FUNDAMENTALS OF
Research in Criminology and Criminal Justice

With Selected Readings

RONET D. BACHMAN • **RUSSELL K. SCHUTT** • **PEGGY S. PLASS**

Science, Society, and Criminological Research

LEARNING OBJECTIVES

1. Describe the four common errors in everyday reasoning.

2. Define social science compared to pseudoscience.

3. Explain the motivations of social research.

4. Identify the four types of social research.

5. Understand the differences between quantitative and qualitative methods and the advantages of mixed methods.

▣ What Do We Have in Mind?

The population of the United States all too frequently mourns the deaths of young, innocent lives taken in school shootings. The deadliest elementary school shooting took place on December 14, 2012, when a 20-year-old man named Adam Lanza walked into an elementary school in Newtown, Connecticut, armed with several semiautomatic weapons and killed 20 children and six adults. On April 16, 2007, Cho Seung-Hui perpetrated the deadliest college mass shooting by killing 32 students, faculty, and staff and left over 30 others injured on the campus of Virginia Tech in Blacksburg, Virginia. Cho was armed with two semiautomatic handguns that he had legally purchased and a vest filled with ammunition. As police were closing in on the scene, he killed himself. The deadliest high school shooting occurred on April 20, 1999, when Eric Harris and Dylan Klebold killed 12 students and a teacher before killing themselves at Columbine High School in suburban Colorado.

None of these mass murderers were typical terrorists, and each of these incidents caused a media frenzy. Headlines such as "The School Violence Crisis" and "School Crime Epidemic" were plastered across national newspapers and weekly news journals. Unfortunately, the media plays a large role in how we perceive both problems and solutions. In fact, 95% of Americans say that mass media sources such as television and newspapers are their main source of information on crime and violence (Surrette, 1998). What are your perceptions of violence committed by youth, and how did you acquire them? What do you believe are the causes of youth violence? Many factors have been blamed for youth violence in American society, including the easy availability of guns, the lack of guns in classrooms for protection, the use of weapons in movies and television, the moral decay of our nation, poor parenting, unaware teachers, school and class size, racial prejudice, teenage alienation, the Internet and the World Wide Web, anti-Semitism, and rap and rock music, and the list goes on.

You probably have your own ideas about the factors related to violence in general and youth violence in particular. However, these beliefs may not always be supported by empirical research. In fact, the factors often touted by politicians and the media to be related to violence are not always supported by empirical evidence. In the rest of this chapter, you will learn how the methods of social science research go beyond stories in the popular media to help us answer questions such as "What are the causes of youth violence?" By the chapter's end, you should understand how scientific methods used in criminal justice and criminology can help us understand and answer research questions in this discipline.

Reasoning About the Social World

Case Study: Why Do Kids Kill?

The story of just one murderous youth raises many questions. Take a few minutes to read each of the following questions and jot down your answers. Don't overthink or worry too much about the questions. This is not a test; there are no wrong answers.

- How would you describe Eric Harris?

- Why do you think Eric Harris wanted to kill other students?

- Was Eric Harris typical of other teenage murderers?

- How have you learned about youth violence?

Now let us consider the possible answers to one of these questions. The information about Eric Harris is somewhat inconsistent (Duggan, Shear, & Fisher, 1999). He was the 18-year-old son of white, middle-class professionals. He had an older brother who attended the University of Colorado. Harris apparently thought of himself as a white supremacist, but he also loved music by antiracist rock bands. On his webpage, he quoted from KMFDM, a German rock band whose song "Waste" includes these lyrics: "What I don't say I don't do. What I don't do I don't like. What I don't like I waste." Online, Harris referred to himself as "Darkness."

Do you have enough information now to understand why Eric went on a shooting rampage in his school?

A year before the shootings at Columbine High School, Harris was arrested on a felony count of breaking into a car. A juvenile court put him on probation, required him to perform community service and take criminal justice classes, and sent him to a school counseling program. He was described by one of his probation officers as a "very bright young man who is likely to succeed in life."

Now can you construct an adequate description of Eric Harris? Can you explain the reason for his murderous rampage? Or do you feel you need to know more about him, about his friends and the family in which he grew up? And how about his experiences in school and with the criminal justice system? We have attempted to investigate just one person's experiences, and already our investigation is spawning more and more questions.

Questions and Answers

We cannot avoid asking questions about the actions and attitudes of others. We all try to make sense of the complexities of our social world and our position in it, in which we have quite a personal stake. In fact, the more that you begin to think like a social scientist, the more questions will come to mind.

But why does each question have so many possible answers? Surely our individual perspectives play a role. One person may see a homicide offender as a victim of circumstance, while another person may see the same individual as inherently evil. Answers to questions we ask in the criminological sciences vary because individual life experiences and circumstances vary. When questions concern not just one person but many people or general social processes, the number of possible answers quickly multiplies. In fact, people have very different beliefs about the factors responsible for mass shootings. Exhibit 1.1 displays Gallup Poll results from the following question, "Thinking about mass shootings that have occurred in the U.S. in recent years, from what you know or have read, how much do you think each of the following factors is to blame for the shootings?" As you can see, a large percentage blame the mental health system—4 out of 10 blame easy access to guns as well—but nearly 1 out of 5 blame inflammatory language from political commentators.

Everyday Errors in Reasoning

People give different answers to research questions for yet another reason: It is simply too easy to make errors in logic, particularly when we are analyzing the social world in which we ourselves are conscious participants. We can call some of these *everyday errors,* because they occur so frequently.

For evidence of everyday errors, just listen to your conversations or the conversations of others for one day. At some point in the day, it is inevitable that you or someone you are talking with will say something like, "Well, I knew a person who did *X*, and then *Y* happened." From this one piece of information, you draw a conclusion about the likelihood of *Y*. Four general errors in everyday reasoning can be made: overgeneralization, selective or inaccurate observation, illogical reasoning, and resistance to change.

Overgeneralization

Overgeneralization, an error in reasoning, occurs when we conclude that what we have observed or what we know to be 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. We have the ability (and inclination) to interact with just a small fraction of the individuals who live in the world, especially in a limited span of time.

Selective or Inaccurate Observation

Selective observation is choosing to look only at things that align with our preferences or beliefs. When we are inclined to criticize individuals or institutions, it is all too easy to notice their every failing. We are also more inclined to see the failings of others who are "not like us." If we are convinced in advance that all kids who are violent are unlikely to be rehabilitated and

Exhibit 1.1 Responses to the Question, "Thinking About Mass Shootings That Have Occurred in the U.S. in Recent Years, From What You Know Or Have Read, How Much Do You Think Each of the Following Factors Is to Blame for the Shootings?"

|	Great deal %	Fair amount %	Not much %	Not at all %
Failure of the mental health system to identify Individuals who are a danger to others	48	32	11	8
Easy access to guns	40	21	16	20
Drug use	37	29	17	15
Violence in movies, video games, and music lyrics	32	24	23	20
The spread of extremist viewpoints on the Internet	29	28	22	15
Insufficient security at public buildings including businesses and schools	29	29	26	14
Inflammatory language from prominent political commentators	18	19	30	28

Source: Reprinted with permission from Gallup.

will go on to commit violent offenses in adulthood, we will probably find many cases confirming our beliefs. But what about other youths who have become productive and stable citizens after engaging in violence as adolescents? If we acknowledge only the instances that confirm our predispositions, we are victims of our own selective observation. Exhibit 1.2 depicts the difference between overgeneralization and selective observation.

Our observations also can simply be inaccurate. If a woman says she is *hungry* and we think she said she is *hunted,* we have made an inaccurate observation. If we think five people are standing on a street corner when there are actually seven, we have also made an inaccurate observation. Such errors occur often in casual conversation and in everyday observation of the world around us. In fact, our perceptions do not provide a direct window to the world around us, for what we think we have sensed is not necessarily what we 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).

Illogical Reasoning

When we prematurely jump to conclusions or argue on the basis of invalid assumptions, we are using **illogical reasoning**. For example, it is not reasonable to propose that depictions of violence in media such as television and movies cause violence if evidence indicates that the majority of those who watch such programs do not become violent. However, it is also illogical

Exhibit 1.2	The Difference Between Overgeneralization and Selective Observation

Overgeneralization: "Those people are never satisfied."

Selective Observation: "Those people are never satisfied."
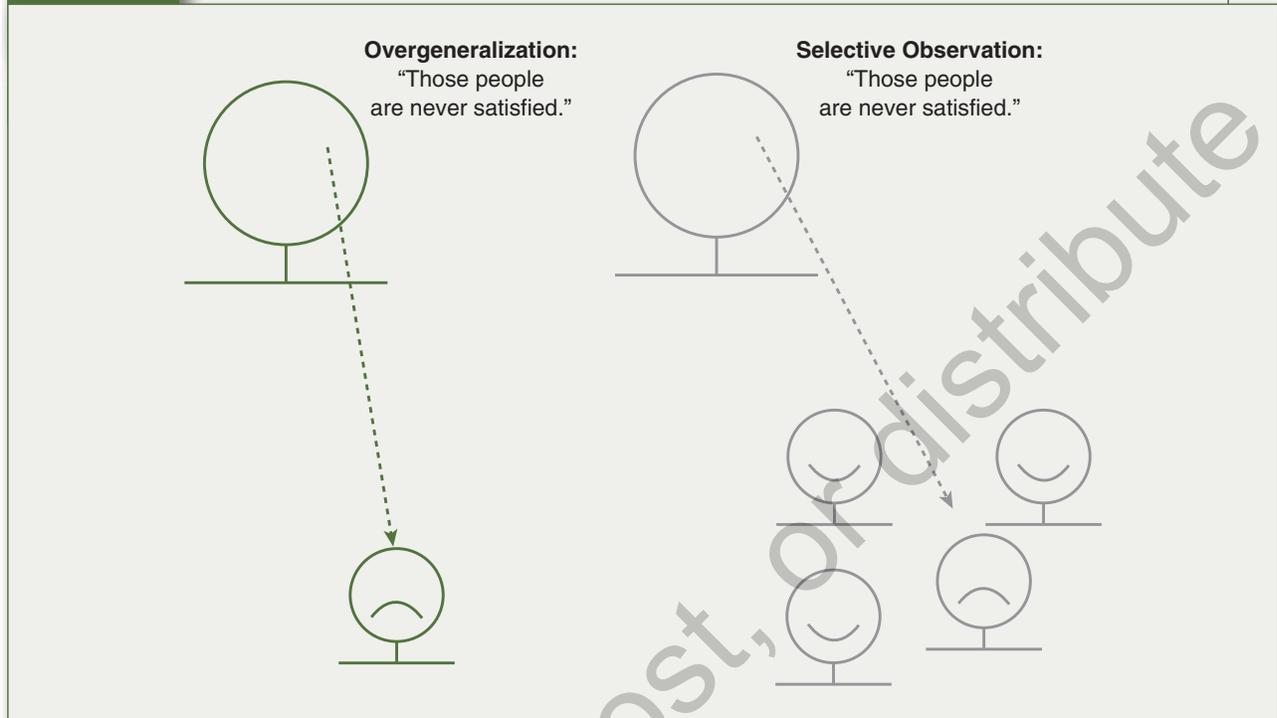
to assume that media depictions of gratuitous violence have no effect on individuals. Of course, logic that seems valid to one person can seem twisted or unsound to another; the problem emerges when our reasoning stems from different assumptions rather than a failure to think straight.

Resistance to Change

Resistance to change, the reluctance to change our ideas in light of new information, may occur for several reasons:

- *Ego-based commitments.* We all learn to greet with some skepticism the claims by leaders of companies, schools, agencies, and so on that people in their organization are happy, that revenues are growing, that services are being delivered in the best possible way, and so forth. We know how tempting it is to make statements about the social world that conform to our own needs rather than to the observable facts. It also can be difficult to admit that we were wrong once we have staked out a position on an issue.

- *Excessive devotion to tradition.* Some degree of devotion to tradition is necessary for the predictable functioning of society. Social life can be richer and more meaningful if it is allowed to flow along the paths charted by those who have preceded us. But too much devotion to tradition can stifle adaptation to changing circumstances. When we distort our observations or alter our reasoning so that we can maintain beliefs that "were good enough for my grandfather, so they're good enough for me," we hinder our ability to accept new findings and develop new knowledge.

- *Uncritical agreement with authority.* If we lack the courage to critically evaluate the ideas of those in positions of authority, we will have little basis for complaint if they exercise their authority over us in ways we do not like. And if

we do not allow new discoveries to call our beliefs into question, our understanding of the social world will remain limited. People often accept the beliefs of those in positions of authority without question.

Now take just a minute to reexamine the beliefs about youth violence that you recorded earlier. Did you settle on a simple explanation even though the reality was far more complex? Were your beliefs influenced by your own ego and feelings about your similarities to or differences from individuals prone to violence? Are your beliefs perhaps based on depictions of violence in the media or fiction? Did you weigh carefully the opinions of authority figures, including politicians, teachers, and even your parents, or just accept or reject those opinions? Could knowledge of research methods help to improve your own understanding of the factors related to violent behavior? By now, you can see some of the challenges faced by social scientists who study issues related to crime and the criminal justice system.

Social science A set of logical, systematic, documented methods for investigating nature and natural processes; the knowledge produced by these investigations

You do not have to be a scientist or use sophisticated research techniques to recognize and avoid these four errors in reasoning. If you recognize these errors for what they are and make a conscious effort to avoid them, you can improve your own reasoning. Simply stated, refrain from stereotyping people, avoid jumping to conclusions, and look at the big picture. These are the same errors that the methods of **social science** are designed to help us avoid.

How the Scientific Approach Is Different

The scientific approach to answering questions about the social world is designed to greatly reduce these potential sources of error in everyday reasoning. Social science relies on systematic methods to answer questions, and it does so in a way that allows others to inspect and evaluate its methods. In the realm of social research, these methods are not so unusual. After all, they involve asking questions, observing social groups, and counting people, which we often do in our everyday lives. However, social scientists develop, refine, apply, and report their understanding of the social world more systematically, or specifically, than Joanna Q. Public.

- Social science research methods can reduce the likelihood of overgeneralization by using systematic procedures for selecting individuals or groups to study that are representative of the individuals or groups about whom we wish 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 develop answers about the social world from ego-based commitments, excessive devotion to tradition, or unquestioning respect for authority.

Science Versus Pseudoscience

In philosophical terms, the scientific method represents an epistemology—that is, a way of knowing that relies on objective, empirical investigation. Its techniques must be transparent so that the methods, procedures, and data analyses of any study

can be replicated. This transparency allows other researchers to see if the same results can be reproduced. If findings can be replicated, then we have greater confidence that the finding is real and not based on bias. Transparency also relies on peer review, the process by which other independent researchers evaluate the scientific merit of the study.

In contrast, if we relied on findings based on intuition, gut reactions, or our own experience, we would be open to the errors we just covered above. If we based findings on this, it would not be science, but instead fall under the classification of **pseudoscience**. Pseudoscientific beliefs are not based on the scientific method but rather on claims that may be touted as "scientifically proven" but are only bolstered by testimonials of believers who have experienced the event firsthand or who have claimed to have witnessed the phenomenon (Nestor & Schutt, 2012).

Of course, today's pseudoscience could be yesterday's science. In criminological research, phrenology is a good example. In the 19th century, phrenology was the belief that bumps and fissures of the skull determined the character and personality of a person. Doctors doing entry examinations at American prisons would examine a new inmate's head for bumps or cavities to develop a criminal profile. Advances in cognitive psychology and neurology have largely discredited phrenology and placed it within the domain of pseudoscience. It didn't take a genius to question phrenology, just a group of researchers adhering to the scientific method. When inmates' heads were compared with individual heads in the general population, they were essentially the same!

Why We Do Criminological Research

Like you, social scientists read and hear stories about incidents of violence committed by youth, observe this violence occasionally in their lives, and try to make sense of what they see. For most, that is the end of it. But for some social scientists, the problem of youth violence has become a major research focus. The motivations for selecting this particular research focus, as with any social science topic, can be any one or some combination of the following:

Policy motivations. Many social service agencies and elected officials seek better assessments and descriptions of youth violence so they can identify needs and allocate responsibility among agencies that could meet these needs. For example, federal agencies such as the U.S. Department of Justice and the Centers for Disease Control and Prevention want to identify the magnitude of youth violence, and many state and local officials use social research to guide development of their social service budgets. Programs designed to rehabilitate young offenders often use research to learn more about the needs of their clientele. These policy guidance and program management needs have resulted in numerous research projects.

Academic motivations. Young offenders have been a logical focus for researchers interested in a number of questions, ranging from how an individual's connection to parents and peers influences his or her behavior to how the social conditions under which the person lives, such as poverty, affect his or her behavior. For example, social scientists have long been concerned with the impact that social disorganization has on individual behavior. In the 1920s, researchers at the University of Chicago were interested in the effects that residential mobility and immigration had on levels of crime and delinquency in urban neighborhoods. Today, researchers are exploring similar questions concerning the impact of disintegrating economic bases in central cities and their relationship to crime and violence. Other researchers have focused on individual-level explanations such as neurological damage. Those who study social policy also have sought to determine whether correctional programs such as boot camps and other forms of shock incarceration serve to decrease the probability of juveniles reoffending in the future.

Personal motivations. Many who conduct research on youth violence feel that doing so can help to prevent it or ameliorate the consequences of this violence when it occurs. Some social scientists first volunteered with at-risk youth in such organizations as Big Brothers Big Sisters and only later began to develop a research agenda based on their experiences.

Social Criminological Research in Action

Youth violence always has been a popular topic of social science research. However, the sharp increase in this violence in the United States that began in the late 1980s was unprecedented. Predictably, whenever a phenomenon is perceived as an epidemic, numerous explanations emerge to explain it. Unfortunately, most of these explanations are based on the media and popular culture, not on empirical research. Despite the anecdotal information floating around in the mass media about the factors that may have contributed to increases in youth violence, social scientists interested in this phenomenon have amassed a substantial body of findings that have refined knowledge about the problem and shaped social policy (Tonry & Moore, 1998). These studies fall into the four categories of purposes for social scientific research: descriptive, exploratory, explanatory, and evaluation.

Descriptive Research

Defining and describing social phenomena of interest are part of almost any research investigation, but **descriptive research** is the primary focus of many studies of youth crime and violence. Some of the central questions used in these studies were "How many people are victims of youth violence?" "How many youth are offenders?" "What are the most common crimes committed by youthful offenders?" and "How many of the different youth are arrested and incarcerated each year for crime?" Descriptive research is not interested in explaining some phenomenon, just in describing its frequency or its qualities. Measurement (see Chapter 4) and sampling (see Chapter 5) are central concerns in descriptive research.

Case Study of Description: How Prevalent Is Youth Violence?

Police reports. One of the most enduring sources of information on lethal violence in the United States is the Federal Bureau of Investigation's (FBI) Supplementary Homicide Reports (SHR). Homicide victimization rates indicate that for those under the age of 24, vulnerability to murder increased dramatically during the mid-1980s through about 1994, when rates began a steady decline and have remained relatively stable since (Smith & Cooper, 2013).

Data measuring the prevalence of nonlethal forms of violence such as robbery and assaults are a bit more complicated. How do we know how many young people assault victims each year? People who report their victimizations to police represent one avenue for these calculations. The FBI compiles these numbers in its Uniform Crime Reporting (UCR) system, which is slowly being replaced by the National Incident-Based Reporting System (NIBRS). Both of these data sources rely on state, county, and city law enforcement agencies across the United States to voluntarily participate in the reporting program. Can you imagine why relying on these data sources may be problematic for estimating prevalence rates of violent victimizations? If victimizations are never reported to police, they are not counted. This is especially problematic for victimizations between intimate partners and other offenses such as rape, in which only a fraction of incidents are ever reported to police.

Surveys. Instead of police reports, most social scientists believe the best way to determine the magnitude of violent victimization is through random sample surveys. While we will discuss survey methodology in greater detail in Chapter 7, this basically means randomly selecting individuals in the population of interest and asking them about their victimization experiences. The only ongoing annual survey to do this is the National Crime Victimization Survey (NCVS), which is sponsored by the U.S. Department of Justice's Bureau of Justice Statistics (BJS). Among other questions, the NCVS asks questions such as "Has anyone attacked or threatened you with a weapon (for instance, a gun or knife) or by something thrown (such as a rock or bottle)? Include any grabbing, punching, or choking." Estimates indicate that youth ages 12 to 24 have the highest rates of violent victimization. Despite the recent increases observed in homicide rates for this age group in some locations, their victimization trends have generally declined since the peak of the early 1990s mentioned earlier.

The Youth Risk Behavior Survey (YRBS) is another large research survey that estimates the magnitude of youth violence (along with other risk-taking behavior such as taking drugs and smoking) and has been conducted every two years in the United States since 1990. To measure the extent of youth violence, students are asked questions such as "During the past 12 months, how many times were you in a physical fight?" and "During the past 12 months, how many times were you in a physical fight in which you were injured and had to be seen by a doctor or nurse?"

Of course, another way to measure violence would be to ask respondents about their offending behaviors. Some surveys do this, including the National Youth Survey (NYS) and the Rochester Youth Development Study (RYDS). The RYDS sample consists of 1,000 students who were in the seventh and eighth grades in the Rochester, New York, public schools during the spring semester of the 1988 school year. This project has interviewed the original respondents at 12 different times, including the last interview that took place in 1997, when respondents were in their early twenties (Thornberry, Krohn, Lizotte, & Bushway, 2008). As you can imagine, respondents are typically more reluctant to reveal offending behavior compared with their victimization experiences. However, these surveys have proved to be very useful in examining the factors related to violent offending and other delinquency. We should also point out that although this discussion has been specific to violence, the measures we have discussed in this section, along with their strengths and weaknesses, apply to measuring all types of crime.

Exploratory Research

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. The goal is to answer the question "What is going on here?" and to investigate social phenomena without expectations. This purpose is associated with the use of methods that capture large amounts of relatively unstructured information. For example, researchers investigating the emergence of youth gangs in the 1980s were encountering a phenomenon of which they had no direct experience. Thus, an early goal was to find out what it was like to be a gang member and how gang members made sense of their situation. Exploratory research such as this frequently involves **qualitative methods** (see Chapter 8).

Case Study of Exploration: How Did Schools Avert a Shooting Rampage?

Research that is exploratory in nature is generally concerned with uncovering detailed information about a given phenomenon, learning as much as possible about particular people and/or events. While there have been far too many school shootings in the U.S. during the past decade, there have also been numerous incidents in which students were plotting to kill their peers or faculty members but came to the attention of authorities before their plans could be carried out. To examine how these incidents were stopped, Eric Madfis (2014) selected 11 schools where a mass shooting had been diverted between 2000 and 2009 and conduced intensive interviews with people who were involved, including 11 principals and 21 other administrators, teachers, and police officers. He also corroborated the interview data with newspaper reports and, where possible, court transcripts and police incident reports.

Madfis's (2014) research was truly exploratory. You will learn much more about qualitative research in Chapter 8, but for now, we simply want to highlight how this study is different from the other research types listed above. He let the people he interviewed speak for themselves; he didn't come with questions that

Qualitative methods Methods such as participant observation, intensive interviewing, and focus groups that are designed to capture social life as participants experience it rather than in categories predetermined by the researcher. Data that are treated as qualitative are mostly written or spoken words or observations that do not have a direct numerical interpretation.

Concept A mental image that summarizes a set of similar observations, feelings, or ideas

were designed to measure **concepts** such as violence or delinquency before the interviews. After examining all of the interview transcripts, Madfis developed themes that emerged among them all. This is what made the research exploratory instead of explanatory.

Five out of the 11 school shootings were thwarted by other students who were not directly involved with or entrusted by the accused students but who came about the information indirectly. For example, one student reported the existence of disturbing postings and images on another student's network website. The second most common category of intervention involved people who had been told directly by students accused of plotting the attacks. For example, after one student was sent threatening messages, she told her mother, who then called the police. When the accused student was questioned, he confessed and weapons were discovered in his bedroom.

School administrators believed that students have been more likely to come forward with information about their peers since the Columbine High School shootings than they had been before this catalyzing mass shooting. One school principal stated, "Columbine absolutely made kids much more vigilant about things going on around them. . . . I think it made kids less afraid to speak up if something wasn't sitting right with them" (Madfis, 2014, p. 235). Another theme that was clear from the interviews was that if school environments were going to break the "student code of silence," they must be supporting, cohesive, and trusting. For example, another principal stated, "The best mechanism we have as a deterrent for these sorts of violent acts is good relationships between kids and adults, because kids will tell you" (Madfis, 2014, p. 235).

As you can see from this discussion of Madfis's results, the goal of his research was to explore the factors related to instances in which a school shooting had been successfully thwarted. He did not go into the school with a survey filled with questions because little is known about these factors in the existing literature. As such, the investigation was explorative in nature. It is different from descriptive, because prevalence estimate of some phenomenon are not the goal. Rather, a deeper understanding of the processes and perceptions of study participants is the desired outcome in exploratory research.

Explanatory Research

Many people consider explanation to be the premier goal of any science. **Explanatory research** seeks to identify causes and effects of social phenomena, to predict how one phenomenon will change or vary in response to variation in some other phenomenon. Researchers adopted explanation as a principal goal when they began to ask such questions as "Why do people become offenders?" and "Does the unemployment rate influence the frequency of youth crime?" Methods with which to identify causes and effects are the focus of Chapter 6.

Case Study of Explanation: What Factors Are Related to Youth Delinquency and Violence?

When we move from description to exploration and finally to explanation, we want to understand the direct relationship between two or more things. Does *X* explain *Y*? Or if *X* happens, is *Y* also likely to occur? What are some of the factors related to youth violence? Using the South Carolina YRBS, MacDonald, Piquero, Valois, and Zullig (2005) examined the efficacy of general strain theory (GST) (Agnew, 1992) and Gottfredson and Hirschi's (1990) general theory of crime in predicting youth violence. GST generally maintains that strain, such as disjunction between expectations and aspirations (e.g., wanting a good job but not being able to get one) increases the likelihood that individuals will experience negative emotions, which in turn increases the likelihood of antisocial or violent behavior. These negative emotions include anger, anxiety, dissatisfaction, and so on. The general theory of crime claims that a lack of self-control, which is primarily formed by the relationship children have with their parents or guardians, is the motivating factor for all crime. Individuals with low self-control, the theory predicts, will be more likely to pursue immediate gratification, be impulsive, prefer simple tasks, engage in risky behavior, have volatile tempers, and so on.

To measure violent behavior, the YRBS asks respondents how many times in the past 30 days they carried a weapon and how many times they were in a physical fight. To measure life satisfaction, MacDonald et al. (2005) used six questions that asked respondents to report on general satisfaction or the degree to which they felt "terrible" or "delighted" about family life, friendships, school, self, residential location, and overall life. To measure self-control, the authors used the indicators of smoking and sexual behavior to represent risky behaviors that are not illegal, since they "reflect impulsivity and short-run hedonism" (p. 1502). Consistent with the general theory of crime, MacDonald et al. found that high school students who reported more impulsive behaviors, indicative of low self-control, also reported greater participation in violent behavior.

Evaluation Research

Evaluation research seeks to determine the effects of a social program or other type of intervention. It is a type of explanatory research because it deals with cause and effect. However, evaluation research differs from other forms of explanatory research because it considers the implementation and outcomes of social policies and programs. These issues may not be relevant in other types of explanatory research. The increase of youth violence in the 1980s spawned many new government programs and, with them, evaluation research to assess the impact of these programs. Some of these studies are reviewed in Chapter 10, which covers evaluation research.

Case Study of Evaluation: Do Violence Prevention Programs in Schools Work?

As many school administrators will tell you, there are direct mail, e-mail, and in-person direct sales efforts to sell them programs that reduce violence, increase empathy among students, promote a positive school environment, promote other forms of mental well-being, and on and on. Unfortunately, not many of these programs have been rigorously evaluated to ensure that they actually do what they promise. One program that has been the target of rigorous evaluation is the Gang Resistance Education and Training (G.R.E.A.T.) program, which is a school-based gang and violence prevention program. This program is a cognitive-based program intended to (among other things) teach students about crime and its effects on victims, how to resolve conflicts without violence, and how to improve individual responsibility through goal setting. The G.R.E.A.T. program addresses multiple risk factors for violent offending among three domains: school, peer, and individual. Because it is curriculum-based in the school, it does not address risk factors present in the family or neighborhood. It is a 13-week program taught in sixth or seventh grade and attempts to affect several risk factors, including school commitment and performance, association with conventional or delinquent peers, empathy, and self-control, among others.

Finn-Aage Esbensen and his colleagues (Esbensen, Osgood, Peterson, Taylor, & Carson, 2013) evaluated the long-term effects of the G.R.E.A.T. program in seven cities across the U.S. Schools selected for the program randomly assigned some seventh-grade classrooms to get the treatment (*experimental groups*) while the other classrooms did not (*control groups*). As you will later learn, this is called a *true experimental design*. It is an extremely strong research method for determining the effects of programs or policies because if groups are truly randomly assigned, there is a strong reason to believe that differences between the groups after program implementation, such as reduced violent offending, are because of the program and not some other factor that existed before the introduction of the treatment.

Both experimental and control group students in the Esbensen et al. (2013) study completed four follow-up surveys annually for four years. The researchers examined 33 outcome measures, including general delinquency, violent offending, gang affiliation, associations with delinquent peers, empathy, impulsivity, and problem solving. The statistical methods employed by Esbensen and his colleagues are very complicated and beyond the scope of this text, so we will simply highlight the general findings. When the data for all seven sites were combined, there were no differences in violent offending between experimental and control group students over the four-year period. Those students who participated in the G.R.E.A.T. program were,

A SCHOOL SHOOTING EVERY WEEK?

This article investigates a quote by Senator Chris Murphy (D-Conn) who said, "Since Sandy Hook, there has been a school shooting, on average, every week." He made this statement on the Senate floor after the killing of nine people at a prayer meeting in Charleston, South Carolina. This is not the first time this statistic has been used, but where did it come from? The article reports that it was calculated by a group called "Everytown for Gun Safety" that has counted the tally of school shootings since the Sandy Hook Elementary School shooting as 126 as of June 8, 2015. How does the group define a school shooting? Any incident in which a firearm was discharged inside a school building or on school or campus grounds, as documented by the press or confirmed through further inquiries with law enforcement, was deemed a school shooting.

QUESTIONS ABOUT THE ARTICLE

1. Does this definition of *school shootings* capture what we typically mean by a school shooting? For example, it would include accidental shootings as well as suicides or attempted suicides.

2. What other types of incidents would be included in this definition that we don't typically associate with school shootings? What definition would you use if you were going to measure the incidence of school shootings?

Source: Lee, M. Y. H. (2015, June 29). Has there been one school shooting per week since Sandy Hook? *The Washington Post*. Retrieved August 2, 2015, from http://www.washingtonpost.com/blogs/fact-checker/wp/2015/06/29/has-there-been-one-school-shooting-per-week-since-sandy-hook/

however, less likely to become members of gangs, had higher levels of altruism, showed less anger and risk taking, and had more favorable attitudes toward the police, among other things.

With these results, would you deem the G.R.E.A.T. program a success? These are the important questions evaluation research must address. Esbensen et al. (2013) agree that the program did not reduce general delinquency or violent offending but note that it was effective in reducing gang membership, which is also a risk factor for violent offending.

Strengths and Limitations of Social Research

These case studies are only four of the hundreds of studies investigating youth violence, but they illustrate some of the questions criminological research can address, several different methods social scientists studying these issues can use, and ways

criminological research can inform public policy. Notice how each of the four studies was designed to reduce the errors common in everyday reasoning:

- The clear definition of the population of interest in each study and the selection of a broad, representative sample of that population in two studies increased the researchers' ability to draw conclusions without overgeneralizing findings to groups to which they did not apply.

- The use of surveys in which each respondent was asked the same set of questions reduced the risk of selective or inaccurate observation.

- The risk of illogical reasoning was reduced by carefully describing each stage of the research, clearly presenting the findings, and carefully testing the basis for cause-and-effect conclusions.

- Resistance to change was reduced by using an experimental design that randomly assigned classes to an experimental treatment (the G.R.E.A.T program) and a control group to fairly evaluate the efficacy of the program.

Nevertheless, it would be misleading to suggest that simply engaging in criminological research will result in the unveiling of absolute truths! Research always has its flaws and limitations (as does any human endeavor), and findings are always subject to differing interpretations. Social research allows us to consider and reveal more, to observe with fewer distortions, and to describe more clearly to others the basis for our opinions, but it will not settle all arguments. Other people will always have differing opinions, and some opposition will come from other social scientists who have conducted their own studies and drawn different conclusions. For example, we must ask ourselves if programs similar to G.R.E.A.T. would reduce levels of violence for younger students. Until more scientific research is conducted to evaluate these programs, it is difficult to determine whether these programs should be more widely implemented.

But even in areas of research that are fraught with controversy, where social scientists differ in their interpretations of the evidence, the quest for new and more sophisticated research has value. What is most important for improving understanding of the social world and issues in criminology is not the results of any one particular study but the accumulation of evidence from different studies of related issues. By designing new studies that focus on the weak points or controversial conclusions of prior research, social scientists contribute to a body of findings that gradually expands our knowledge about the social world and resolves some of the disagreements about it.

Whether you plan to conduct your own research projects, read others' research reports, or even just listen to or read claims about social reality in the media, knowing about research methods has many benefits. This knowledge will give you greater confidence in your own opinions, improve your ability to evaluate others' opinions, and encourage you to refine your questions, answers, and methods of inquiry about the social world.

Of course, the methods of social science, as careful as they may be, cannot answer all questions of interest to criminologists. Should we do unto others as we would have them do unto us? Does anyone deserve the fate he or she receives? Are humans inherently good or evil? These are all very important questions that have been asked throughout history, but we must turn to religion or philosophy to answer questions about values. Social research on the consequences of forgiveness or the sources of interpersonal conflict may help us understand and implement our values, but even the best research cannot tell us which values should guide our lives.

Types of Research Methods

As you will see in this book, the data we use in criminological research are derived from many different sources, and the research methods we employ in criminology and criminal justice are very diverse.

An **experimental approach** is used in criminological research, particularly when the efficacy of a program or policy is being evaluated. As we will see in Chapter 6, true experiments must have three aspects: two groups (one receiving the treatment or intervention and the other receiving no treatment or another form thereof), **random assignment** to these two groups, and an assessment of change in the outcome variable after the treatment or policy has been received. **Quasi-experimental designs,** experiments that lack one of these three ingredients, also are used in our discipline. Chapter 10 focuses exclusively on research designs used in evaluation research.

> **Questionnaire** The survey instrument containing the questions for a self-administered survey
>
> **Participant observation** A qualitative method for gathering data that involves developing a sustained relationship with people while they go about their normal activities
>
> **Intensive interviewing** A qualitative method that involves open-ended, relatively unstructured questioning in which the interviewer seeks in-depth information on the interviewee's feelings, experiences, and perceptions (Lofland & Lofland, 1984, p. 12); also called *in-depth interviewing*

Asking people questions on **surveys** or **questionnaires** is another popular method used by criminological researchers and is probably the most versatile. Most concepts about individuals can be defined in such a way that measurement with one or more questions becomes an option. These surveys can be self-administered by respondents (e.g., through the mail) or can be read by an interviewer (e.g., through a telephone survey).

Although in principle, survey questions can be a straightforward and efficient means to measure individual characteristics, facts about events, level of knowledge, and opinions of any sort, in practice, survey questions can result in misleading or inappropriate answers. All questions proposed for a survey must be screened carefully for their adherence to basic guidelines and then tested and revised until the researcher feels some confidence that they will be clear to the intended respondents (Fowler, 1995). Some variables may prove to be inappropriate for measurement with any type of question. We have to recognize that memories and perceptions of events and even honesty may be limited. Specific guidelines for writing questions and developing surveys are presented in Chapter 7.

In other cases, a researcher may want to make his or her presence known and directly participate in the activity being observed. Included in this type of research design is **participant observation**, which involves developing a sustained relationship with people while they go about their normal activities. In other instances, the subject matter of interest may not be amenable to a survey or perhaps we want more detailed and in-depth information than questions with fixed formats can answer. In these cases, we turn to research techniques such as participant observation and **intensive interviewing** (in-depth interviewing). These methods are preferred when we seek in-depth information on an individual's feelings, experiences, and perceptions. Chapter 8 shows how these methods and other field research techniques can uncover aspects of the social world that we are likely to miss in experiments and surveys.

Secondary data analysis (Riedel, 2000), which is the reanalysis of already existing data, is another method used by researchers. These data usually come from one of two places: from official sources such as local or federal agencies (e.g., rates of crime reported to police, information on incarcerated offenders from state correctional authorities, adjudication data from the courts) or from surveys sponsored by government agencies or conducted by other researchers. Most of the data collected by government agencies and a great deal of survey data collected by independent researchers are made available to the public through the Inter-University Consortium for Political and Social Research (ICPSR), which is located at the University of Michigan. Another type of indirect measurement is called **content analysis**. In this type of study, a researcher studies representations of the research topic in such media forms as news articles, TV shows, and radio talk shows. An investigation of the drinking climate on campuses might include a measurement of the amount of space devoted to ads for alcoholic beverages in a sample of issues of the student newspaper. Campus publications also might be coded to indicate the number of times that statements discouraging substance abuse appear. Content analysis techniques also can be applied to legal opinions, historical documents, novels, songs, or other cultural productions.

With the emergence of increasingly advanced computer technology, **crime mapping** also has become a popular method for examining the relationship between criminal behavior and other geographical space. Chapter 9 covers each of

these methodologies and illustrates the importance of these unobtrusive research techniques in describing criminology and criminal justice.

All research begins with a research question and then a formal process of inquiry. Chapter 2 provides an overview of the research circle from both a deductive and inductive perspective using the empirical literature on arrest and intimate partner assault as a case study. All research must also grapple with conceptualization and measuring constructs, including the extent to which these measures are valid and reliable. Chapter 4 examines these issues followed by a discussion of sampling in Chapter 5. Of course, all research, regardless of the methodology selected, requires that it be carried out ethically with special protections afforded the participants under study. Although every chapter that details a specific type of research method concludes with a section on ethics related to that method, Chapter 3 is devoted exclusively to the steps required to ensure research is conducted ethically.

Quantitative and Qualitative Methods

In general, research methods we highlighted above can be divided into two somewhat different domains called *quantitative research methods* and *qualitative research methods*. Did you notice the difference between the types of data used in the case studies discussed at the beginning of the chapter? The data collected in the YRBS were counts of the responses students gave on the survey. These data were numerical, so we say that this study used **quantitative methods.** MacDonald et al. (2005) looked at the extent to which impulsivity and life satisfaction affected students' participation in violence; they examined this relationship with statistical methods. This, too, represents quantitative methods. In contrast, Madfis's (2014) exploratory study used in-depth interviews with school administrators who had helped prevent an attempted school shooting. This methodology was designed to capture the social reality of the participants as they experienced it in their own words rather than in predetermined categories. Because the researchers focused on the participants' words rather than counts and numbers, we say that this study used qualitative methods.

The distinction between quantitative and qualitative methods involves more than just the type of data collected. Quantitative methods are most often used when the research agendas are exploratory, explanatory, descriptive, or evaluative. Exploratory research agendas most commonly use qualitative methods, although researchers also use these methods for descriptive and evaluative purposes. The goals of quantitative and qualitative researchers also may differ. Whereas quantitative researchers generally adopt the goal of developing an understanding that correctly reflects what is actually happening in the real world, some qualitative researchers instead emphasize the goal of developing a broader, more "authentic" understanding of a social process or social setting (Gubrium & Holstein, 1997).

We do not want to place too much emphasis on the distinction between qualitative and quantitative methods because social scientists are increasingly combining these methods to enrich their research. For example, "qualitative knowing" about social settings can be essential for understanding patterns in quantitative data (Campbell & Russo, 1999, p. 141). Qualitative data can be converted to quantitative data—for example, when we count the frequency of particular words or phrases in a text or measure the time elapsed between different behaviors that we have observed. Surveys that collect primarily quantitative data also may include questions that require written responses, all of which can be used in a qualitative, textual analysis. Researchers using quantitative methods may engage in some exploration to find unexpected patterns in their data. Qualitative researchers may test explicit explanations of social phenomena using textual or observational data. Combining methodologies to answer a research question is called **triangulation**. The term suggests that a researcher can get a clearer picture of the social reality being studied by viewing it from

Quantitative methods
Methods such as surveys and experiments that record variation in social life in terms of categories that vary in amount. Data that are treated as quantitative are either numbers or attributes that can be ordered in terms of magnitude.

Triangulation The use of multiple methods to study one research question; also used to mean the use of two or more different measures of the same variable

> **Mixed methods** Combining both qualitative and quantitative methods to study one research question

several different perspectives. Each will have its drawbacks and limitations in a specific research application, but all can benefit from a combination of one or more other methods (Brewer & Hunter, 1989; Sechrest & Sidani, 1995).

As you will see in the chapters that follow, the distinction between quantitative and qualitative data is not always sharp. We'll examine **mixed-methods** possibilities in each of the chapters that review specific methods of data collection. In mixed-methods research, both qualitative and quantitative methods are used together to examine one research question.

Conclusion

We hope this first chapter has given you an idea of what to expect in the rest of this book. Our aim is to introduce you to social research methods by describing what social scientists have learned about issues in criminology and criminal justice as well as how they tackled systematic challenges in conducting their research. For many students, the substance of social science inevitably is more interesting than the research methods used to bring those findings to light. However, in this volume, you will see that the research methods not only demand interest and merit but are also fundamental to our understanding of criminology and criminal justice. We have focused attention on research on youth violence and delinquency in this chapter; in subsequent chapters, we will introduce research examples from other areas.

Chapter 2 continues to build the foundation for our study of social research by reviewing the types of problems that criminologists study, the role of theory, the major steps in the research process, and other sources of information that may be used in social research. We stress the importance of considering scientific standards in social research and reviewing generally accepted ethical guidelines. Throughout the chapter, we use several studies of domestic violence to illustrate the research process.

Key Terms

Concept
Content analysis
Crime mapping
Descriptive research
Evaluation research
Experimental approach
Explanatory research
Exploratory research
Illogical reasoning

Intensive interviewing
Mixed methods
Overgeneralization
Participant observation
Pseudoscience
Qualitative methods
Quantitative methods
Quasi-experimental design
Questionnaire

Random assignment
Resistance to change
Secondary data analysis
Selective observation
Social science
Survey
Triangulation

Highlights

- Criminological research cannot resolve value questions or provide answers that will convince everyone and remain settled for all time.

- All empirically based methods of investigation are based on either direct experience or others' statements.

- Four common errors in reasoning are overgeneralization, selective or inaccurate observation, illogical reasoning, and resistance to change. Illogical reasoning is due to the complexity of the social world, self-interest, and human subjectivity. Resistance to change may be due to unquestioning acceptance of tradition or of those in positions of authority or to self-interested resistance to admitting the need to change one's beliefs.

- Social science is the use of logical, systematic, documented methods to investigate individuals, societies, and social processes as well as the knowledge produced by these investigations.

- Pseudoscience involves claims based on beliefs and/or public testimonials, not on the scientific method.

- Criminological research can be motivated by policy guidance and program management needs, academic concerns, and charitable impulses.

- Criminological research can be descriptive, exploratory, explanatory, or evaluative or some combination of these.

- Quantitative methods record variation in social life in terms of categories that vary in amount. Qualitative methods are designed to capture social life as participants experience it rather than in categories predetermined by the researcher.

- Triangulation is the use of multiple research methods to study a single research question.

Exercises

Discussing Research

1. What criminological topic or issue would you focus on if you could design a research project without any concern for costs? What are your motives for studying this topic? List at least four of your beliefs about this phenomenon. Try to identify the sources of each belief—for example, television, newspaper, or parental influence.

2. Develop four research questions related to a topic or issue, one for each of the four types of research (descriptive, exploratory, explanatory, and evaluative). Be specific.

3. Find a report of social science research in an article in a daily newspaper. What are the motives for the research? How much information is provided about the research design? What were the major findings? What additional evidence would you like to see in the article to increase your understanding of the findings in the research conclusions?

4. Find a CNN blog discussing some topic about crime. How do your opinions on the subject differ?

Finding Research on the Web

1. You have been asked to prepare a brief presentation on a criminological topic or issue of interest to you. Go to the BJS website (http://www.ojp.usdoj.gov/bjs). Browse the BJS publications for a topic that interests you. Write a short outline for a 5- to 10-minute presentation regarding your topic, including statistics and other relevant information.

2. Go to the FBI website (http://www.fbi.gov). Explore the types of programs and initiatives sponsored by the FBI. Discuss at least three of these programs or initiatives in terms of their

purposes and goals. For each program or initiative examined, do you believe the program or initiative is effective? What are the major weaknesses? What changes would you propose the FBI make to more effectively meet the goals of the program or initiative?

3. Go to the website of a major newspaper and find an article discussing the causes of violence. What conclusions does the article draw, and what research methods does the author discuss to back up his or her claims?

Critiquing Research

1. Find a story about a criminological issue in the popular press (e.g., a newspaper or periodical such as *Time* magazine). Does the article provide a scientific basis for claims made in the

story? If rates of crime are reported, does the article discuss how these rates were actually obtained?

2. Read an article in a recent issue of a major criminological journal or on the study site for this book (https://study.sagepub .com/bachmanfrccjsr). Identify the type of research conducted for each study. Are the research questions clearly stated? Can you identify the purpose of the research (e.g., description, explanation, exploration, evaluation)?

Making Research Ethical

Throughout the book, we will be discussing the ethical challenges that arise in research on crime and criminal justice. At the end of each chapter, we will ask you to consider some questions about ethical issues related to that chapter's focus. Chapter 3 is devoted to issues of ethics in research, but we will begin here with some questions for you to ponder.

1. You have now learned about the qualitative study by Madfis (2014) about schools that averted a shooting incident. We think it provided important information for policy makers about the social dynamics in these tragedies. But what would *you* do if you were conducting a similar study in a high school and you learned that another student was planning to bring a gun to school to kill some other students? What if he was only thinking about it? Or just talking with his friends about how "neat" it would be? Can you suggest some guidelines for researchers?

2. If you were part of Esbensen's research team that evaluated the G.R.E.A.T. violence reduction program in schools, would you announce your findings in a press conference and encourage schools to adopt this program? If you were a school principal who heard about this research, would you agree to let another researcher replicate (repeat) the Esbensen study in your school, with some classrooms assigned to receive the program randomly (on the basis of the toss of a coin) and others not allowed to receive the program for the duration of the study?

Developing a Research Proposal

1. 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?

2. Develop four questions that you might investigate about the topic you just selected. Each question should reflect a different research motive: description, exploration, explanation, or evaluation. Be specific.

3. Which question most interests you? Would you prefer to attempt to answer that question using quantitative or qualitative methods? Why?

Performing Data Analysis in SPSS or Excel

Data for Exercise	
Dataset	**Description**
2013 YRBS.sav	The 2013 YRBS is a national study of high school students. It focuses on gauging various behaviors and experiences of the adolescent population, including substance use and some victimization.
Monitoring the Future 2013 grade 10.sav	This dataset contains variables from the 2013 Monitoring the Future (MTF) study. These data cover a national sample of tenth graders, with a focus on monitoring substance use and abuse.
Variables for Exercise	
Variable Name (Dataset)	**Description**
Q44 (YRBS)	A seven-category ordinal measure that asked how many times the respondent drank five or more beverages in one sitting in the past 30 days
V7108 (MTF)	A six-category ordinal measure that asked how many times the respondent drank five or more drinks in a row in the past two weeks

First, load the "2013 YRBS.sav" file and look at the following:

1. Create a bar chart of variable "q44" by following the menu options "graphs->legacy dialogues->bar." Select the "simple bar chart" option and click the arrow to add "q44" to the category axis text box. At a glance, what does this bar graph tell us about binge drinking among high school students?

   a. Are the data on the YRBS qualitative or quantitative? How do you know?

2. Write at least four research questions based on the bar graph you've created. Try to make one for each type of social research (descriptive, exploratory, explanatory, and evaluative). Think about the following: What sticks out to you in this graph?

Where do you need more information? Who should the research focus on?

3. Explain the possible reasons (policy, academic, or personal) for why we might want to research binge drinking or the lack thereof. What organizations might be interested in this kind of research?

Triangulation refers to using multiple methods or measures to study a single research question. Let's see if we can triangulate the results from Question 1 using a different measure in the "Monitoring the Future 2013 grade 10.sav" dataset.

4. Create a bar chart of variable "v7108." How do the estimates of binge drinking in the YRBS compare to these results? If there are any major differences, what do you think could explain them?

STUDENT STUDY SITE

The companion Student Study Site for *Fundamentals of Research in Criminology and Criminal Justice* can be found at **https://study.sagepub.com/bachmanfrccjsr**.

Visit the Student Study Site to enhance your understanding of the chapter content and to discover additional resources that will take your learning one step further. You can enhance your understanding of the chapters by using the comprehensive study material, which includes SAGE journal and reference articles, e-flashcards, quizzes, multimedia links, and more.

How to Read a Research Article

The discussions of research articles throughout the text may provide all the guidance you need to read and critique research on your own. But reading about an article in bits and pieces in order to learn about particular methodologies is not quite the same as reading an article in its entirety in order to learn what the research discovered. The goal of this appendix is to walk you through an entire research article, answering the review questions introduced in Appendix A. Of course, this is only one article, and our "walk" will take different turns from one taken by a review of other articles, but after this review, you should feel more confident when reading other research articles on your own.

For this example, we will use an article by Yi-Fen Lu, Yi-Chun Lu, Ling Ren, and Ineke Marshall that provides a test of self-control theory with a sample of Chinese adolescents (reprinted on page 64). It contributes to our understanding of the power and efficacy of self-control theory. This theory specifies that the impact of self-control variables should not be affected by culture, but very few studies exist that have tested the theory in non-Western contexts generally or in China specifically. Moreover, the article is published in a reputable criminological journal, the *Journal of Contemporary Criminal Justice,* indicating the article makes an important contribution to what is known about the causes and correlates of delinquent behaviors.

We have reproduced below each of the article review questions from Appendix A, followed by our answers to them. After each question, we indicate the article page or pages that we are referring to. You can also follow our review by reading through the article itself and noting our comments.

1. *What is the basic research question or problem? Try to state it in just one sentence.* (Chapter 2)

   Is low self-control associated with misbehavior among juveniles in China? Is any impact of this variable independent of an effect of measures of social bond theory and individual demographic variables? (p. 37)

2. *Is the purpose of the study explanatory, evaluative, exploratory, or descriptive? Did the study have more than one purpose?* (Chapter 1)

   The study is explanatory. The authors wish to establish the potential impact of one (set of) variable(s) on another—measures of self-control and the social bond on the incidence of deviant behavior in juveniles in a specific cultural context.

3. *Was the theoretical framework presented? What was it? Did it seem appropriate for the research question addressed? Can you think of a different theoretical perspective that might have been used?* (Chapter 2)

   Two different theoretical frameworks are specifically being tested in this article—Gottfredson and Hirschi's self-control theory and Hirschi's social bond theory (p. 34). This study is designed as a test of those theories as applied in an under-researched context (China). It would certainly be possible to examine the accuracy of other Western theories of delinquency with this population as well.

4. *What prior literature was reviewed? Was it relevant to the research problem? To the theoretical framework? Does the literature review appear to be adequate? Are you aware of (or can you locate) any important omitted studies?* (Chapter 2)

   In the section called "Theory and Prior Research," Lu et al. discuss the basics of self-control and social bond theories and cite a variety of other studies that have tested both of these theories. In addition, they provide a discussion of studies that have applied concepts from either theory in non-Western—specifically East Asian—contexts. Given the purpose of the study—to establish the efficacy of either or both of these theoretical frameworks in a non-Western context—the review of these areas of research appear to be appropriate and adequate. We leave it to you to decide if any important studies were omitted.

5. *How well did the study live up to the guidelines for science? Do you need additional information in any areas to evaluate the study? To replicate it?* (Chapter 2)

The study clearly involves a test of ideas (two formal theories) against empirical reality (measures of behavior among Chinese adolescents). The "Methods" section of the article (pp. 37–41) clearly tells us how the investigation was systematically carried out—there's a careful (and well-specified) research design. This design is well documented and clear (and obviously publicly disclosed, as the article has been published). They clarify their assumptions in the "Theory and Prior Research" section of the paper (pp. 34–37). There is a full section in the paper devoted to discussion of "Measures" (pp. 38–41), that is, the ways in which key concepts in the study were defined and measured. The authors are building on other empirical research and attempting to replicate these studies, but in a very different cultural context. They clearly maintain an interest in theory—this paper is a deductive approach to knowledge that presents a test of specific theories. They do not make any assumptions about what they will find—for example, they write that the analysis examines what effect of self-control measures—"if any"—remains after considering the effect of measures of social bond theory and demographic controls. They clearly have no assumptions about the potential impact of those social control measures. Their goal is to search for patterns of regularities in the data—"Are there predictable and discernible patterns that emerge in an examination of the delinquent behaviors of Chinese teenagers?" Thus, this study seems to exemplify adherence to basic scientific guidelines.

6. *Did the study seem consistent with current ethical standards? Were any trade-offs made between different ethical guidelines? Was an appropriate balance struck between adherence to ethical standards and use of the most rigorous scientific practices?* (Chapter 3)

The authors make no specific references to adherence to ethical standards nor is there a specific citation for approval by an Internal Review Board for their study methodology. However, given that all four authors are employed at major American universities, it is likely safe to assume that such a review by a human subjects board did take place. The questionnaire used in the study asked adolescents about deviant behavior, and the authors do tell us that this questionnaire was anonymous. While there is no reason to assume that ethical standards were not upheld, the authors might have been more specific in their description of the methodology in this respect.

7. *What were the major concepts in the research? How, and how clearly, were they defined? Were some concepts treated as unidimensional that you think might best be thought of as multidimensional?* (Chapter 4)

The following concepts were used in the research: risky behavior, minor delinquency, self-control, attachment, school commitment, involvement, belief, age, gender, family structure, and delinquent peers. The definitions of the key concepts linked with the two theories (self-control, attachment, school commitment, involvement, and belief) receive special attention (pp. 39–40). Several of the variables used in the study are multidimensional. For example, the operationalization of the key concept of self-control utilizes an index designed to tap into various dimensions of this measure. Three of the four aspects of social bond (attachment, involvement, and belief) were measured with multiple items. The fourth (school commitment) was operationalized as the response to a single item on the survey ("How well do you do in school compared with other students in your class?" p. 40). This measure of school commitment might have been more complex, although the strategy the authors use is not inconsistent with the way this concept has been operationalized in other research.

8. *Were any hypotheses stated? Were these hypotheses justified adequately in terms of the theoretical framework? In terms of prior research?* (Chapter 2)

The authors offer no specifically stated set of hypotheses about the ways in which self-control theory and social bond theory will perform in predicting the delinquent behaviors in this population of Chinese youth. They certainly do identify the results of previous research with regard to the study of these measures in various contexts (pp. 34–37) but do not express any expectations about the relationships that might be found in this cultural context.

9. *What were the independent and dependent variables in the hypothesis(es)? Did these variables reflect the theoretical concepts as intended? What direction of association was hypothesized? Were any other variables identified as potentially important?* (Chapter 2)

There are two dependent variables—prevalence of risky behavior and of minor delinquency. Independent variables are self-control, attachment, school commitment, involvement, and belief. Demographic control variables include age, gender, family structure, and delinquent peers. These variables are all directly related to the theories being tested (pp. 38–41).

10. *Did the instruments used—the measures of the variables—seem valid and reliable? How did the author attempt to establish this? Could any more have been done in the study to establish measurement validity?* (Chapter 4)

Because both self-control and social bond theories have been widely tested in the field, there are certain agreed-upon operationalizations of concepts relevant for these theories that exist (all of which are discussed in the article). With regard to the survey instrument used to collect the data, the authors note that the "validity and reliability of the . . . core questionnaire have been examined and found to be quite satisfactory" (p. 38). Standardized measures (such as "Grasmick et al.'s . . . self-control scale, including 12 items on impulsivity, risk-seeking, self-centeredness, and temper" p. 39) were also used. It appears that the authors made use of established measures, which have been previously subject to examination for reliability and validity, in their own work.

11. *What were the units of analysis? Were they appropriate for the research question? If some groups were the units of analysis, were any statements made at any point that are open to the ecological fallacy? If individuals were the units of analysis, were any statements made at any point that suggest reductionist reasoning?* (Chapter 5)

The unit of analysis in this study was an individual—a student in a school in China. This unit of analysis is appropriate for this research question, as the theories being tested here are ones that predict individual-level behavior. There are no statements that suggest reductionist reasoning.

12. *Was the study design cross-sectional or longitudinal, or did it use both types of data? If the design was longitudinal, what type of longitudinal design was it? Could the longitudinal design have been improved in any way, such as by collecting panel data rather than trend data or by decreasing the dropout rate in a panel design? If cross-sectional data were used, could the research question have been addressed more effectively with the longitudinal data?* (Chapter 6)

This study was cross-sectional. Data were collected from the Chinese students at a single point in time.

13. *Were any causal assertions made or implied in the hypotheses or in subsequent discussion? What approach was used to demonstrate the existence of causal effects? Were all three criteria for establishing causal relationships addressed? What, if any, variables were controlled in the analysis to reduce the risk of spurious relationships? Should any other variables have been measured and controlled? How satisfied are you with the internal validity of the conclusions?* (Chapters 5, 6)

While the authors do not specifically say that they are in pursuit of causal relationships, there is some evidence that might be used to suggest the existence of a causal relationship. They establish association between the independent and dependent variables. They also address issues of spuriousness directly—the impact of self-control measures is examined both with and without the addition of measures of social bonds. The four control variables used (age, gender, family structure, and delinquent peers) are also appropriate in an effort to address spuriousness. These measures might be expected to be associated with both the independent and the dependent variable, so including them as controls is a wise move. There are potentially more problems with the time order element. Because data were only collected at a single point in time, it might be difficult to ascertain, for some measures, the direction of the causal relationship. For example, it is possible that a low level of school commitment (measured with a question that asked how well the respondent was doing in school) might have a causal association with deviant behavior (as predicted in social bond theory). It is also possible, however, that engaging in some risky behaviors (such as drinking alcohol) could have an effect on school performance (the measure of school commitment). Therefore, while association between the variables can be demonstrated, time order and nonspuriousness are not entirely established.

14. *Was a sample or the entire population of elements used in the study? What type of sample was selected? Was a probability sampling method used? Did the authors think the sample was generally representative of the population from which it was drawn? Do you? How would you evaluate the likely generalizability of the findings to other populations?* (Chapter 5)

A probability sample is used in the study. The authors utilized a multistage cluster technique to randomly select middle schools in the city of Hangzhou and then randomly selected one class of seventh-, eighth-, and ninth-grade students in each school. All students in that randomly selected class were then asked to participate in the research. The site selected for the study was chosen because "[t]he city is a vivid reflection of the social and demographic changes in the coastal area in China where the economic boom has been the most noticeable" (p. 38). Consequently, the youth randomly selected from this population should be representative of a part of China that is of special interest. The random selection of participants should have ensured that the findings were generalizable.

15. *Was the response rate or participation rate reported? Does it appear likely that those who did not respond or participate were markedly different from those who did participate? Why or why not? Did the author(s) adequately discuss this issue?* (Chapters 5, 7)

The response rate was quite high—96%. Lu et al. note that this very high response rate might be attributed in part to cultural factors. Response rates to self-administered surveys in China are routinely this high, while studies done in the United States with comparable methodologies have seen response rates in the area of 75%. The high response rate is a good thing, of course, with regard to the confidence a reader can have in the results of the study. It is also significant that Lu et al. provide context for this (perhaps seemingly inordinately) high response rate.

16. *Was an experimental, survey, participant observation, or some other research design used? How well was this design suited to the research question posed and the specific hypotheses tested, if any? Why do you suppose the author(s) chose this particular design? How was the design modified in response to research constraints? How was it modified in order to take advantage of research opportunities?* (Chapters 7, 8)

The study employed a survey methodology. A great deal of other research (cited in the paper) that has tested both self-control theory and social bond theory with adolescents in the West has also used survey methodologies. The fact that survey research is established as a vehicle for examining the types of questions that are of interest here was likely a factor in the selection of this methodology for this study. The survey used in this study is based on a previously used instrument (the International Self-Report Delinquency Study). In writing about this survey, the authors state, "[t]he validity and reliability . . . have been examined and found to be quite satisfactory" (p. 38). The site of the study, China, did require a translation of this instrument. Lu et al. note that the translated survey was pretested with a group of Chinese exchange students "to make the questionnaire better fit the Chinese social, cultural, and language contexts" (p. 38).

17. *Was an evaluation research design used? Which type was it? What was the primary purpose of the evaluation?* (Chapter 10)

No, this study is not an evaluation design.

18. *Were multiple methods used? Were findings obtained with different methods complementary?* (Chapter 11)

This study used only survey methodology. Given the fact that the impact of cultural context was a variable of interest here, it is possible that this research question could also be effectively addressed with a more qualitative methodology in the future—one that would allow for the discovery of context and the application of meaning on the part of the subjects.

19. *Summarize the findings. How clearly were statistical and/or qualitative data presented and discussed? Were the results substantively important?* (Chapter 12)

The authors include a discussion and conclusions section where they clearly summarize the major findings of the analysis. They found that the results of the study in this Chinese context were comparable to those found with Western (primarily American) samples. Self-control was found to be inversely related to measures of both risky behavior and minor delinquency. The effects of the self-control measure remained even after including social bond measures and the demographic variables in the model, and the self-control variables had a stronger effect than did the social bond measures. Among the social bond measures, only belief and family attachment were found to have a significant effect on the dependent variables. Self-control was found to be more strongly related to minor delinquency than to risky behaviors.

20. *Did the author(s) adequately represent the findings in the discussion and/or conclusion sections? Were conclusions well grounded in the findings? Are any other interpretations possible?* (Chapter 12)

Lu et al. have extensive "Discussion" and "Conclusion" sections in which they summarize and review the major findings of their analysis and also offer some insight into the significance, and potential problems, with the research. First, it is a significant step to find confirmation of the predictions of self-control and social bond theories in a non-Western population of children. The authors made it clear that this was a primary goal of the study, and the fact that these theories perform as predicted in a very different cultural context adds to the evidence supporting the universality of these relationships. There are also some notable limitations in the study, which Lu et al. point out (p. 47). For example, only a small amount of the total variance in risky behaviors or delinquency is accounted for by the variables used in this study. Thus, the authors recommend that other "theoretical explanations, such as general strain theory, may be considered for future investigations" (p. 47). They also suggest that more direct comparison of the data from this study with that obtained with the same (or similar) instruments in other countries would be useful—"the ISRD-2 survey has been implemented in 30 countries (and) future research may explore the comparative aspect of self-control across different cultures to examine the explanatory power of self-control theory" (p. 47).

21. *Compare the study to others addressing the same research question. Did the study yield additional insights? In what ways was the study design more or less adequate than the design of previous research?* (Chapters 2, 12)

The most significant thing about this study was its confirmation of the findings of many other studies regarding the impact of self-control and social bond variables on delinquency. The fact that these data came from a very different cultural context—China—was the main point of the research. In their explication of the theory, Gottfredson and Hirschi "pointed out (that) 'culture variability is not important in the causation of crime and we should look for constancy rather than variability in the definition of and causation of crime'" (p. 33). The application and testing of the theory in other cultural contexts—as done in this article—can therefore be considered a necessary part of testing this popular and powerful approach to explaining delinquency and crime.

Lu et al. do call attention to some measurement issues with their study that might have been problematic. In measuring the key variable of self-control, they use an established index (Grasmick et al.'s self-control scale) but only make use of the short version (with 12 items) of this widely tested instrument.

22. *What additional research questions and hypotheses are suggested by the study's results? What light did the study shed on the theoretical framework used? On social policy questions?* (Chapters 2, 12)

The results of this study definitely contribute to the validation of self-control and social bond theories, offering a test of the theories in a non-Western context. In order to establish that the impact of self-control measures on the likelihood of the occurrence of criminal or delinquent behaviors is universal, the theory should be tested in more cultural contexts. This successful application in China also only involved students in one province of this very large country—more data from within China, as well as from other Asian countries, would also be useful. Lu et al. also argue that additional theoretical perspectives (e.g., strain theory) should also be tested in the cultural context of China.