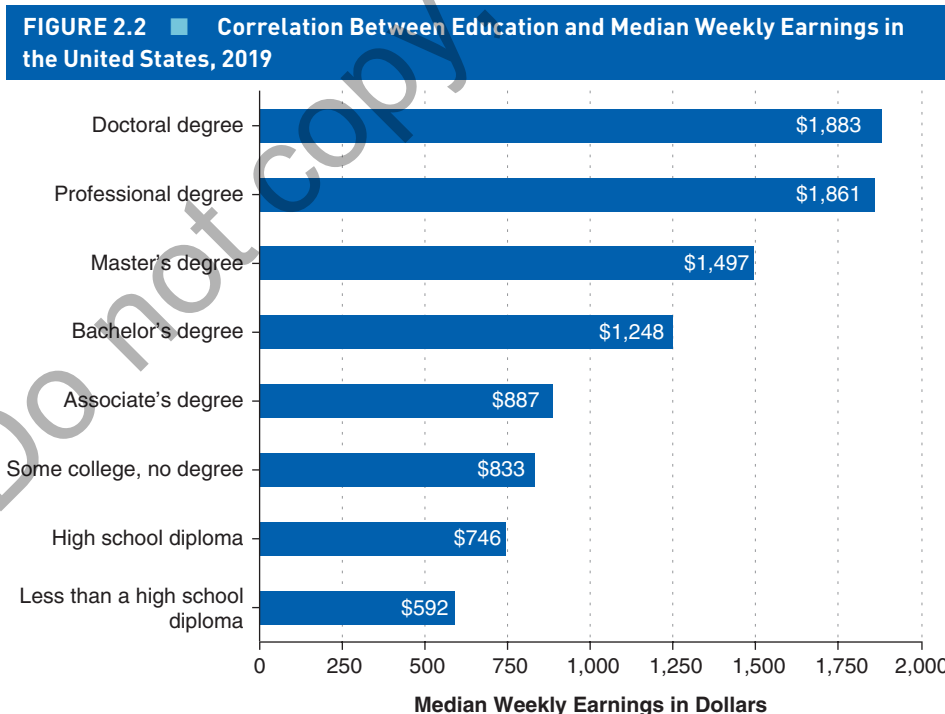
Qualitative variables: Variables that express qualities and do not have numerical values.

Quantitative variables: Factors that can be counted.

Correlation: The degree to which two or more variables are associated with one another.

Causal relationship: A relationship between two variables in which one variable is the cause of the other.

Spurious relationship: A correlation between two or more variables caused by another factor that is not being measured rather than a causal link between the variables themselves.



Source: Bureau of Labor Statistics. (2019). *Unemployment rates and earnings by educational attainment. Employment projections*. U.S. Government Printing Office.

temperature threshold (about 90 degrees), crimes wane again (Gamble & Hess, 2012). Among the reasons more violent crimes are committed in the warm summer months is the fact that people spend more time outdoors in social interactions, which can lead to confrontations.

Let's take a look at another example: Imagine that a college newspaper publishes a study concluding that coffee drinking causes poor test grades. The story is based on a survey of students at the college that found that those who reported drinking a lot of coffee the night before an exam scored lower than did their peers who had consumed little or no coffee. Having studied sociology, you wonder whether this relationship might be spurious. What is the "something else" that is not being measured here? Could it be that students who did not study in the days and weeks prior to the test and stayed up late the night before cramming—probably consuming a lot of coffee as they fought sleep—earned lower test grades than did their peers who studied earlier and got adequate sleep the night before the test? The overlooked variable, then, is the amount of studying students did in the weeks preceding the exam, and we are likely to find a positive correlation and evidence of causation in looking at time spent studying and grade outcomes.

Sociologists attempt to develop theories systematically by offering clear operational definitions, collecting unbiased data, and identifying evidence-based relationships between variables. Sociological research methods usually yield credible and useful data, but we must always critically analyze the results to ensure their validity and reliability and to check that hypothesized relationships are not spurious.

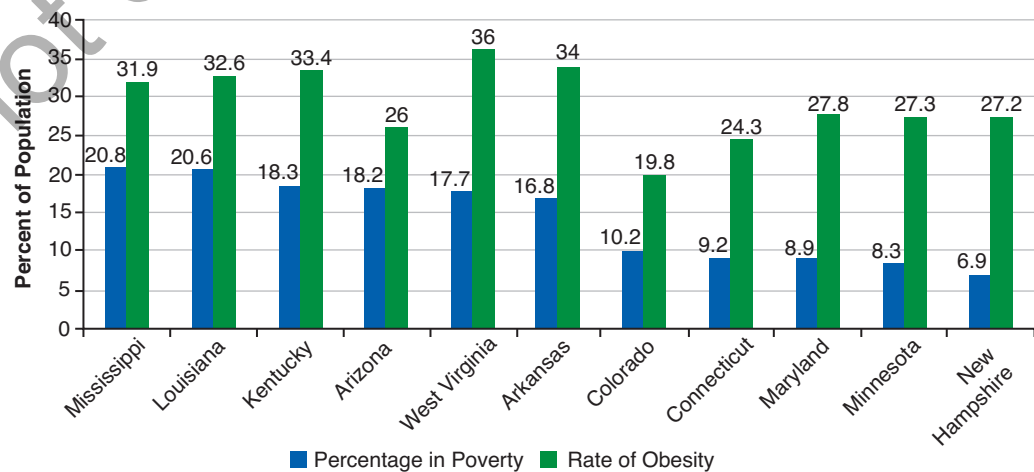
Testing Theories and Hypotheses

Once we have defined concepts and variables with which to work, we can endeavor to test a theory by positing a hypothesis. Hypotheses enable scientists to check the accuracy of their theories. For example, data show that some positive correlation exists between obesity and poverty rates at the state level: Mississippi, West Virginia, Kentucky, and Louisiana, which are among the poorest states in the country, are also among the states with the highest obesity rates (Figure 2.3). As well, four of the ten wealthiest states in the United States are among those with the lowest obesity rates. A **positive correlation** is *a relationship showing that as one variable rises or falls, the other does as well*. As noted earlier, sociologists are quick to point out that correlation does not equal causation. Researchers are interested in creating and testing hypotheses to explain cases of positive correlation—they are also interested in explaining exceptions to the pattern of correlation between two (or more) variables.

In fact, researchers have explored and hypothesized the relationship between poverty and obesity. Among the conclusions they have drawn is that living in poverty—and living in a poor neighborhood—puts people at higher risk of obesity, although the risk is pronounced for women and far

Positive correlation: A relationship showing that as one variable rises or falls, the other does as well.

FIGURE 2.3 Correlation Between Percentage in Poverty and Self-Reported Rates of Obesity, 2018



Sources: Centers for Disease Control and Prevention. (2018e). *Prevalence of self-reported obesity among U.S. adults by race/ethnicity, state and territory, BRFSS, 2018*. <https://www.cdc.gov/obesity/data/prevalence-maps.html>; United States Census Bureau. (2018). *Poverty: 2017 and 2018*. <https://www.census.gov/content/dam/Census/library/publications/2019/acs/acsbr18-02.pdf>

less clear for men (Hedwig, 2011; Smith, 2009). Factors that researchers have identified as contributing to a causal path between poverty and obesity include a lack of access to healthy food choices and safe, accessible spaces for physical exercise. A low-income area in which at least one third of residents live more than 1 mile away (or 10 miles away in rural areas) from a supermarket or large grocery store is referred to by the U.S. Department of Agriculture as a “food desert” (Block & Subramanian, 2015). Food deserts make it difficult for people living in poverty to access healthy food, especially if they do not have the time or affordable means to travel to a full-service supermarket. A deficit of time to cook healthy foods and to exercise, a lack of funds to purchase high-quality foods, and the stress induced by poverty are all contributing factors as well. Although the data cannot lead us to conclude decisively that poverty is a *cause* of obesity, research can help us to gather evidence that supports or refutes a hypothesis about the relationship between these two variables.

In the case of a **negative correlation**, *one variable increases as the other decreases*. As we discuss later in Chapter 11, which focuses on the family and society, researchers have found a negative correlation between male unemployment and rates of marriage. That is, as rates of male unemployment in a community rise, rates of marriage in the community fall. Observing this relationship, sociologists have conducted research to test explanations for this relationship (Edin & Kefalas, 2005; Wilson, 2010). What kind of hypothesis would you offer to test this relationship?

Keep in mind that we can never prove theories to be decisively right—we can only prove them wrong. Proving a theory right would require the scientific testing of absolutely every possible hypothesis based on that theory—a fundamental impossibility. In fact, good theories are constructed in a way that makes it logically possible to prove them wrong. This is Karl Popper’s (1959) famous **principle of falsification, or falsifiability**, which holds that *to be scientific, a theory must lead to testable hypotheses that can be disproved if they are wrong*.

Validity and Reliability

For theories and hypotheses to be testable, both the concepts used to construct them and the measurements used to test them must be accurate. When our observations adequately reflect the real world, our findings have **validity**—that is, *the degree to which concepts and their measurements accurately represent what they claim to represent*. For example, suppose you want to know whether violent or property crime in the United States has gone up or down. For years, sociologists depended on police reports to measure crime: Official crime statistics in the United States generally come from the Uniform Crime Report (UCR). Researchers could assess the validity of these official statistics, which are based on reported crimes, only if subsequent surveys were administered nationally to victims of crime. If the victim tallies matched those of the police reports, then researchers could say the police reports were a valid measure of crime in the United States. The National Crime Victimization Survey (NCVS) enables researchers to assess validity because it offers information on crimes that have not been reported to authorities and would thus not appear in the UCR.

Sociologists are also concerned with the reliability of their findings. **Reliability** is *the extent to which researchers’ findings are consistent with the findings of different studies of the same thing or with the findings of the same study over time*. Sociological research may suffer from problems of validity and reliability because of **bias**, *a characteristic of results that systematically misrepresent the true nature of what is being studied*. Bias can creep into research as a result of the use of inappropriate measurement instruments.

For example, suppose the administrator of a city wants to know whether homelessness has risen in recent years. She operationally defines *the homeless* as those who sleep in the street or in shelters and dispatches her team of researchers to city shelters to count the number of people occupying shelter beds



Physical exercise is a key to good health. Lack of access to safe places to walk and play can contribute to problems of overweight and obesity for individuals and communities.

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Negative correlation: A relationship showing that as one variable increases, the other decreases.

Principle of falsification (or falsifiability): The principle, advanced by philosopher Karl Popper, that to be scientific, a theory must lead to testable hypotheses that can be disproved if they are wrong.

Validity: The degree to which concepts and their measurements accurately represent what they claim to represent.

Reliability: The extent to which researchers’ findings are consistent with the findings of different studies of the same thing or with the findings of the same study over time.

Bias: A characteristic of results that systematically misrepresent the true nature of what is being studied.

Survey Question	THREAT OF VALIDATION		NO THREAT OF VALIDATION	
	Anonymous	Named	Anonymous	Named
Ever smoked?	63.5	72.9	60.5	67.8
Smoked in the last month?	34.5	39.5	25.9	21.8
Smoked in the last week?	26.0	25.5	14.4	17.6

Source: Adams, J., Parkinson, L., Sanson-Fisher, R. W., & Walsh, R. A. (2008). Enhancing self-report of adolescent smoking: The effects of bogus pipeline and anonymity. *Addictive Behaviors*, 33(10), 1291–1296.

or sleeping on street corners or park benches. A sociologist reviewing the research team's results might question the administrator's definition of what it means to be homeless and, by extension, her findings. Are the homeless solely those spending nights in shelters or on the streets? What about those who stay with friends or in a hotel after eviction, or camp out in their cars? In this instance, a sociologist might suggest that the city's measure is biased because it misrepresents (and undercounts) the homeless population by failing to define the concept in a way that captures the broad manifestations of homelessness.

Bias can also occur in research when respondents do not tell the truth (see Table 2.2). An example of this is a study in which respondents were asked whether they used illegal drugs or had driven while impaired. All were asked the same questions, but some were wired to a machine they were told was a lie detector. The subjects who thought their truthfulness was being monitored by a lie detector reported higher rates of illegal drug use than did subjects who did not. Based on the assumption that actual drug use would be about the same for both groups, the researchers concluded that the subjects who were not connected to the device were under-reporting their actual illegal drug use and that simply asking people about drug use would lead to biased findings because respondents would not tell the truth.

The reticence to truthfully self-report drug use and impaired driving may also be related to a phenomenon that researchers call **social desirability bias**, which is *a response bias based on the tendency of respondents to answer a question in a way that they perceive will be favorably received*. That is, many respondents want to present themselves positively to the interviewer. Social desirability bias is most likely to be a problem in studies that examine, for instance, participation in physical exercise (Brenner & Delamater, 2014) or "cyberloafing" at work (Akbulut et al., 2017). Because exercising and being productive at work are widely perceived as positive activities, there is greater reticence to report behavior that does not adhere to perceived norms. We discuss other ways in which social desirability bias may affect research findings further along in this chapter.

Objectivity in Scientific Research

Even if sociologists develop theories based on good operational definitions and collect valid and reliable data, like all human beings, they have passions and biases that may color their research. For example, criminologists (many of whom, until recently, were male) long ignored the criminality of women because they assumed that women were not disposed toward criminal behavior. Researchers therefore did not have an accurate picture of women and crime until this bias was recognized and rectified.

Personal values and beliefs may affect a researcher's **objectivity** or *ability to represent the object of study accurately*. In the 19th century, sociologist Max Weber argued that for scientific research to be objective, it has to have **value neutrality**—*the characteristic of being free of the influence of personal beliefs and opinions that would influence the course of research*. The sociologist should acknowledge personal biases and assumptions, make them explicit, and prevent them from getting in the way of observation and reporting.

How can we best achieve objectivity? First, recall Karl Popper's principle of falsification, which proposes that the goal of research is not to prove our ideas correct but to find out whether they are

Social desirability bias: A response bias based on the tendency of respondents to answer a question in a way that they perceive will be favorably received.

Objectivity: The ability to represent the object of study accurately.

Value neutrality: The characteristic of being free of personal beliefs and opinions that would influence the course of research.

wrong. To accomplish this, researchers must be willing to accept that the data they collect might contradict their most passionate convictions. Research should deepen human understanding, not prove a particular point of view.

A second way we can ensure objectivity is to invite others to draw their own conclusions about the validity of our data through **replication**, *the repetition of a previous study using a different sample or population to verify or refute the original findings*. For research to be replicated, the original study must spell out in detail the research methods employed. If potential replicators cannot conduct their studies exactly as the original study was performed, they might accidentally introduce unwanted variables. To ensure the most accurate replication of their work, researchers should archive original materials such as questionnaires and field notes and allow replicators access to them.

Popper (1959) describes scientific discovery as an ongoing process of confrontation and refutation. Sociologists usually subject their work to this process by publishing their results in scholarly journals. Submitted research undergoes a rigorous process of peer review, in which other experts in the field of study examine the work before the results are finalized and published. Once research has been published in a reputable journal such as the *American Sociological Review* or the *Journal of Health and Social Behavior*, other scholars read it with a critical eye. The study may then be replicated in different settings.

Replication: The repetition of a previous study using a different sample or population to verify or refute the original findings.

DOING SOCIOLOGICAL RESEARCH

Sociological research requires careful preparation and a clear plan that guides the work. The purpose of a sociological research project may be to obtain preliminary knowledge that will help formulate a theory or to evaluate an existing theory about society and social life. As part of the strategy, the researcher selects from a variety of **research methods**—*specific techniques for systematically gathering data*. In the following sections, we look at a range of research methods and examine their advantages and disadvantages. We also discuss how you might prepare a sociological research project of your own.

Research methods: Specific techniques for systematically gathering data.

Sociological Research Methods

Sociologists employ a variety of methods to learn about the social world (Table 2.3). Since each has strengths and weaknesses, a good research strategy may be to use several different methods. If they all yield similar findings, the researcher is more likely to have confidence in the results. The principal methods are the survey, fieldwork (either participant observation or detached observation), experimentation, working with existing information, and participatory research.

Survey Research

A **survey** uses a *questionnaire or interviews administered to a group of people in-person or by telephone or e-mail to determine their characteristics, opinions, and behaviors*. Surveys are versatile, and sociologists often use them to test theories or to gather data. Some survey instruments, such as National Opinion Research Center questionnaires, consist of closed-ended questions that respondents answer by choosing from among the responses presented. Others, such as the University of Chicago's Social Opportunity Survey, consist of open-ended questions that permit respondents to answer in their own words.

Survey: A research method that uses a questionnaire or interviews administered to a group of people in-person or by telephone or e-mail to determine their characteristics, opinions, and behaviors.

An example of survey research conducted for data collection is the largest survey in the nation, the U.S. Census, which is conducted every 10 years. The census is not designed to test any particular theory. Rather, it gathers voluminous data about U.S. residents that researchers, including sociologists, use to test and develop a variety of theories. In this text, you will find U.S. Census data in many chapters.

Sample: A small number of people; a portion of the larger population selected to represent the whole.

Usually, a survey is conducted on a *small number of people*, a **sample**, selected to represent a **population**, *the whole group of people to be studied*. The first step in designing a survey is to identify the population of interest. Imagine that you are doing a study of sociological factors that affect grades in college. Who would you survey? Members of a certain age group only? People in the airline industry? Pet owners? To conduct a study well, we need to identify clearly the survey population that will most

Population: The whole group of people studied.

TABLE 2.3 ■ Key Sociological Research Methods

RESEARCH METHOD	APPROPRIATE CIRCUMSTANCES
Survey research	When basic information about a large population is desired. Sociologists usually conduct survey research by selecting samples that are representative of the entire populations of interest.
Fieldwork	When detailed information is sought, and when surveys are impractical for getting the information desired (for example, in studying youth gangs or gamblers). Fieldwork usually relies on small samples, especially compared to surveys.
Detached observation	When researchers desire to stay removed from the people being studied and must gather data in a way that minimizes impact on the subjects. Detached observations are often supplemented with face-to-face interviews.
Participant observation	When first-hand knowledge of the subjects' direct experience is desired, including a deeper understanding of their lives.
Experimentation	When it is possible to create experimental and control groups that are matched on relevant variables but provided with different experiences in the experiment.
Use of existing information	When direct acquisition of data is either not feasible or not desirable because the event studied occurred in the past or because gathering the data would be too costly or too difficult.
Participatory research	When a primary goal is training people to gain political or economic power and acquire the necessary skills to do the research themselves.

effectively help us answer the research question. In your study, you would most likely choose to survey students now in college because they offer the best opportunity to correlate grades with circumstances and behaviors.

Once we have identified a population of interest, we need to select a sample, as we are unlikely to have the time or money to talk to all the members of a given population, especially if it is a large one. Other things being equal, larger samples better represent the population than do smaller ones. Nevertheless, with proper sampling techniques, sociologists can use small (and therefore inexpensive) samples to represent large populations. For instance, a well-chosen sample of 1,000 U.S. consumers can be used to represent 100,000 U.S. consumers with a fair degree of accuracy, enabling surveys to make predictions about economic behavior with reasonable confidence. Sampling is also used for looking at social phenomena such as marriages and online dating in a population: A recent paper, based on a sample of 4,200 U.S. adults, suggests that those with Internet access at home are more likely to have partners, even controlling for other factors (Rosenfeld & Thomas, 2012).

Ideally, a sample should reflect the composition of the population we are studying. For instance, if you want to be able to use your research data about college students to generalize about the entire college student population of the United States, you would need to collect proportional samples from two-year colleges, four-year colleges, large universities, community colleges, online schools, and so on. It would not be adequate to survey only students at online colleges or only female students at private four-year schools.

To avoid bias in surveys, sociologists may use **random sampling**, whereby *everyone in the population of interest has an equal chance of being chosen for the study*. Typically, they make or obtain a list of everyone in the population of interest. Then they draw names or phone numbers, for instance, by chance until the desired sample size is reached (today, such work can be done by computers). Large-scale random sample surveys permit researchers to draw conclusions about large numbers of people on the basis of small numbers of respondents. For our survey of college students, we could (theoretically) take all U.S. college students as our starting point and sample randomly from that group. We might also choose to use a stratified sample: In **stratified sampling**, *researchers divide a population into a series of subgroups (for instance, students at four-year public universities, students at two-year colleges, students at online schools, etc.) and take random samples from within each group*. This can be used to ensure representation from all subgroups (such as college students at different types of schools) in the final research sample.

Random sampling: Sampling in which everyone in the population of interest has an equal chance of being chosen for the study.

Stratified sampling: Dividing a population into a series of subgroups and taking random samples from within each group.

Researchers may assemble survey respondents through other sampling means. For example, they may use convenience sampling or snowball sampling. Imagine you are doing a survey of college students to learn what factors students consider when they choose a major. You may opt for a *convenience sample* of students at your school: This could include students in your classes; friends from clubs or organizations on campus; or, if you live on campus, people in your dormitory. The term *convenience sample* suggests that the selection is driven by convenience rather than by systematic sampling.

You might use *snowball sampling* if you know a lot of students in your major but not in other majors. In such a case, if you wanted a wider sample, you could ask a few people you do know in other majors to refer classmates from those majors. From those classmates, you could expand your reach still further into other majors. Your sample then expands like a snowball, building from a core group outward through recruitment. Researchers sometimes rely on snowball sampling when they are trying to access a group that is insular or difficult to reach, such as sex workers or drug addicts.

Nonrandom samples such as those gathered through convenience or snowball sampling can be suggestive of findings, but they are rarely generalizable by themselves and must be used with care.

In constructing surveys, sociologists are also concerned with ensuring that the questions and their possible responses will capture the respondents' points of view. The wording of questions is an important factor; poor wording can produce misleading results, as the following example illustrates. In 1993, an American Jewish Committee/Roper poll was taken to examine public attitudes and beliefs about the Holocaust. To the astonishment of many, the results indicated that fully 22% of survey respondents expressed a belief that the Holocaust had never happened. Not immediately noticed was the fact that the survey contained some very awkward wording, including the question "Does it seem possible or does it seem impossible to you that the Nazi extermination of the Jews never happened?" Can you see why such a question might produce a questionable result? The question's compound structure and double-negative wording almost certainly confused many respondents.

The American Jewish Committee released a second survey with different wording: "Does it seem possible to you that the Nazi extermination of the Jews never happened, or do you feel certain that it happened?" The results of the second poll were quite different. Only about 1% of respondents thought it was possible the Holocaust never happened, while 8% were unsure (Kagay, 1994). Despite the follow-up poll that corrected the mistaken perception of the previous poll's results, the new poll was not as methodologically rigorous as it could have been; a single survey question should ask for only one type of response. The American Jewish Committee's second survey contained a question that attempted to gauge two different responses simultaneously.

A weakness of surveys is that they may reveal what people *say* rather than what they *do*. Responses are sometimes self-serving, intended to make the interviewee look good in the eyes of the researcher. As noted earlier, social desirability bias is a response bias based on the tendency of respondents to answer a question in a way that they perceive will be favorably received. An example of this can be found in measures on voter turnout. Because voting is a socially desirable behavior, research suggests that self-reported voting behavior may not match up with actual voter turnout: That is, there is a tendency for people to say they voted in an election even if they did not (Presser, 1990). The respondent's bias toward choosing a response that they believe will be perceived as socially acceptable by the interviewer may also affect survey findings on political candidates or social issues. For example, in research conducted before the U.S. Supreme Court legalized same-sex marriage nationally, Powell (2013) found that there was a gap between public support expressed in pre-election surveys for local or state ballot initiatives legalizing same-sex marriage and actual voting-day support. He determined that "other things equal, election day opposition to same-sex marriage is between 5% and 7% greater than found in pre-election polls" (p. 1065). The wish to avoid stigma by voicing a position perceived to be socially acceptable to the interviewer may have an effect on survey responses to socially sensitive issues.

Question order can also affect survey findings in part because respondents have a desire to be consistent in their responses, making for a "consistency effect" (Schuman & Presser, 1981). A study (Wilson et al., 2008) on the issue of question order noted that "public opinion polls show that the public expresses greater support for gender-targeted AA [affirmative action] than race-targeted AA, but no research has addressed the extent to which expressed support for one group influences expressed support toward the other" (p. 514). The authors set out to determine if asking respondents about one or the

other affirmative-action target group would affect their stated attitudes about the other. In fact, they found that question order affected responses. Specifically, respondents who were asked about affirmative action for women *first* were more likely to favor it than to oppose it: That is, about 63% supported affirmative action for women and 29% rejected it. When respondents were asked about affirmative action for women *after* being asked about such programs for racial minorities, support dropped: 57% supported affirmative action for women and 34% rejected it. Similarly, a greater percentage of respondents expressed support for racially targeted affirmative action when the question was asked after a question about affirmative action for women (57%) than when it was asked first (50%). The authors write that “results suggest that for the American public as a whole, support for one type of AA program is indeed affected by whether that program is considered by itself or in the context of both types of AA programs” (p. 518).

Constructing a survey that accurately represents attitudes and practices is challenging. A well-constructed survey, however, can overcome these problems. Awareness of pitfalls is important. Furthermore, assuring respondents of anonymity, assigning interviewers with whom respondents feel comfortable, and building in questions that ask for the same information in different ways can reduce bias in survey research.

Fieldwork

Fieldwork: A research method that uses in-depth and often extended study to describe and analyze a group or community; also called *ethnography*.

Fieldwork is a research method that uses in-depth and often extended study to describe and analyze a group or community. Sometimes called *ethnography*, it takes the researcher into the field, where he or she directly observes—and sometimes interacts with—subjects in their social environment.

Social scientists, including sociologists and anthropologists, have employed fieldwork to study everything from hoboes and working-class gangs in the 1930s (Anderson, 1940; Whyte, 1943) to prostitution and drug use among inner-city women (Maher, 1997) to Vietnam veterans motorcycling across the country to the Vietnam Veterans Memorial in Washington, D.C. (Michalowski & Dubisch, 2001), to poor families experiencing eviction (Desmond, 2016a).

Most fieldwork combines several different methods of gathering information. These include interviews, detached observation, and participant observation.

An **interview** is a detailed conversation designed to obtain in-depth information about a person and their activities. When used in surveys, interview questions may be either open-ended or closed-ended. They may also be formal or informal. In fieldwork, the questions are usually open-ended to allow respondents to answer in their own words. Sometimes the interviewer prepares a detailed set of questions; at other times, the best approach is simply to have a list of relevant topics to cover.

Good researchers guard against influencing respondents' answers. In particular, they avoid the use of **leading questions**—questions that tend to elicit particular responses. Imagine a question on attitudes toward the marine environment that reads “Do you believe tuna fishing with broad nets, which leads to the violent deaths of dolphins, should be regulated?” The bias in this question is obvious—the stated association of broad nets with violent dolphin deaths creates a bias in favor of a *yes* answer. Accurate data depend on good questions that do not lead respondents to answer in particular ways.

Sometimes a study requires that researchers in the field keep a distance from the people they are studying and simply observe without getting involved. The people being observed may or may not know they are being observed. This approach is called *detached observation*. In his study of two delinquent gangs (the Saints and the Roughnecks), sociologist William J. Chambliss spent many hours observing gang members without being involved in what they were doing. With the gang members' permission, he sat in his car with the window rolled down so he could hear them talk and watch their behavior while they hung out on a street corner. At other times, he would observe them playing pool while he played at a nearby table. Chambliss sometimes followed gang members in



Sociologists may use snowball sampling in their research. Snowball sampling involves using a core group of known respondents as sources to contact new respondents, expanding the core group outward like a snowball.

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his car as they drove around in theirs and sat near enough to them in bars and cafés to hear their conversations. Through his observations at a distance, he was able to gather detailed information on the kinds of delinquencies the gang members engaged in. He was also able to unravel some of the social processes that led to their behavior and observe other people's reactions to it (Chambliss, 1973).

Detached observation is particularly useful when the researcher has reason to believe other forms of fieldwork might influence the behavior of the people to be observed. It is also helpful for checking the validity of what the researcher has been told in interviews. A great deal of sociological information about illegal behavior has been gathered through detached observation.

One problem with detached observation is that the information gathered is likely to be incomplete. Without talking to people, we are unable to check our impressions against their experiences. For this reason, detached observation is usually supplemented by in-depth interviews. In his study of the delinquent gang members, Chambliss (1973, 2001) periodically interviewed them to complement his findings and check the accuracy of his detached observations.

Another type of fieldwork is *participant observation*, a mixture of active participation and detached observation. Participant observation can sometimes be dangerous. Chambliss's (1988b) research on organized crime and police corruption in Seattle, Washington, exposed him to threats from the police and organized crime network members who feared he would reveal their criminal activities. Desmond's (2016a) work on eviction included participant observation; he spent significant amounts of time with the Milwaukee residents he studied, seeking to carefully document their voices and experiences.

Experimentation

Experiments are *research techniques for investigating cause and effect under controlled conditions*. We construct experiments to measure the effects of **independent or experimental variables** (*variables the researcher changes intentionally*) on **dependent variables** (*variables that change as a result of changes in other variables*). To put it another way, researchers modify one controllable variable (such as diet or exposure to violent movie scenes) to see what happens to another variable (such as willingness to socialize, or the display of aggression). Some variables, such as sex, ethnicity, and height, do not change in response to stimuli and thus do not make useful dependent variables.

In a typical experiment, researchers select participants who share characteristics such as age, education, social class, or experiences that are relevant to the experiment. The participants are then randomly assigned to two groups. The first, called the *experimental group*, is exposed to the independent variable—the variable the researchers hypothesize will affect the subjects' behavior. The second group is assigned to the *control group*. These subjects are not exposed to the independent variable—they receive no special attention. The researchers then measure both groups for the dependent variable. For example, if a neuroscientist wanted to conduct an experiment on whether listening to classical music affects performance on a math exam, he or she might have an experimental group listen to Mozart, Bach, or Chopin for an hour before taking a test. The control group would take the same test but would not listen to any music beforehand. In this example, exposure to classical music is the independent variable, and the quantifiable results of the math test are the dependent variable.

To study the relationship between violent video game play and aggression, researchers examined the sustained violent video game play and aggressive behavior of 1,296 Chinese adolescents ranging in age from 12 to 19 (Shao & Wang, 2019). Their results showed a strong correlation between playing violent video games and being more likely to engage in or approve of violence. Research in this field is complicated, however: Another study found that the level of competitiveness in a video game, and not the violence itself, had the greatest influence on aggressive behavior (Adachi & Willoughby, 2011). More research on this topic may help differentiate between the effects of variables and avoid conclusions based on spurious relationships.



When looking at the relationship between violent video games and violent behavior, researchers must account for many variables. What variables would you choose to study and why?

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Experiments: Research techniques for investigating cause and effect under controlled conditions.

Independent or experimental variables: Variables the researcher changes intentionally.

Dependent variables: Variables that change as a result of changes in other variables.

Working With Existing Information

Sociologists frequently work with existing information and data gathered by other researchers. Why would researchers choose to reinterpret existing data? Perhaps they want to do a secondary analysis of statistical data collected by an agency such as the U.S. Census Bureau, which makes its materials available to researchers studying issues ranging broadly from education to poverty to racial residential segregation. Or they may want to work with archival data to examine the cultural products—posters, films, pamphlets, and such—used by an authoritarian regime in a given period to legitimate its power or disseminate it by a social movement such as the civil rights movement to spread its message to the masses.

Statistical data include *quantitative information obtained from government agencies, businesses, research studies, and other entities that collect data for their own or others' use*. The U.S. Bureau of Justice Statistics, for example, maintains a rich storehouse of information on several criminal justice social indicators, such as prison populations, incidents of crime, and criminal justice expenditures. Many other government agencies routinely conduct surveys of commerce, manufacturing, agriculture, labor, and housing. International organizations such as the United Nations and the World Bank collect annual data on the health, education, population, and economies of nearly all countries in the world. Many businesses publish annual reports that yield basic statistical information about their financial performance.

Document analysis is *the examination of written materials or cultural products: previous studies, newspaper reports, court records, campaign posters, digital reports, films, pamphlets, and other forms of text or images produced by individuals, government agencies, private organizations, and others*. Nevertheless, because such documents are not always compiled with accuracy in mind, good researchers exercise caution in using them. People who keep records are often aware that others will see the records and take pains to avoid including anything unflattering. The diaries and memoirs of politicians are good examples of documents that are invaluable sources of data but that must be interpreted with great caution. The expert researcher looks at such materials with a critical eye, double-checking with other sources for accuracy where possible.

This type of research may include historical research, which entails the analysis of historical documents. Often, such research is comparative, examining historical events in several different countries for similarities and differences. Unlike historians, sociologists usually identify patterns common to different times and places; historians tend to focus on particular times and places and are less likely to draw broad generalizations from their research. An early master of the sociological approach to historical research was Max Weber (1919/1946, 1921/1979), who contributed to our understanding of (among many other things) the differences between religious traditions in the West and those in East Asia.

Content analysis is the systematic examination of forms of documented communication. A researcher can take a content analysis approach by coding and analyzing patterns in cultural products such as music, laws, tweets, blogs, and works of art. An exciting aspect of social science research is that your object of curiosity can become a research question. In 2009, sociologists conducted a content analysis of 403 gangsta rap songs to assess whether rap's reputation of being misogynistic (hostile to women) was justified (Weitzer & Kubrin, 2009). The analysis found that although only about a fifth of the songs in the sample contained lyrics that were notable for their "objectification, exploitation, and victimization" of women (p. 25), most portrayals of women were still gender stereotypical and disempowering.

Participatory Research

Although sociologists usually try to avoid having an impact on the people they study, one research method is employed specifically to foster change. *Participatory research* supports an organization or community trying to improve its situation when it lacks the necessary economic or political power to do so by itself. The researcher fully participates by training the members to conduct research on their own while working with them to enhance their power (Freire, 1972; Whyte, 1991). Such research might be part of, for instance, empowering a community to act against the threat of HIV/AIDS, as has

Statistical data: Quantitative information obtained from government agencies, businesses, research studies, and other entities that collect data for their own or others' use.

Document analysis: The examination of written materials or cultural products: previous studies, newspaper reports, court records, campaign posters, digital reports, films, pamphlets, and other forms of text or images produced by individuals, government agencies, private organizations, or others.

been done in places such as San Francisco, California, and Nairobi, Kenya. Participatory research is an effective way of conducting an empirical study while also furthering a community or organizational goal that will benefit from the results of the study.

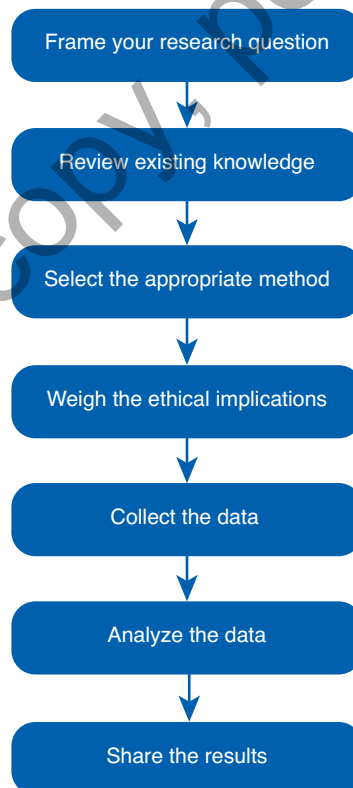
DOING SOCIOLOGY: A STUDENT'S GUIDE TO RESEARCH

Sociological research seldom follows a formula that indicates exactly how to proceed. Sociologists often have to feel their way as they go, responding to the challenges that arise during research and adapting new methods to fit the circumstances. Thus, the stages of research can vary, even when sociologists agree about the basic sequence. At the same time, for student sociologists, it is useful to understand the key building blocks of good sociological research. As you read through the following descriptions of the stages (Figure 2.4), think about a topic of interest to you and how you might use that as the basis for an original research project.

Frame Your Research Question

“Good research,” Thomas Dewey observed, “scratches where it itches.” Sociological research begins with the formulation of a question or questions to be answered. Society offers an endless spectrum of compelling issues to study: Does exposure to violent video games affect the incidence of aggressive behavior in adolescents? Does religious faith affect voting behavior? Is family income a good predictor of performance on standardized college entrance tests such as the ACT or SAT? Beyond the descriptive

FIGURE 2.4 ■
Sociological Research
Formula



aspects of social phenomena, sociologists are also interested in how relationships between the variables they examine can be explained.

Formulating a research question precisely and carefully is one of the most important steps toward ensuring a successful research project. Research questions come from many sources. Some arise from problems that form the foundation of sociology, including an interest in socioeconomic inequalities and their causes and effects or the desire to understand how power is exercised in social relationships. Sociologists are also mindful that solid empirical data are important to public policies on issues of concern such as poverty, occupational mobility, and domestic violence.

Keep in mind that you also need to define your terms. Recall our discussion of operationalizing concepts. For example, if you are studying middle school bullying, you need to make explicit your definition of bullying and how that will be measured. The same holds true if you are studying a topic such as illiteracy or aggressive behavior.

Review Existing Knowledge

Once you identify the question you want to ask, you need to conduct a review of the existing literature on your topic. The literature may include published studies, unpublished papers, books, dissertations, government documents, newspapers and other periodicals, and increasingly, data disseminated on the Internet. The key focus of the literature review, however, is usually published and peer-reviewed research studies. Your purpose in conducting the literature review is to learn about studies that have already been done on your topic of interest so that you can set your research in the context of existing studies. You will also use the literature review to highlight how your research will contribute to this body of knowledge.

Select the Appropriate Method

Now you are ready to think about how your research question can best be answered. Which of the research methods described earlier will give the best results for the project and is most feasible for your research circumstances, experience, and budget?

If you wish to obtain basic information from a relatively large population in a short period of time, then a survey is the best method to use. If you want to obtain detailed information about a smaller group of people, then interviews might be most beneficial. Participant observation and detached observation are ideal research methods for verifying data obtained through interviews or, for the latter, when the presence of a researcher might alter the research results. Document analysis and historical research are good choices for projects focused on inaccessible subjects and historical sociology. Remember, sociological researchers often use multiple methods.

Weigh the Ethical Implications

Research conducted on other human beings—as much of sociological research is—poses certain ethical problems. An outpouring of outrage after the discovery of gruesome experiments conducted by the Nazis during World War II prompted the adoption of the Nuremberg Code, a collection of ethical research guidelines developed to help prevent such atrocities from ever happening again (Table 2.4). In addition to these basic guidelines, scientific societies throughout the world have adopted their own codes of ethics to safeguard against the misuse and abuse of human subjects.

Before you begin your research, it is important that you familiarize yourself with the American Sociological Association's code of ethics as well as with the standards of your school, and carefully follow both. Ask yourself whether your research will cause the subjects any emotional or physical harm. How will you guarantee their anonymity? Does the research violate any of your own ethical principles?

Most universities and research institutes require researchers to complete particular forms before undertaking experiments using human subjects, describing the research methods to be used and the groups of subjects who will take part. Depending on the type of research, a researcher may need to obtain written agreement from the subjects for their participation. Approval of research involving human subjects is granted with an eye to both fostering good research and protecting the interests of those partaking in the study.

TABLE 2.4 ■ The Nuremberg Code

DIRECTIVES FOR HUMAN EXPERIMENTATION	
1.	The voluntary consent of the human subject is absolutely essential.
2.	The experiment should be such as to yield fruitful results for the good of society.
3.	The experiment should be so designed and based on the results of animal experimentation and a knowledge of the natural history of the disease.
4.	The experiment should be so conducted as to avoid all unnecessary physical and mental suffering and injury.
5.	No experiment should be conducted where there is an <i>a priori</i> reason to believe that death or disabling injury will occur.
6.	The degree of risk to be taken should never exceed that determined by the humanitarian importance of the problem to be solved by the experiment.
7.	Proper preparations should be made and adequate facilities provided to protect the experimental subject against even remote possibilities of injury, disability, or death.
8.	The experiment should be conducted only by scientifically qualified persons.
9.	During the course of the experiment, the human subject should be at liberty to bring the experiment to an end.
10.	During the course of the experiment, the scientist in charge must be prepared to terminate the experiment at any stage if he has probable cause to believe, in the exercise of the good faith, superior skill, and careful judgment required of him, that a continuation of the experiment is likely to result in injury, disability, or death to the experimental subject.

Source: The Nuremberg Code. *United States Holocaust Memorial Museum*. <https://www.ushmm.org/information/exhibitions/online-exhibitions/special-focus/doctors-trial/nuremberg-code>

Collect and Analyze the Data

Collecting data is the heart of research. It is time-consuming but exciting. During this phase, you will gather the information that will allow you to contribute to the sociological understanding of your topic. If your data set is qualitative (for example, open-ended responses to interview questions or observations of people), you will proceed by carefully reviewing and organizing your field notes, documents, and other sources of information. If your data set is quantitative (for example, completed closed-ended surveys), you will proceed by entering data into spreadsheets, comparing results, and analyzing your findings using statistical software.

Your analysis should offer answers to the research questions with which you began the study. Be mindful in interpreting your data, and avoid conclusions that are speculative or not warranted by the actual research results. Do your data support or contradict your initial hypothesis? Or are they simply inconclusive? Report *all* of your results. Do your findings have implications for larger theories in the discipline? Do they suggest the need for further study of another dimension of the issue at hand? Good research need not have results that unequivocally support your hypothesis. A finding that refutes the hypothesis can be instructive as well.

Share the Results

However fascinating your research may be to you, its benefits are amplified when you take advantage of opportunities to share it with others. You can share your findings with the sociological community by publishing the results in academic journals. Before submitting research for publication, you must learn which journals cover your topic areas and review those journals' standards for publication. Some colleges and universities sponsor undergraduate journals that offer opportunities for students to publish original research.



During the Nuremberg Trials, which brought key figures of the Nazi Party of Germany to justice, the practices of some Nazi medical personnel were found to be unethical and even criminal. The Nuremberg Code, which emerged from these trials, established principles for any type of human experimentation.

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Other outlets for publication include books, popular magazines, newspapers, video documentaries, and websites. Another way to communicate your findings is to give a presentation at a professional meeting. Many professional meetings are held each year; at least one will offer a panel suited to your topic. In some cases, high-quality undergraduate papers are selected for presentation. If your paper is one, relevant experts at the meeting will likely help you interpret your findings further.

WHAT'S NEXT? SOCIOLOGY AND THE WORLD ONLINE

In this chapter, you learned about the process of research in sociology. As you will see throughout this text, sociologists have endeavored to study a wide variety of subjects, from early efforts such as Émile Durkheim's classical study of suicide to contemporary studies of the relationship between video game play and aggression. The 2020s will open the door to new—and largely unprecedented—areas of research for sociologists. Consider the topic of young people spending time online. Over the last decade or so, survey research has documented a marked rise in the time children and teens spend engaged with social media, watching videos, playing games, or doing other activities online. About 45% of teens say they are online almost constantly (Pew Research Center, 2018a).

Researchers have also noted some disturbing trends with respect to esteem, depression and anxiety, and loneliness, which appear to be somewhat more acute among young people who spend a lot of time online. A study from the *Canadian Journal of Psychiatry* showed that the more time kids spent on digital screens, the more severe were their symptoms of depression and anxiety (Boers et al., 2020). While we know that correlation is not causation, data are suggestive of a relationship that invites further examination.

So what's new in the 2020s? The COVID-19 pandemic that saw the mass retreat of children and teens from daycares, K–12 schools, and colleges and universities in early 2020 has also seen the rapid rise in hours these young people are spending online, whether for education, interaction, or entertainment. Early data show that children ages 6–12 are spending at least 50% more time in front of screens daily, and traffic to kids' apps and digital services has increased by nearly 70% in the United States (Cheng & Wilkinson, 2020).

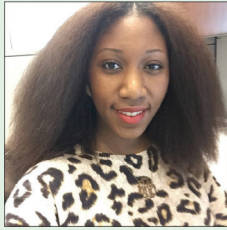
Before the pandemic, many scientists, medical professionals, and teachers were concerned about the time young people were spending online: Recommendations to get up, get out, and get off one's phone were more a norm than an anomaly. In the acute phase of the pandemic, this recommendation fell to the wayside and, as we just discussed, hours spent on a computer or smartphone grew precipitously. What will this mean for a generation of young people already steeped in technology? What will be the benefits? What about the costs? Consider what kinds of research questions sociologists may want to ask in the future and what methods will help to answer them. What would you like to know?

WHAT CAN I DO WITH A SOCIOLOGY DEGREE?

Quantitative Research Skills

Sociologists use quantitative research skills to conduct systematic empirical investigations of social phenomena using statistical methods. Quantitative research encompasses those studies in which data are expressed in terms of numbers. Important sources of quantitative data include surveys and observations. The objective of quantitative research in sociology is to gather rigorous data and to use numerical data to characterize the dimensions of an issue or the extent of a problem (this could include, for instance, the collection of statistical data on rates of obesity and poverty in neighborhoods or states and the calculation of the correlation of the two phenomena). Data may be used to develop or test hypotheses about the roots of a sociological phenomenon or problem.

Knowledge of quantitative methods is a valuable skill in today's job market. Learning to collect and analyze quantitative data, which is an important part of a sociological education, prepares you to do a wide variety of job tasks, including survey development, questionnaire design, market research, brand health tracking, and financial quantitative modeling and analysis.



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I work in the Center for Survey Measurement as a statistician at the U.S. Census Bureau. The goal of the Census Bureau is to provide timely, accurate, and quality data while minimizing the various sources of survey error. When fielding a survey, it must go through all of the phases of what we call the survey life cycle. This includes tasks such as project planning, data collection, data analyses, and reporting. During my first

year at Census, I used statistical software packages to manipulate, edit, and analyze data for surveys on education. Statistical software is a valuable tool for those who work with data. I used it frequently to run basic descriptive statistics and to check the data for error. For example, if a respondent gave a date of birth that indicated they were 12 years of age and listed his or her marital status as married, I would flag these data points for potential inconsistencies.

In my current role at Census, I do a lot more survey research where I specialize in structured cognitive interviewing and develop survey questions. The core sociology courses I took both during undergraduate and graduate school prepared me for my career at Census. I use a lot of what I learned in my courses on sociological research methods and data analysis to choose the best research method and work effectively and accurately with the Census Bureau's survey data. People often look puzzled when they learn you want to study sociology, but what they do not realize is that it's a multidimensional field. Sociology and my professors taught me both the qualitative and quantitative skills I needed to land my dream job. I wouldn't change a thing!

Career Data: Statisticians and Mathematicians

- 2019 Median Pay: \$92,030 per year
- \$44.35 per hour
- Typical Entry-Level Education: Master's degree
- Job Growth, 2019–2029: 33% (much faster than average)

Source: Bureau of Labor Statistics. (2019). *Occupational outlook handbook*.

SUMMARY

- Unlike commonsense beliefs, sociological understanding puts our biases, assumptions, and conclusions to the test.
- As a science, sociology combines logically constructed theory and systematic observation to explain human social relations.
- **Inductive reasoning** generalizes from specific observations; **deductive reasoning** consists of logically deducing the empirical implications of a particular theory or set of ideas.
- A good theory is logically consistent, testable, and valid. The **principle of falsification** holds that if theories are to be scientific, they must be formulated in such a way that they can be disproved if wrong.
- Sociological **concepts** must be operationally defined to yield measurable or observable variables. Often, sociologists operationally define **variables** so they can measure these in quantifiable values and assess **validity** and **reliability** to eliminate **bias** in their research.
- Quantitative analysis permits us to measure correlations between variables and identify **causal relationships**. Researchers must be careful not to infer causation from correlation.

- Qualitative analysis is often better suited than **quantitative research** to producing a deep understanding of how the people being studied view the social world. On the other hand, it is sometimes difficult to measure the reliability and validity of **qualitative research**.
- Sociologists seek **objectivity** when conducting their research. One way to help ensure objectivity is through the **replication** of research.
- Research strategies are carefully thought-out plans that guide the gathering of information about the social world. They also suggest the choice of appropriate **research methods**.
- Research methods in sociology include **survey** research (which often relies on random sampling), **fieldwork** (including participant observation and detached observation), **experiments**, working with existing information, and participatory research.
- Sociological research typically follows seven steps: framing the research question, reviewing the existing knowledge, selecting appropriate methods, weighing the ethical implications of the research, collecting data, analyzing data, and sharing the results.
- To be ethical, researchers must be sure their research protects the privacy of subjects and does not cause them unwarranted stress. Scientific societies throughout the world have adopted codes of ethics to safeguard against the misuse and abuse of human subjects.

KEY TERMS

bias (p. 33)	qualitative research (p. 27)
causal relationship (p. 31)	qualitative variables (p. 31)
concepts (p. 30)	quantitative research (p. 27)
correlation (p. 31)	quantitative variables (p. 31)
deductive reasoning (p. 27)	random sampling (p. 36)
dependent variables (p. 39)	reliability (p. 33)
document analysis (p. 40)	replication (p. 35)
experiments (p. 39)	research methods (p. 35)
fieldwork (p. 38)	sample (p. 35)
hypotheses (p. 27)	scientific method (p. 27)
independent or experimental variables (p. 39)	scientific theories (p. 30)
inductive reasoning (p. 27)	social desirability bias (p. 34)
interview (p. 38)	spurious relationship (p. 31)
leading questions (p. 38)	statistical data (p. 40)
negative correlation (p. 33)	stratified sampling (p. 36)
objectivity (p. 34)	survey (p. 35)
operational definition (p. 30)	validity (p. 33)
population (p. 35)	value neutrality (p. 34)
positive correlation (p. 32)	variable (p. 31)
principle of falsification (or falsifiability) (p. 33)	

DISCUSSION QUESTIONS

1. Think about a topic of contemporary relevance that interests you (for example, poverty, juvenile delinquency, teen births, or racial neighborhood segregation). Using what you learned in this chapter, create a simple research question about the topic. Match your research question to an appropriate research method. Share your ideas with classmates.
2. What is the difference between quantitative and qualitative research? Give an example of each from the chapter. In what kinds of cases might one choose one or the other research method to effectively address an issue of interest?

3. Sociologists often use interviews and surveys as methods for collecting data. What are potential problems with these methods of which researchers need to be aware? What steps can researchers take to ensure that the data they are collecting are of good quality?
4. Imagine that your school has recently documented a dramatic rise in plagiarism reported by teachers. Your sociology class has been invited to study this issue. Consider what you learned in this chapter about survey research and design a project to assess the problem.
5. As discussed in the chapter, researchers have used experiments to test the relationship between playing violent video games and aggressive behavior. Results of such experiments are mixed, as some suggest a significant correlation between sustained play and a willingness to engage in or approve of aggressive behavior, while others do not show a clear relationship, or attribute the relationship to another variable—the level of competitiveness of the games. How would you design an experiment to test this relationship? What ethical challenges might experiments testing this relationship face? How would you ensure that your experiment conforms to the ethics established for human subjects research?

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