Research Methods for Criminal Justice Students

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This work is a remix and expansion of two open access textbooks:

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices*. Textbooks Collection, 3.

Blackstone, A. (2012). *Principles of sociological inquiry: Qualitative and quantitative methods*. Saylor Foundation.

Preface

This book is based on two open-access textbooks: Bhattacherjee's (2012) Social science research: Principles, methods, and practices and Blackstone's (2012) Principles of sociological inquiry: Qualitative and quantitative methods. I first used Bhattacherjee's book in a graduate-level criminal justice research methods course. I chose the book because it was an open educational resource that covered the major topics of my course. While I found the book adequate for my purposes, the business school perspective did not always fit with my criminal justice focus. I decided to rewrite the textbook for undergraduate and graduate students in my criminal justice research methods courses. As I researched other open-educational resources for teaching social science research methods, I found Blackstone's book, which covered more of the social science and qualitative methods perspectives that I wanted to incorporate into my book.

As a result, this open-access textbook includes some content from both previous works along with my own additions based on my extensive experience and expertise in conducting qualitative and quantitative research in social science settings and in mentoring students through the research process. My Ph.D. is in Sociology, and I currently teach undergraduates and graduate students in a criminal justice program at Weber State University. Throughout my career, I have conducted and published the results of research projects using a variety of methods, including surveys, case studies, in-depth interviews, participant observation, content analysis, and secondary analysis of quantitative data. I have also mentored undergraduates in conducting community-based research projects using many of these same methods with the addition of focus groups and program evaluations.

In this book, I have extensively cut, reordered, revised, and edited information from the two original textbooks and added new material from my own expertise. I have also added examples relevant to criminal justice students as well as end-of-chapter resources such as key terms and discussion questions to provoke more in-depth understanding of important ideas in each chapter. Finally, I have worked with my university's instructional designers to ensure that this book meets accessibility standards. For example, the choice to use a sans-serif font and 1.5-spaced lines increases accessibility of the text for students who rely on screen readers.

Throughout the book, I have tried to forego academic jargon in favor of a more conversational tone appropriate for undergraduate students taking their first methods courses as well as graduate students who may not remember what they learned in their undergraduate methods courses. For instructors teaching graduate students, I assume that this book will serve as a brief primer that can then be expanded upon using other assigned readings and resources for more in-depth learning and application to original research projects.

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Chapter 1

Scientific Research

Chapter 1 objectives

1. Define the term science.
2. Distinguish between scientific knowledge and other forms of knowledge.
3. Identify three phases of the scientific research process.
4. Explain four elements of the scientific method.

What is research? Depending on who you ask, you will likely get very different answers to this seemingly innocuous question. Some people say that they conduct research by reading news reports or product reviews. Television news channels supposedly conduct research by polling viewers on topics such as upcoming elections or proposed government-funded projects. Undergraduate students might say that they conduct research online to find information they need to complete assigned projects or papers. Graduate students might view research as collecting or analyzing data related to a specific project. Local police departments might say that they research solutions to problems such as lack of trust in law enforcement by holding community meetings in which they listen to community members' concerns. Despite all the ways that we use the term "research" in everyday life, scientific research projects rely on systematically collecting and analyzing data using scientifically valid strategies. This chapter will help you understand the definition of science, how scientific knowledge is different from other types of knowledge, and three key elements of the scientific research process.

Science

Etymologically, the word "science" is derived from the Latin word *scientia* meaning knowledge. **Science** refers to a systematic and organized body of knowledge in an area of inquiry. Science can be grouped into two broad categories: natural science and social science.

Natural science is the science of naturally occurring objects or phenomena, such as light, objects, matter, earth, celestial bodies, or the human body. Natural sciences can be further classified into physical sciences, earth sciences, life sciences, and others. Physical sciences consist of disciplines such as physics (the science of physical objects), chemistry (the science of matter), and astronomy (the science of celestial objects). Earth sciences consist of disciplines such as geology (the science of the earth). Life sciences include disciplines such as biology (the science of human bodies) and botany (the science of plants).

Social science is the science of people or collections of people, such as groups, organizations, societies, and economies, and their individual or collective behaviors. Social sciences can be classified into disciplines such as psychology (the science of human behaviors), sociology (the science of social groups), and economics (the science of firms, markets, and economies). While these are distinct disciplines, they often overlap and create interdisciplinary fields such as the field of criminal justice studies.

Scientific knowledge

Consider for a moment how you know what you know. When you sit in the driver's seat of a car, how do you know what will happen when you press your foot on one of the pedals? How do you know the rules of a sport? If you play a sport, how might you have learned the sport in different ways than

someone who loves to watch but has never played? How do you know about issues happening in places other than your own communities? Think about your major or program of study. How do you know what you know about the criminal justice system or psychological phenomena or the role of social norms in society? As these questions illustrate, our knowledge about the world comes from many different sources including textbook-based information, trial and error, news media, and scientific studies.

Some sources of our knowledge about the world include experiences, authority, and scientific research. Three types of experiential knowledge include informal observations, selective observations, and overgeneralization. **Informal observation** is a way of knowing based on watching the world around us and drawing conclusions without any systematic process for observing or analyzing our observations. Direct experiences with the social world can provide this type of knowledge. For example, if you pass a police officer driving 20 miles over the speed limit on a two-lane highway, you'll probably learn that that's a good way to earn a traffic ticket. The problem with informal observation is that sometimes it is right, and sometimes it is wrong. Without any deliberate, formal process for observing or assessing the accuracy of our observations, we can never really be sure of the accuracy of our informal observations. In the example of the speeding ticket, you may receive a ticket in one instance, but not in another. Through informal observations, you might start to believe that factors such as having a blue car or out-of-state license plates impact your chances of receiving a ticket, but you have no way of determining whether this is in fact true or not.

Selective observation occurs when we base our beliefs only on the patterns we want to see or think we see in our everyday lives. This is also called confirmation bias because we see events that confirm our existing conclusions and disregard other events that could challenge those conclusions. Sometimes, these observations are based on stereotypes. For example, if a police officer

pulls over a car driven by a black man, receives consent to search the car, and finds drugs in the car, she may conclude that black drivers probably have drugs in their cars. Imagine the officer then pulls over two more cars, one driven by a black man and one by a white woman. If she finds drugs in both cars, she may disregard the drugs in the white driver's car as an anomaly while using the drugs in the black driver's car as an example that reinforces the perceived pattern of drugs in black drivers' cars. Over time, the perceived pattern may become so entrenched that she asks to search the cars of black drivers more than white drivers, further reinforcing the perception of a pattern of drugs being found more often in black drivers' cars.

If we asked the officer to think more broadly about her experiences with finding drugs in cars she's pulled over, she would probably acknowledge that she had encountered many white drivers with drugs in their cars and that even black drivers she'd pulled over hadn't had drugs in their cars. This officer engaged in selective observation by noticing only the pattern that she wanted to find at the time. If, on the other hand, the officer's experience with the first black driver had been her only experience with any black driver, then she would have been engaging in **overgeneralization** by assuming that broad patterns exist based on very limited observations.

While experiences shape much of our knowledge about the world, people in positions of **authority** also contribute to what we know. We might rely on parents, government agencies, school administrators, teachers, and church leaders as sources of knowledge about the world. Often, the information we hear from these authority figures can become embedded in our knowledge in the form of ideas that we've always known to be true. It makes sense that we might believe something to be true because someone we look up to or respect has said it is so, and this type of knowledge often forms the basis for scientific research questions. However, knowledge rooted in authoritative statements

differs from scientific knowledge derived from systematic inquiry into a particular topic.

Scientific knowledge refers to a generalized body of laws and theories that explain a phenomenon or behavior and are acquired using the scientific method. The goal of scientific research is to observe patterns of phenomena or behaviors (i.e., laws) and propose systematic explanations of the underlying phenomenon or behaviors (i.e., theories). Social scientific knowledge is knowledge based on systematically observing and explaining social phenomena. Scientific knowledge may be imperfect or even quite far from the truth. Sometimes, there may not be a single universal truth, but rather an equilibrium of "multiple truths." The theories that emerge from scientific knowledge and contribute to further study of a phenomenon or behavior are created by scientists to explain a particular phenomenon. As such, theories may be strong or weak explanations, depending on the extent to which they fit with reality. All scientific knowledge changes over time with further study using more accurate methods and more informed logical reasoning.

The scientific research process

The preceding section described science as knowledge acquired through a scientific method. So, what exactly does the scientific research process look like? First, research is a never-ending cycle. We ask questions, investigate answers, and integrate our findings into existing knowledge. Then, our new findings bring up more questions and the cycle begins again. The goal of scientific research is not to find THE answer; rather, the scientific research process seeks to provide new insights into ongoing questions and conversations about a particular topic. Those insights always lead to new questions and new investigations. Figure 1.1 illustrates the key features of the scientific research process: questioning, investigating, and integrating.

Figure 1.1 The Scientific Research Process

The circular model of the research process provides a very broad overview of the process of scientific research. This textbook focuses somewhat on the questioning phase of the process and mostly on the investigation phase. However, a solid understanding of the entire research cycle helps illustrate the importance of each phase. The **questioning** phase is a type of exploration of the social world. Researchers may start with a question about the social world that emerges from informal or selective observations, authoritative knowledge, or other scientific studies. Forming research questions often requires examining the published literature on a topic to understand the current state of knowledge in that area and identifying theories that may help answer the research questions.

Once a researcher has identified a question, they systematically gather and analyze data to **investigate** potential answers to the question. Scientific investigation starts with designing a research project that serves as a blueprint of the activities needed to answer the research questions. Research design includes selecting a research method, designing precise measures for abstract theoretical constructs, and devising an appropriate strategy for finding a subset of the population to study. Later chapters in this book cover each of these elements of the investigation stage of research. For now, let us consider some of the types of questions researchers must answer as they design their research project.

In selecting a research method, researchers must decide whether their research question would best be answered using numerical or narrative data. Would a survey, experiment, case study, or interviews be the most likely to provide answers to the research questions? The type of research question will inform the research method, but even when a researcher has chosen the method, more questions need to be answered. For example, if the researcher plans an experiment, then what will differentiate between the experimental and control groups? If a survey is chosen, will it be administered by mail, telephone, the internet, or a combination of some or all of these? Would multiple methods make the most sense?

With any given research method, the researcher must figure out how to measure abstract constructs. This is especially relevant to social science research because many of the constructs that researchers are interested in are hard to define, let alone measure accurately. For example, how would you define prejudice, alienation, or liberalism? Once you have come up with an adequate definition, how would you measure a person's level of prejudice? What about their alienation from society or their liberalism? Sometimes, researchers can use measures developed by previous researchers to study the same constructs. Other times, such measures are not available, and the researcher must design

new ways to measure their constructs. This can easily be a long and laborious process, with multiple rounds of pretests and modifications before the newly designed instrument can be accepted as scientifically valid.

Next, researchers must carefully choose the target population from which they wish to collect data and develop an appropriate strategy for finding a subset of the population to study. This process, called **sampling**, and it involves answering many questions about the researcher's intended population. For example, does the research question require looking at individuals or communities or neighborhoods or states or countries? What types of these entities should the researchers target? The scientific research process requires answering these questions using scientifically valid techniques, which are discussed later in this book.

Having designed the blueprint for the research project, the researcher then proceeds to implement the research plan. Some researchers may conduct small-scale tests (also called **pilot tests**) of their plans for measuring constructs to work out any potential problems in the research design and/or measurements. After successful pilot testing, the researcher may then proceed with collecting, analyzing, and interpreting data based on the research plan.

Researchers must keep an open mind during the investigation phase because the findings may or may not align with presumed answers or with findings from previous scientific studies. Regardless of how well the findings fit with previous knowledge or preconceived ideas of what answers would be found, the new findings contribute to ongoing conversations in the scientific world about the phenomenon under study. In the final phase of the scientific research process, the researcher **integrates** their findings into existing scientific knowledge by writing up a summary of the research project and its findings in the context of previous scientific work on the topic. The final research report

documents the entire research process and findings. It provides detailed descriptions, justifications, and outcomes of all the choices made during the research process (e.g., theories, constructs, measures, research methods, sampling, etc.).

The research report allows other researchers to determine the extent to which the research project adhered to the **scientific method**, a standardized set of techniques for building scientific knowledge. These techniques include strategies for making valid observations, accurately interpreting results, and generalizing those results beyond a specific research study. In the social sciences, the scientific method includes a variety of research approaches, tools, and techniques for collecting and analyzing different types of data. This book introduces you to these approaches in later chapters. For now, let us look more broadly at four key elements that characterize scientific inferences and findings:

1. *Logic:* Scientific inferences must be based on logical principles of reasoning.
2. *Confirmability:* Inferences must match observed evidence.
3. *Replicability:* Other scientists must be able to independently replicate or repeat a scientific study and obtain similar, if not identical, results.
4. *Scrutiny:* The procedures and inferences must withstand critical review by other scientists (**peer review**).

The final research report must include enough detail to demonstrate the logic, confirmability, and replicability of the research project so that other researchers can critically review the study and its findings to determine whether the project meets the standards necessary to contribute to scientific knowledge.

As you begin to think like a researcher, you will start to see the world as a set of potential research questions that need scientific study. Remember, even a

research project that adheres to the four characteristics of the scientific method cannot provide THE answer to a given research question. Research is a career-long process of questions, investigations, integration, and more questions.

Summary

- Science is a systematic, organized body of knowledge in a particular area of inquiry and can be grouped into natural science and social science.
- Scientific knowledge is distinct from other types of knowledge (e.g., informal observation, selective observation, overgeneralization, and authority) in its focus on systematic observation and explanation of social phenomena using the scientific research process.
- The scientific research process can be broadly categorized into three phases—questioning, investigating, and integrating—that repeat in a cycle as more scientific knowledge is produced.
- The scientific method provides a set of techniques for building scientific knowledge that reflects key scientific tenets of logic, confirmability, replicability, and withstanding scrutiny.

Key terms

authority
confirmability
informal observation
integration phase
investigation phase
logic
natural science
overgeneralization
peer review
questioning phase
replicability
sampling
science
scientific knowledge
scientific method
scientific research
pilot tests
process
selective observation
social science

Discussion questions

1. How are the natural sciences similar to and different from the social sciences?
2. How do you know what you know? List an example from your own life that illustrates each of the five types of knowledge covered in this chapter.
3. Think about a time that you researched an issue. What steps in the scientific research process did you take? What steps did you skip? Would your research be considered scientific research? Why or why not?
4. What question(s) do you have about the social world that could be answered using scientific research? How might scientists go about investigating answers to that question? What population might they choose? How might they integrate their findings into existing scientific knowledge?
5. Why are each of the four key elements of scientific inferences and findings important to scientific knowledge and the scientific research process?

Chapter 2

Paradigms, Theories, and Research

Chapter 2 objectives

1. Define paradigm, and describe the significance of paradigms.
2. Identify and describe four paradigms found in the social sciences.
3. Define theory.
4. Describe the role that theory plays in scientific inquiry.

As discussed in Chapter 1, scientists begin their research by asking questions. Research questions can be motivated by all types of knowledge, but scientists' perceptions of how the world works will shape the kinds of questions they ask and the kinds of strategies they use to answer those questions. During the research process, scientists constantly move back and forth from a **theoretical** level (abstract, generalizable ideas) to an **empirical** level (the level of actual observations and data analysis). Scientists learn to visualize the abstract from actual observations in a mental game of connecting the dots to identify hidden concepts and patterns, and then synthesizing those patterns into generalizable ideas that apply to contexts outside of the initial observations. While these skills take many years to develop, learning some basic elements of the theoretical level is a useful first step toward understanding how to think like a researcher. This chapter discusses how social science paradigms and theories inform the scientific research process.

Paradigms of social science research

The word "paradigm" was popularized by Thomas Kuhn (1962) in his book *The Structure of Scientific Revolutions* in which he identified patterns of activities that shape the progress of science. For our purposes, we'll define a **paradigm** as a way of viewing the world or the frames of reference we use to organize our

thoughts and observations. Think of paradigms as mental models that we use to understand our human experiences. For example, different people perceive social issues and institutions in different ways, which may constrain their thinking and reasoning about the observed phenomenon. For instance, people tend to have different perceptions of the causes of crime which then contribute to different opinions on how to solve crime-related issues. Some people believe that moral failings and/or a lack of social controls contribute to crime, leading to support for higher arrest rates and harsher punishments. Other people believe that crime stems from larger social issues such as poverty and racial discrimination, which may lead to support for social programs to provide a basic safety net and/or reduce inequality as crime-reduction strategies.

It can be difficult to fully grasp paradigmatic assumptions because we are very ingrained in our own personal everyday ways of thinking. Chances are, if you have an opinion about the best ways to reduce crime, you are pretty certain about the truth of your perspective. Then again, the person who sits next to you in class may have a very different opinion and yet be equally confident about the truth of their perspective. Which of you is correct? You are each operating under a set of assumptions about the way the world does—or at least should—work. Perhaps your assumptions stem from your political perspective, which helps shape your view on a variety of social issues, or perhaps your assumptions are based on what you learned from your parents or in church. In any case, a paradigm shapes your stance on the issue.

Our personal paradigms are like “colored glasses” that govern how we view the world and how we structure our thoughts about what we see in the world. Paradigms are often hard to recognize because they are implicit, assumed, and taken for granted. However, recognizing these paradigms is key to making sense of and reconciling differences in people’ perceptions of the same social phenomenon. For instance, why might a rehabilitation program be

successful in one community but fail miserably in another? A researcher looking at the world through a rational lens will look for explanations of the problem such as inadequate programming or a poor fit between the program and the context in which it is being implemented. Another researcher looking at the same problem through a social lens may seek out social deficiencies such as inadequate training for program facilitators or lack of management's support for the program. Researchers examining the problem through a political lens may look for organizational politics that may change the implementation process.

As these examples illustrate, subconscious paradigms often constrain the concepts researchers attempt to measure, their observations, and their subsequent interpretations of a phenomenon. Given the complex nature of social phenomena, many paradigms may be partially correct, and researchers may need to operate from multiple paradigms to fully understand a problem and potential solutions. Social scientific researchers often operate from one of four paradigms: positivism, social constructionism, critical, and postmodernism.

Positivism

When you think of science, you most likely consider it through a positivist paradigm. **Positivism** operates according to the principles of objectivity, knowability, and deductive logic. This paradigm calls for value-free social science research in which researchers aim to abandon their biases and values in a quest for objective, empirical, and knowable truth. It holds that the creation of scientific knowledge should be restricted to what researchers can observe and measure. The works of French philosopher Auguste Comte (1798-1857) spurred the positivist paradigm as an attempt to separate scientific inquiry from religion (where the precepts could not be objectively observed). He argued that theories created via reasoning are only authentic if they can be verified through observations. As a result, positivism led to **empiricism**, or a blind faith in observed data and a rejection of any attempt to extend or reason beyond

observable facts. Since human thoughts and emotions could not be directly measured, there were not considered to be legitimate topics for scientific research.

Social constructionism

In the late 1960's, two sociologists, Peter Berger and Thomas Luckman, developed the social constructionist paradigm in their book, *The social construction of reality: A treatise in the sociology of knowledge*. While positivists seek to discover "the truth," the **social constructionist** framework posits that "truth" is varying, socially constructed, and ever-changing. In other words, there is no truth that simply exists out there, waiting for researchers to discover it. Instead, we create reality through our interactions and our interpretations of those interactions. Key to the social constructionist paradigm is the idea that social context and interactions shape individual and social realities. Consider the evolution of face masks before and during the COVID-19 pandemic: a simple square of material edged with elastic bands transformed from an innocuous piece of protective equipment to an emotionally charged political symbol. Researchers who operate in the social constructionist paradigm would investigate how and why the meanings associated with face masks changed over time.

Critical paradigm

At its core, the **critical paradigm** focuses on power, inequality, and social change. Unlike the positivist paradigm, the critical paradigm posits that social science can never be truly objective or value-free. Researchers are human beings located within specific social structures in various positions of power. The same inherent biases that inform and are reinforced in everyday interactions influence the types of questions researchers ask, how they ask those questions, and their methods for investigating and answering those questions. Researchers who work within this paradigm believe that scientists must evaluate and be transparent

about how their biases impact their work in every phase of the research process. Researchers within this paradigm also operate from a perspective that scientific investigation should be conducted with the express goal of social change.

Postmodernism

In its briefest form, the **postmodernist** paradigm asserts that truth in any form may or may not be knowable. Whereas positivists claim that there is an objective, knowable truth, postmodernists would say that there is not. Social constructionists may argue that truth is in the eye of the beholder (or in the eye of the group that agrees on it), but postmodernists may claim that we can never really know such truth because, in studying and reporting others' truths, researchers stamp their own truth onto the investigation. Finally, while the critical paradigm may argue that power, inequality, and change shape reality and truth, a postmodernist may in turn ask, whose power, whose inequality, whose change, whose reality, and whose truth?

As these examples suggest, the postmodernist paradigm poses quite a challenge for social scientific researchers. How does one study something that may or may not be real or that is only real in your current and unique experience of it? Consider this question in relation to the definitions of science, scientific knowledge, and the scientific method discussed in chapter one. Underlying these concepts is the assumption of some true explanation of a phenomenon or behavior that we can discover using appropriate methods. The postmodernist paradigm challenges this basic assumption of science. Instead, postmodernist researchers suggest that by studying a phenomenon or behavior, researchers are essentially creating the phenomenon by using human language to describe and investigate it.

Theories

Much like paradigms, theories provide a way of looking at the world and understanding human interaction. Like paradigms, theories can be broad, but unlike paradigms, theories might be narrower in focus, perhaps just aiming to understand one phenomenon, without attempting to tackle a broader level of explanation. In the social sciences, **theories** are sets of systematically interrelated ideas intended to explain a social phenomenon or behavior. They help us answer the "why" and "how" questions we often have about the patterns we observe in social life. For example, criminological theories can help answer the question of why and how some people stop committing crime as they become adults while others continue to commit crime throughout their entire lives. While paradigms may point us in a particular direction with respect to our "why" questions, theories more specifically map out the explanation, or the "how," behind the "why." A good scientific theory should be well supported using observed facts and should also have practical value, which means that an essential challenge for researchers is to gather and analyze data to build strong and more comprehensive theories to explain social phenomena.

Some theories related to crime that you may have heard of include conflict, differential association, labeling, life course, rational choice, routine activity, social control, social disorganization, social learning, and strain theories. This textbook does not cover these theories in detail; however, I encourage you to conduct some keyword searches online to learn more about these theories and/or revisit your notes from theories classes you may have taken. From a research methods standpoint, these theories are important because they propose answers to the "why" and "how" questions of crime. Many have changed over time as scientific studies have provided new insights from data that researchers have scientifically collected and analyzed, as well as studies that

approach the same questions from different paradigms of social science research.

Summary

- A paradigm is a mental model we use for understanding our social world. Our paradigms are often difficult but important to recognize because they constrain researchers' measurements and observations, and we often need research conducted in more than one paradigm to fully understand complex social phenomena.
- Four paradigms found in the social sciences include the positivist, social constructionist, critical, and postmodernist paradigms. The latter three are distinct from the first paradigm in their critique of the idea that social science research can and should be objective and value-free.
- Theories are explanations of the social world that attempt to answer "how" and "why" questions. Theories are generally narrower than paradigms.
- Social scientific research aims to use empirical data to build stronger and more comprehensive theories about the "how's" and "why's" of the social world.

Key terms

critical paradigm	paradigm	social constructionism
empirical level	positivism	theoretical level
empiricism	postmodernism	theories

Discussion questions

1. What do you think should happen to people who commit murder? How might your thoughts differ from another person's answer to this question? What do those differences tell you about your personal paradigms?
2. Which of the four paradigms described in this chapter do you find most and least compelling? Why?
3. Look online for a brief explanation of one of the criminological theories listed in this chapter. Use the definition of a theory to explain how we know that the theory you chose is a theory.
4. Refer to the theory you chose in question 3. What question does the theory you chose attempt to answer? What explanation does the theory give for that question?

Chapter 3

Ethics in Research

Chapter 3 objectives

1. Define ethics and explain their importance to social scientific research.
2. Identify ethical issues in historical research studies.
3. Explain the rise and functions of institutional review boards.
4. Define informed consent and describe how it works.
5. Explain the unique concerns related to vulnerable populations.
6. Distinguish between anonymity and confidentiality.
7. Identify some ethical standards of professional organizations.

Webster's dictionary defines **ethics** as "a set of moral principles" (https://www.merriam-webster.com/dictionary/ethic) that helps us distinguish between right and wrong. In social science research, professional codes of conduct and university committees called Institutional Review Boards define and enforce ethical standards for conducting research. Even if not explicitly specified, scientists must still abide by standards shared by the scientific community on what constitutes acceptable and unacceptable behaviors in the professional conduct of scientific research.

Ethical standards in research arose in part as a response to researchers and organizations that manipulated people and data to advance private agendas and, in the process, harmed people involved in research and disregarded their basic human rights. One major reason that this could happen is that unethical behaviors may not be illegal. If a researcher's conduct falls within a gray zone between ethics and law, she may not be culpable in the eyes of the law, but may still have harmed someone, face severe damage to professional reputation, and may even lose her job on grounds of professional misconduct. Ethical norms may vary from one

society to another. This book focuses on ethical standards as applied to scientific research in Western countries.

Human versus nonhuman subjects

Ethical concerns associated with research conducted on human beings vary dramatically from those of research conducted on nonliving entities. The US Department of Health and Human Services has an Office of Human Research Protections, which provides guidance on and regulates research conducted with human subjects. As published by that office, Title 45 of the Code of Federal Regulations (CFR), part 46, which is entitled "Protection of Human Subjects" (also called the 2018 Common Rule) defines a **human subject** as "a living individual about whom an investigator (whether professional or student) conducting research obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens." (45 CFR 46). In some states, human subjects also include deceased individuals and human fetal materials.

By contrast, nonhuman research subjects are objects or entities that investigators manipulate or analyze in the process of conducting research. In criminal justice research, nonhuman subjects typically include sources such as newspapers, historical documents, legislation, television shows, buildings, and even materials from popular culture such as videos or music. While fewer regulations tend to apply to research on nonhuman subjects, there are still ethical considerations that all researchers must consider regardless of their research subjects. We'll discuss those considerations as well as concerns unique to research on human subjects.

A historical look at research on humans

Research on humans hasn't always been regulated as it is today. Medical vaccination trials provide the earliest documented cases of research using human subjects (Rothman, 1987). For example, in the late 1700s, scientist Edward Jenner exposed an 8-year-old boy to smallpox to identify a vaccine for the devastating disease. Medical research on human subjects continued without much law or policy intervention until the mid-1900s when, at the end of World War II, Nazi doctors and scientists were put on trial for conducting experiments in which they tortured and murdered many people who had been forced into concentration camps. Surprisingly, at the very time that the Nazis conducted their horrendous experiments, Germany actually did have written regulations specifying that human subjects must clearly and willingly consent to their participation in medical research (Faden & Beauchamp, 1986). Obviously, Nazi experimenters completely disregarded these regulations; however, the fact that they existed suggests that efforts to regulate the ethical conduct of research are necessary but certainly not sufficient for ensuring the protection of human rights. The trials, conducted in Nuremberg, Germany, resulted in the creation of the **Nuremberg Code**, a 10-point set of research principles designed to guide doctors and scientists who conduct research on and with human subjects. Today, the Nuremberg Code guides medical and other research conducted on human subjects, including social scientific research.

Social scientists have also conducted unethical research on humans. In the 1960s, psychologist **Stanley Milgram** (1974) conducted a series of experiments designed to understand obedience to authority. During the experiments, he tricked people into believing they were administering an electric shock to other research subjects. In fact, the shocks weren't real at all, but some of Milgram's research participants experienced extreme emotional distress after the experiment (Ogden, 2008). For some people, the realization that they were

willing to administer painful shocks to another human being just because someone who looks authoritative has told you to do so might indeed be traumatizing, even if you later learn that the shocks weren't real.

Around the same time that Milgram conducted his experiments, psychologist Philip Zimbardo created the **Stanford Prison Experiment**. He and his research team recruited Stanford students to participate in a study about the psychology of imprisonment (Haney, Banks, and Zimbardo, 1973). They randomly assigned students to be prisoners or guards, and then put them into a mock prison that they had designed in the basement of one of the buildings on campus. The students lived there twenty-four hours per day for the duration of the experiment, which was supposed to be two weeks, but lasted only six days. Not long after the experiment began, the guards began to inflict psychological abuse and torture upon the prisoners, causing the prisoners to suffer. Zimbardo acted as the prison's superintendent, keeping close watch on what happened in the prison. Zimbardo let the experiment (and the suffering) continue until one of his former graduate students confronted him about his participation in the experiment and his decision to let it continue (https://www.prisonexp.org/faq). Zimbardo ended the experiment the next day. Despite raising serious ethical concerns, the experiment's findings became one of the most famous studies of obedience to authority in social psychology and criminology research. Later research would indicate many flaws (ethical and procedural) in the study that call into question the experiment's main findings (Le Texier, 2019).

Surprisingly, the Stanford Prison Experiment had been approved by the university's **institutional review board** (IRB), a committee of people responsible for reviewing and approving research projects to ensure that human rights are protected during research involving human subjects. The fact that the IRB had approved the prison experiment demonstrates once again that having rules and regulations in place with a body designated to enforce them doesn't necessarily

prevent abuses from happening. The next section explains the rise and purposes of IRBs for ensuring the ethical conduct of research.

Institutional review boards

The Tuskegee Syphilis Experiment, conducted in Alabama from the 1930s to the 1970s, led to the establishment of institutional review boards across the US. The experiment sought to understand the natural progression of syphilis in human beings. Investigators working for the Public Health Service enrolled hundreds of poor African American men in the study, some of whom had been diagnosed with syphilis and others who had not. Even after effective syphilis treatment was identified in the 1940s, researchers denied treatment to research participants so that the researchers could continue to observe the progression of the disease. In 1972, the public learned of the experiment, and the study ended. In 1997, President Clinton publicly apologized on behalf of the American people for the study.

The Tuskegee experiment led to increasing public awareness of and concern about research on human subjects. In 1974, the US Congress enacted the **National Research Act**, which created the National Commission for the Protection of Human Subjects in Biomedical and Behavioral Research. In 1979, the commission produced **The Belmont Report**, a document outlining basic ethical principles for research on human subjects (National Commission for the Protection of Human Subjects in Biomedical and Behavioral Research, 1979).

The Act also required that all institutions receiving federal support establish institutional review boards (IRBs) to protect the rights of human research subjects (Pub. L. no. 93-348 Stat 88. (1974)). Since that time, many organizations where research is conducted but do not receive federal support have also established review boards to evaluate the ethics of the research they conduct.

IRBs are tasked with ensuring that the rights and welfare of human research subjects will be protected at all institutions, including universities, hospitals, nonprofit research institutions, and other organizations, that receive federal support for research. IRBs typically consist of members from a variety of academic disciplines as well as representatives from the community in which they reside. For example, representatives from nearby prisons, hospitals, or treatment centers might sit on the IRBs of university campuses near them. The diversity of membership helps to ensure that the many and complex ethical issues that may arise from research with human subjects will be considered fully and by a knowledgeable and experienced panel of people.

The IRB approval process require completing a structured application providing complete information about the research project, the researchers (principal investigators), and details on how the subjects' rights will be protected. Proposals often require additional documentation such as a consent form, research questionnaire or interview protocols, and any other documents that will be used or distributed to participants in the project. Researchers must also demonstrate familiarity with the ethical principles of research by providing documentation that they have completed a research ethics course. Researchers can only begin recruiting participants and collecting data after the IRB review committee has approved the project. These procedures even apply to students who conduct research with human subjects, although some universities make exceptions for classroom projects that will not be shared outside of the classroom.

You may be surprised to learn that social science researchers don't always appreciate IRBs. Of course, most researchers want to conduct ethical research, but some IRBs are most well-versed in reviewing biomedical and experimental research, so they may not fully grasp other types of research designs such as qualitative and open-ended research designs. The members of

IRBs often want to know in advance exactly who will be observed, where, when, and for how long, whether and how they will be approached, exactly what questions they will be asked, and what predictions the researcher has for her or his findings. For some projects, providing this level of detail is impossible even with a solid research design. For example, a researcher who wanted to engage in participant observation in a group of 200-plus members for a year or two may not be able to answer all of the questions that IRB members might want to know.

While IRBs do not intend to stop researchers from studying controversial topics or make them avoid using certain methodologically sound data collection techniques, sometimes that's what happens. Review boards serve a necessary and important function, so researchers must continue to educate IRB members about the wide variety of valid and reliable scientific research methods and topics important to social scientific studies.

Ethical issues in scientific research

As we have discussed, conducting research on humans presents many ethical considerations that researchers must account for before beginning their research projects. This section discusses some of the ethical issues that scientists must consider before conducting research with human beings.

Informed consent

Researchers cannot force anyone to participate in a research project without that person's knowledge or consent. Human subjects in a research project must be aware that their participation in the study is voluntary, that they have the freedom to withdraw from the study at any time without any unfavorable consequences, and that they will not be harmed because of their participation or non-participation in the project. For example, if an instructor asks her students to fill out a questionnaire as part of a research study, she must

inform them that their participation is voluntary, and she must not provide bonus points for participation in the study. It would be unethical to provide extra credit for participants but not for non-participants because it would place non-participants at a distinct disadvantage. To avoid this issue, the instructor could give everyone extra credit regardless of participation, or she could provide an alternate task for non-participants so that they too could earn extra credit without participating in the research study.

To ensure that researchers follow the ethical standard of voluntary participation, they must design procedures to obtain subjects' informed consent to participate in their research. **Informed consent** is a human subject's voluntary agreement to participate in research based on a full understanding of the research and of the possible risks and benefits of participating in the study. Before the start of the study, all participants must receive and sign a form that clearly describes their rights to not participate and to withdraw at any time. Although obtaining informed consent sounds simple, ensuring that a participant has given informed consent is much more complicated than you might presume.

First, in giving their informed consent, subjects may neither waive nor even appear to waive any of their legal rights. The 2018 Common Rule that we discussed earlier in this chapter also specifies that research subjects cannot release a researcher or the researcher's sponsor or institution from legal liability should something go wrong during the course of their participation in the research (45 CFR 46). You can read the full set of requirements for informed consent in section 46.116 of the 2018 Common Rule on the Department of Health and Human Service's web site. For now, we'll focus on the legal issues related to informed consent.

Most social science research does not involve asking subjects to place themselves at risk of physical harm by, for example, taking untested drugs or

consenting to new medical procedures, social scientists do have to assess the potential for other types of risks such as social and economic harms that may result from participation in the research. For example, imagine if a researcher fails to sufficiently conceal the identity of a police officer who, in an interview, explains that she believes her chief's administrative style is damaging the department. If this information became public knowledge, then her employment, professional reputation, and/or working environment may be jeopardized. If this happened, then the researcher might face legal action. While this example might seem extreme, it illustrates how even social scientists conduct research that could result in very real legal ramifications.

Beyond the legal issues, most institutional review boards (IRBs) require researchers to share some details about the purpose of the research, possible benefits of participation, and, most importantly, possible risks associated with participating in that research with their subjects. In addition, researchers must describe how they will protect subjects' identities, how and for how long any data collected will be stored, and whom to contact for additional information about the study or about subjects' rights. This information is typically shared in an informed consent form that researchers provide to subjects. Appendix A provides an example of an informed consent form used in a research project about African Americans' healthcare experiences and outcomes. The form includes the information required to ensure that participants are fully informed about study before agreeing to participate.

While researchers have an obligation to provide information about their study to potential subjects before data collection, disclosing such information may potentially bias subjects' responses. For instance, if the purpose of a study is to examine to what extent subjects will abandon their own views to conform with "groupthink," and they participate in an experiment where they listen to others' opinions on a topic before voicing their own, then disclosing the study's

purpose before the experiment will likely sensitize subjects to the treatment. Under such circumstances, members of the IRB will determine whether researchers have disclosed enough information and if the potential benefits of the study outweigh the risks of keeping the information secret and any other risks to participants. Even if a study's purpose cannot be revealed before data collection begins, researchers should reveal the purpose and the potential risks or harms the participant might have experienced during the study in a debriefing session immediately following the data collection process.

In some cases, subjects are asked to sign the consent form (or, in an online study, to check a box) indicating that they have read it and fully understand its contents. In other cases, subjects are simply provided a copy of the consent form and researchers are responsible for making sure that subjects have read and understand the form before proceeding with any kind of data collection. In either case, the researchers must have assurance that participants in the study understand the procedures, possible risks, benefits, legal issues, and other information related to the study before they begin participating in the research.

One last point that researchers must consider when preparing to obtain informed consent is that not all potential research subjects are equally competent or legally allowed to consent to participate in research. These people are sometimes referred to as members of **vulnerable populations**, or people who may be at risk of experiencing undue influence or coercion. Some examples of vulnerable populations include children, people in prison, and people with impaired decision-making capacities. The US Department of Health and Human Services provides guidelines on research with vulnerable populations.

In terms of informed consent, vulnerable populations require more stringent rules for ensuring voluntary and informed participation in research. In

research with children, parents or guardians often sign the informed consent form while the children themselves may sign special, age-appropriate consent forms designed specifically for them. People in prison or otherwise under supervision within the criminal justice system also qualify as vulnerable populations. Concern about the vulnerability of these subjects comes from the very real possibility that they could believe they will receive some highly desired reward, such as early release, if they participate in research. Another issue comes from the potential exploitation of people in prison or under supervision for research purposes with no real benefits to study participants (recall the experiments that Nazi doctors performed on people in concentration camps as one example).

Regardless of what specific factors lead a potential participant to be categorized as part of a vulnerable population, researchers must try not to exclude members of vulnerable populations from participation in research simply on the grounds that they are vulnerable or that obtaining their consent may be more complex. Although the procedures for informed consent and approval of research projects may be more rigorous when the research involves vulnerable populations, people in these groups must be represented in the body of knowledge produced by social scientists.

Protection of identities

The informed consent process requires researchers to explain how they will protect participants' identities throughout the research project. In protecting subjects' identities, researchers typically promise to maintain either the anonymity or the confidentiality of their research subjects. **Anonymity** is the more stringent of the two. When a researcher promises anonymity to participants, not even the researcher can link participants' data to their identifying information. For example, a survey sent by mail without any identification numbers to track who responds to the survey and who does not

would be categorized as an anonymous survey. Anonymity may be particularly important in studies of deviant or undesirable behaviors such as drug use or illegally downloading music. Subjects in these types of studies may not give truthful responses unless the researcher can ensure anonymity. In these cases, anonymity also ensures that authorities such as law enforcement can neither identify nor track subjects in the future.

Anonymity may be impossible to guarantee because several of the modes of data collection that social scientists employ, such as participant observation and face-to-face interviewing, require that researchers know the identities of their research participants. In these cases, a researcher should at least be able to promise confidentiality. **Confidentiality** means that a researcher may keep some identifying information on participants, but only the researcher can link participants with their data, and they promise not to do so publicly. Confidentiality is a less stringent protection of identity because responses and identifying information may still be used in court. For example, two years after the Exxon Valdez supertanker spilled ten million barrels of crude oil near the port of Valdez in Alaska, the communities suffering economic and environmental damage commissioned a San Diego research firm to survey the affected households about increased psychological problems in their families. Because the cultural norms of many indigenous peoples made such public revelations particularly painful and difficult, researchers assured participants confidentiality of their responses. When this evidence arose in court, Exxon petitioned the court to subpoena the original survey questionnaires (with identifying information) to cross-examine respondents regarding the answers they had given under the protection of confidentiality. The court granted Exxon's request. The case was settled before victims were forced to testify in open court, but the potential for similar issues regarding confidentiality in social science research remains a real concern.

The example consent form in Appendix A includes a section on "Confidentiality" that explains the efforts the researchers will take to try to maintain confidentiality. The section includes a disclaimer that the researchers may have to disclose participants' personal information if required by law.

Protecting research participants' identities is not always easy, especially for those conducting research on stigmatized groups or illegal behaviors. Sociologist Scott DeMuth learned that all too well when conducting his dissertation research on a group of animal rights activists. As a participant observer, DeMuth knew the identities of his research subjects. When some of his research subjects vandalized facilities and removed animals from several research labs at the University of Iowa, a grand jury called on DeMuth to reveal the identities of the participants in the raid. When DeMuth refused to do so, he was jailed briefly and then charged with conspiracy to commit animal enterprise terrorism and cause damage to the animal enterprise (Jaschik, 2009).

Professional codes of ethics

Most professional associations of researchers publish formal codes of conduct describing acceptable and unacceptable professional behaviors of their members. For criminal justice researchers, the Academy of Criminal Justice Sciences (ACJS) publishes a Code of Ethics that includes general principles of ethics for association members as well as a list of 22 ethical standards for members of the association as researchers. The standards are grouped into two categories including 1) objectivity and integrity in the conduct of criminal justice research, and 2) disclosure and respect of the rights of research populations by members of the academy. The first group of standards includes adhering to research standards, acknowledging limitations of research, fully and accurately reporting findings and sources of financial support and sponsorship of the research, honoring commitments, creating collaborative agreements about the division of labor in a research project, and disseminating research findings. The

second group of standards includes not misusing professional positions for fraud, ensuring informed consent, ensuring confidentiality where possible, ensuring minimal risk of harm of human subjects, anticipating potential threats to confidentiality and trying to address them, adhering to promises of confidentiality, and meeting federal and institutional requirements for research with human subjects. You can read the full ACJS Code of Ethics at https://www.acjs.org/page/Code_Of_Ethics.

Other professional organizations such as the American Society of Criminology also publish codes of ethics for their members. Regardless of the disciplines and/or associations with which a researcher is affiliated, she must ensure to adhere to the ethical standards of those organizations.

An Ethical Controversy

Robert Allen "Laud" Humphreys, an American sociologist and author, is best known for his Ph.D. dissertation, *Tearoom Trade*, published in 1970. For his dissertation, he collected data on the tearoom trade, the practice of men engaging in anonymous sexual encounters in public restrooms. Humphreys wished to understand who these men were and why they participated in the trade. To conduct his research, Humphreys offered to serve as a "watch queen," the person who keeps an eye out for police and gets the benefit of being able to watch the sexual encounters, in a local park restroom where the tearoom trade was known to occur. Humphreys did not identify himself as a researcher to his research subjects. Instead, he watched his subjects for several months, getting to know them, learning more about the tearoom trade practice and, without the knowledge of his research subjects, jotting down their license plate numbers as they pulled into or out of the parking lot near the restroom. With the help of several insiders who had access to motor vehicle registration information, Humphreys later used those license plate numbers to obtain the names and

home addresses of his research subjects. Then, disguised as a public health researcher, Humphreys visited his subjects in their homes and interviewed them about their lives and their health. Humphreys' research dispelled many myths and stereotypes about the tearoom trade and its participants. He learned, for example, that over half of his subjects were married to women and many of them did not identify as gay or bisexual. Humphreys' research is still relevant today. In fact, as the 2007 arrest of Idaho Senator Larry Craig in a public restroom at the Minneapolis–St. Paul airport attests, undercover police operations targeting tearoom activities still occur more than 40 years after Humphreys conducted his research. Humphreys' research is also frequently cited by attorneys who represent clients arrested for lewd behavior in public restrooms.

Humphreys' work sparked major controversy at his home university (for example, the chancellor tried to have his degree revoked), among sociologists in general, and among members of the public, as it raised concerns about the purpose and conduct of sociological research. In the original version of his report, Humphreys defended the ethics of his actions. In 2008, years after Humphreys' death, his book was reprinted with the addition of a retrospect on the ethical implications of his work. In his written reflections on his research and the fallout from it, Humphreys maintained that his tearoom observations constituted ethical research on the grounds that those interactions occurred in public places. But Humphreys added that he would conduct the second part of his research differently. Rather than trace license numbers and interview unwitting tearoom participants in their homes under the guise of public health research, Humphreys instead would spend more time in the field and work to cultivate a pool of informants. Those informants would know that he was a researcher and would be able to fully consent to being interviewed. In the end, Humphreys concluded that "there is no reason to believe that any research

subjects have suffered because of my efforts, or that the resultant demystification of impersonal sex has harmed society" (Humphreys 2008, p. 231).

Did Humphreys conduct ethical research? This question has no clear answer. Some argue that Humphreys' research was deceptive, put his subjects at risk of losing their families and their positions in society, and was therefore unethical (Warwick, 1973; Warwick, 1982). From this perspective, he should not have invaded others' right to privacy and/or deceived his participants in the name of science. Even some who considered observing tearoom activity to be acceptable because the participants used public facilities thought that the follow-up interview in participants' homes was unethical because of the way he obtained their home addresses and did not seek informed consent.

Others suggest that the benefits of Humphreys' research, namely the dissolution of myths about the tearoom trade specifically and human sexual practice more generally, outweighed the potential risks associated with the work (Lenza, 2004). From this perspective, the tearoom trade is an important sociological phenomenon worth investigating, there was no other way to collect the data, and that the deceit was harmless because Humphreys did not disclose his subjects' identities to anyone. Today, a sociologist would probably not be allowed to conduct a project similar to Humphreys', but the controversy is still hotly debated in discussions of research ethics.

Summary

- Ethics are moral principles that help us differentiate between right and wrong. They are important to social scientific research because they help ensure that scientists protect the rights of human subjects.
- Historically, research studies involving human subjects have violated ethical principles by forcing people to participate in medical experiments and causing harmful and undue emotional distress.
- Institutional review boards (IRBs) emerged in 1974 after the Tuskegee Syphilis Experiment. IRBs review and approve research projects to ensure that research will protect human rights.
- Informed consent is a person's voluntary agreement to participate in research based on a full understanding of the research and the possible risks and benefits of participating in the study. Researchers must ensure that participants have provided their informed consent before beginning to collect data.
- Vulnerable populations such as children, people in prison, and people with impaired decision-making capabilities require more stringent protections for ensuring informed consent and voluntary participation.
- Anonymity means that a researcher cannot link participants' data to their identifying information. Confidentiality means that a researcher can link participants' data to their identifying information, but they promise not to do so publicly.
- Professional organizations publish codes of ethics for their members. While each organization has their own code of ethics, they generally relate to integrity in the research process and expectations for the protection of human rights during the research process.

Key terms

anonymity
Belmont Report
confidentiality
ethics
human subject
informed consent
institutional review board
Milgram experiment
National Research Act
Nuremberg Code
professional code of ethics
Stanford prison experiment
vulnerable populations

Discussion questions

1. Visit the United States Holocaust Memorial Museum's website on the Nuremberg Code. List each of the ten basic principles of research on human subjects. How does each principle help protect human rights during research?
2. Browse the Stanford Prison Experiment website to learn more about this infamous experiment. Based on what you find there and what you've learned in this chapter, was the Stanford Prison Experiment ethical? Why or why not?
3. How did institutional review boards arise? Are they necessary for the conduct of ethical research? Why or why not?
4. Sociologist Scott DeMuth's case raises issues about the protection of identities in research with human subjects. What do you think? Should DeMuth have revealed the identities of his research subjects? Why or why not?
5. Did Humphreys conduct ethical research? Use information on informed consent, protection of identities, and professional codes of conduct to explain why or why not.

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Part II: Research Design

Research questions

Research methodologies

Transforming questions into measurable concepts

Sampling

Chapter 4

Research Questions

Chapter 4 objectives

1. Distinguish between topics and research questions.
2. Identify sources for transforming topics into questions.
3. Explain the role of literature reviews in the process of creating research questions.
4. Identify four features of a good research question.
5. Describe some of the feasibility concerns associated with research plans.

This chapter begins discussion of how to design a research project. Even if you have no plans to create your own project, learning about the best practices for research design will help you evaluate the questions, methods, and findings of other scientists' projects. Throughout this chapter, we'll imagine that you, the reader, are a social scientist trying to start your own project.

As discussed in previous chapters, research projects usually grow out of a question or area of interest. Do you like watching movies? Do you wonder what you and your peers might do with your degrees once you've finished college? Do you wonder how many people on your campus have been arrested, how many have been the victims of crime, or how many know that people of color are disproportionately represented in the criminal justice system? Have you ever felt that you were treated differently at work because of your gender or that the police stopped you because of your race or ethnicity? If you answered yes to any of these questions, then you may have just the sort of intellectual curiosity that social scientists use as the basis for their research projects.

While questions or observations about the world around you are an important starting point for developing social science research projects, topics in themselves need to be turned into questions that can be answered through scientific research. This chapter focuses on how to develop and evaluate empirical research questions based on four features of a good research question. We'll also discuss the importance of assessing feasibility and the relationship between a research question and previously published work on the chosen topic.

Topics

In research, a **topic** is an area of interest or a subject that the researcher might be interested in learning more about. Topics often come from some observation or question that arises from researchers' own lives. For example, as an undergraduate, I took a sociology class on drugs in U.S. society. I found out that I was interested in knowing more about how people thought about drugs. Whether it's thinking about a question you've had for some time, identifying a subject related to a course you've taken, or looking at patterns in your everyday life, you can probably identify a topic that you might be interested in studying.

A topic is not yet a research question. Before turning the topic into a researchable question, you should examine your own thoughts and feelings about the topic. While many researchers probably skip this step, examining your own relationship to the topic can help identify biases and other issues that might make it more difficult to study the topic. Start by asking yourself how you feel about your topic. Do you believe your perspective on the topic is the only valid one? Perhaps yours isn't the only perspective, but do you believe it is the wisest or most practical one? How do you feel about other perspectives on this topic? If you feel so strongly that certain findings would upset you, you would design a project to get only the answer you believe to be the best one, or you might feel compelled to cover up findings that you don't like, then you need to choose a different topic.

Of course, just because you feel strongly about a topic does not mean that you should not study it. Sometimes the best topics to research are those about which you do feel strongly. What better way to stay motivated than to study something that you care about? Although you may have strong opinions about your topic, you might also feel okay about having those ideas challenged. In fact, studying a topic that is relevant to your own life can be very rewarding as you learn new perspectives that might never have occurred to you before collecting data on the topic.

Whether or not you feel strongly about your topic, you will also want to consider what you already know about it. We discussed the strengths and weaknesses associated with different sources of knowledge in Chapter 1, and we'll talk about other sources of knowledge such as prior research later in this chapter. For now, take some time to think about what you know about your topic from all possible sources. Thinking about what you already know helps identify any biases you may have while also helping to frame a question about your topic.

Research questions

Transforming a topic into a research question takes a lot of patience, especially if it's your first time conducting a research project. Whereas a topic is an area or subject of interest, a **research question** is a question that can be answered using scientific knowledge. Sometimes, you might develop a research question based on what other researchers have already found about a topic. Other times, you might rely on what you already know about a topic to form a research question (but, as mentioned in Chapter 2, researchers must be careful to examine how they know what they know about a topic before proceeding too far with a research project). Social scientific theories can also guide the process of transforming a topic into a research question.

My research on public opinion of the police provides an example of how a researcher might go about transforming a topic into a research question. As a criminal justice professor, I'm very interested in developing scientific knowledge about the relationship between communities and the police. This topic provides a broad range of possible research questions. When the police department in the city in which my university is located wanted to learn more about public opinion on the police, I agreed to work with them and some of our students to research this topic. I already knew quite a bit about the topic from teaching classes on policing, studying criminological theories, and reading what other researchers had written about police-community relations. I also knew from media reports that relationships between the police and communities could be different based on the demographics of communities and how police officers and departments went about their daily work. Using information from these sources and working with the police chief, I developed a research question: How does public opinion about the police differ between neighborhoods with demographic characteristics? This question transformed the broad topic of police-community relations into a narrower question that we could answer using scientific research methods.

This example makes it sound easy to narrow a topic into a research question, but in practice it can take researchers months or even years to figure out what research question they're trying to answer. Some researchers start exploring a topic, come up with an idea for how they might want to investigate the topic, and only then do they begin to understand their research question. This happened to me as I worked on the research for what would become my first book. I started with an interested area (moral panics), narrowed it a bit (societal responses to sex offenders), started gathering media reports and observing community meetings related to my topic, began to talk to people about my data, and then started to draft and refine a research question (how

and why do communities respond differently to sexually violent predators in their neighborhoods?). This process took a few years. All of this is to say that moving from topic to research question sometimes requires immersing yourself in a topic until a research question begins to form.

Literature reviews

Library research is an important step as a researcher transforms their topic into a research question, refines that question, and begins to form project ideas. A **literature review** entails searching for and synthesizing academic journal articles and books that have been published on your topic. Researchers conduct literature reviews at many points during the research process.

One of the drawbacks (or joys, depending on your perspective) of being a researcher in the 21st century is that we can do much of our work without ever leaving our comfortable spaces. This is certainly true of familiarizing yourself with the literature. Most libraries offer incredible online search options, including access to Criminal Justice Abstracts, a database that summarizes published articles in many criminal justice journals. You can learn more from your professor or librarian about how to access Criminal Justice Abstracts from your particular campus library. Once you've done so, use a keyword search to find a few articles that cover topics similar to yours. At this stage, simply reading an article's title and abstract (the short paragraph at the top of every article) will give you an idea about how other researchers have framed questions about topics you're interested in. Hopefully, this will give you some ideas about how to phrase your research question.

Beyond searching the online resources, you can also visit your library, scan the shelves, and look at the most recent issues of journals on the library shelves. Walk through the social science stacks and peruse the books published about your topic. Introduce yourself to the reference librarian who may also be

able to recommend other databases that will introduce you to published social scientific research on your topic.

At this stage, you may begin creating a database of journal articles and books related to your topic. For those that seem more pertinent, you may add information about their research questions, methods, and findings. Free bibliographic software such as Zotero or spreadsheet software can help you organize your sources. Regardless of how you organize the previous work you find on your topic, examining what previous studies have found in relation to your topic and research question can help sharpen your specific research question and ideas for how to answer it while also helping you learn what sorts of questions other researchers have asked about your topic.

Once you have perused the library resources available to you, you're ready to draft, refine, and evaluate your research question.

Evaluating your research question

As a researcher, once you've drafted a research question, you must evaluate the strength of the research question before moving on with your research project. Failure to do so could result in a lot of wasted time and money if you later determine that your research methods do not match your research question, or that your research plan won't help you answer your actual research question. So, what makes a good research question? This section discusses four questions to consider when evaluating the strength of a research question.

1. **Is it a question?**

It may seem obvious that a research question must be a question, but when working with topics many students forget to develop an actual question or set of questions from their topic. For example, here's an exchange a professor might have with a student trying to develop a research question.

Professor: "What do you think you'll study for your research project?"

Student: "My research question is the death penalty."

Professor: "Okay, so your topic is the death penalty. What about the death penalty are you interested in studying?"

Student: "I'm interested in students' opinions about the death penalty."

Professor: "Can you phrase that as a question?"

Student (thinks for a few minutes): "What do students think about the death penalty?"

Professor: "Yes! Now your question is a question."

This student started with a topic (the death penalty), added a little bit of detail, and then transformed that information into a question. If you're trying to develop your own research question and you get stuck, you might ask yourself what about your topic you're interested in knowing more about. That can help you start turning your topic into a question.

2. Is it clearly focused?

A good research question focuses on a particular aspect of the topic that the researcher is trying to understand. Our imaginary student in the dialogue above has framed their question as a question, but the question could still use some refining. Focusing a research question often involves narrowing the question so that it centers on some question about the relationship between two or more variables. Here's how the professor in our imaginary dialogue might help the student focus their research question.

Professor: "Now that you have a question, let's narrow it down. Why is it important to know what students think about the death penalty?"

Student: "Well, the death penalty is a controversial topic. Some people think it should be legal while others don't. So, we should know what people think about it."

Professor: "Okay, so you're interested in people's opinions about the legality of the death penalty. But why students?"

Student (sighs at the professor's incessant questions): "College students are better educated than some people, so maybe their opinions on the death penalty are different. Plus, they might know more about it than other people."

Professor: "Ah, now we're getting somewhere. It sounds like you want to know what college students who know about the death penalty think about whether it should be legal or not."

Student: "Yeah, so what about this question: How do criminal justice students' opinions on whether the death penalty should be legal compare to other students' opinions on the subject?"

Professor: "You've got it! That's much more focused than your original question."

In this continuation of the dialogue, the student has refined their question from a broad question (What do students think about the death penalty) to a research question that requires examining the relationship between two variables: college major and opinions about the death penalty. The student has also narrowed the focus from "the death penalty" to "the legality of the death penalty." Both of these changes focus the question toward a feasible and specific research project.

3. Can it be answered without a simple yes or no answer?

Questions that can be answered with a simple "yes" or "no" do not make for good research questions in part because they limit the insights that a research project might provide on a given topic. For example, our imaginary

student could ask, “Do criminal justice majors support the death penalty?” After they discovered their yes or no answer, they would have nothing more to say on the topic. Instead, asking, “How do criminal justice students’ opinions on the legality of the death penalty differ from other students’ opinions?” creates a much more interesting question that allows more nuanced insights to emerge about students’ opinions on the death penalty than the simple yes or no question.

4. **Does it have more than one plausible answer?**

In addition to avoiding yes or no questions, a high-quality research question will have more than one plausible answer. For example, our imaginary student may have a specific interest in the relationship between college major and opinions on the death penalty, but they also might know that other factors might influence perceptions of the death penalty. Perhaps their more politically conservative family members seem more supportive of the death penalty than their more liberal friends. Thinking through the possible relationships between college major, politics, and opinions on the death penalty might lead this student to realize that there are many plausible answers to their question about how college major relates to perceptions of the death penalty. Because students don’t choose their major in a vacuum, the researcher needs to account for other characteristics that work with college major to shape people’s opinions.

In sum, a good research question generally has the following features:

1. It is written in the form of a question.
2. It is clearly focused.
3. It is not a yes/no question.
4. It has more than one plausible answer.

Next steps

Transforming topics into questions often leads researchers to have a few potential research questions that they want to begin studying right away. However, even if they've identified the most brilliant research question ever, they still need to plan their study, which we'll discuss more in the next chapters. For now, we'll focus on assessing the feasibility of preliminary ideas about how to go about answering a research question.

We learned about ethics and the limits posed by institutional review boards (IRBs) and disciplinary codes in Chapter 3. Beyond ethics, researchers must consider some other practical matters before beginning a research project. In research, **feasibility** refers to the chances that a study can actually be conducted, with particular attention to accessing the target population and securing adequate resources to conduct the study.

First, researchers must consider their ability to **access** the populations they want to study. For example, let's say you're interested in studying the day-to-day experiences of maximum-security prisoners. This sounds fascinating, but unless you plan to commit a crime that lands you in a maximum-security prison, it may be nearly impossible to gain access to this population. Similar issues of feasibility arise when researchers want to study groups involved in crime, law enforcement organizations, courtroom actors, and corrections officials. While many researchers have studied these groups, it can take months or even years to connect with people in these populations.

Second, research requires **resources** such as time and money. In terms of time, a researcher's time frame for conducting research may constrain how they conduct their study. The time a researcher has to complete their work may depend on many factors. Professionally, a project may need to be completed by a certain date to count for job performance reviews or promotion. As a student,

you may be required to complete your project by the end of the term in which your course ends. Employees or interns in political settings may need to conduct research within even shorter spans of time to inform policymakers' decisions on important social issues. All of these time constraints shape what sort of research a person can conduct.

Research also requires money. Your ideal research topic might require you to live on a chartered sailboat in the Bahamas for a few years, but unless you have unlimited funding, it will be difficult to make that happen. Similarly, if you want to study differences in lawyers' interactions with clients in the United States and the United Kingdom, you would need money to pay for your travel, housing, food, and other research expenses while overseas. Researchers conducting survey research have to consider the costs associated with mailing surveys (including postage as well as the time needed to print surveys, address envelopes, and delivering them to the post office) or, in the case of online surveys, the cost of subscriptions to high-quality surveying platforms. Interviewing people face to face may require that you offer your research participants a cup of coffee or glass of lemonade while you speak with them. And someone has to pay for the drinks.

In addition to the costs mentioned above, research that requires recruiting participants must factor in the time and money for creating and distributing flyers, emails, and other materials designed to encourage people to participate in the project. Because of these kinds of resource needs, researchers often secure funding in the form of grants from their universities and/or states or the federal government.

In sum, feasibility is always a factor when deciding what, where, when, and how to conduct research. Issues of accessing target populations and the availability of resources such as time and money play a major part in assessing

the likelihood of being able to conduct a study in the way the researcher envisions. If a researcher reflects upon their research question and determines it unlikely that they would be able to conduct a study to answer that question, they can then return to their initial topic of interest, review the literature once again, and draft a new research question that may lead to a more feasible study.

Summary

- Topics are broad areas of interest that lead to more specific questions (i.e., research questions) that can be answered using scientific knowledge.
- Personal knowledge, feelings, and biases can guide the preliminary work of transforming a topic into a research question. Previous studies on the topic can help narrow the focus and refine the research question.
- Literature reviews involve searching for academic publications on your topic of interest. They can help researchers get ideas on how to phrase their research questions and potential methods for answering their questions.
- Good research questions are phrased as a question and clearly focused, can be answered with more than a simple yes or no, and have multiple plausible answers.
- Research questions must allow for feasible research projects that match the realities of challenges in accessing populations of interest as well as resource limitations such as a lack of time and/or money.

Key terms

access	literature review	resources
feasibility	research question	topic

Discussion questions

1. Consider a topic you're interested in learning more about. What do you already know about that topic? What feelings or biases might impact your ability to study the topic? What questions do you have about the topic?
2. Use the steps described in the "Literature reviews" section of this chapter to find three empirical articles or books that may help you narrow your topic into a research question. For each source, note the bibliographic information as well as the research question, method, and main findings. Draft a research question related to your topic.
3. Draft a research question related to a topic you're interested in. Evaluate your question based on the four features of a good research question, and then revise your question to include all four elements.
4. Based on a research question that you've developed, what might be some feasibility concerns related to a potential project you'd conduct to answer your research question? Considering access and resource concerns, would you need to revise your research question? Why or why not?

Chapter 5

Research Approaches and Goals

Now that you've figured out what to study, you need to figure out how to study it. Reading previously published studies and forming a research question are both steps in the process of designing a research project. This chapter continues the discussion of research design by examining the major components of a research project, strategies for conducting literature reviews, and the decisions researchers must make when figuring out how to answer their research questions, including decisions related to how to approach a research project and the goals of the project.

Chapter 5 objectives

1. Identify nine major components of research design.
2. Describe literature review strategies.
3. Describe differences between inductive and deductive research approaches.
4. Distinguish between exploratory, descriptive, and explanatory research.

Components of a research project

Decisions about the various components of a research project do not always occur in sequential order. For example, while researchers review previously published work as they form research questions, they also conduct literature reviews after drafting their questions to become more familiar with how other researchers have investigated their topic. Researchers must also think about potential ethical concerns before zeroing in on a specific research question and after they've formed their question. Literature reviews, research questions, and ethics are all components of research projects along with

research strategies and goals, conceptualization and operationalization, sampling, and data collection methods. Figure 5.1 illustrates how these nine major components of a research project fit together. Rather than steps in a linear process, the concentric circles illustrate that each step occurs in the context of other steps. For example, decisions about sampling occur in the context of broader ethical considerations as well as the research question and previous research on the topic.

Figure 5.1 Components of a Research Project

The rest of this textbook focuses on the major components of a research project not yet covered in previous chapters. Chapter 3 discussed ethical concerns and decisions that researchers must make as they design and conduct their research. Chapter 4 detailed the process of developing and evaluating research questions, and it provided a brief overview of how to conduct a literature review to find previous studies on your topic. The next section in this chapter provides more detail on how to conduct literature reviews. Then, we'll focus on research approaches and end with a brief overview of two kinds of data

that researchers collect. Chapter 6 covers conceptualization and operationalization, and chapter 7 focuses on sampling. Finally, chapters 8 through 11 detail some common methods for collecting and analyzing data.

Literature reviews (again)

Chapter 4 presented an overview of how to review previously published work on a particular topic to help form a research question. Once researchers have formed a research question, they then return to the literature to conduct a more comprehensive review of what other researchers have already done. At this stage, the purpose of a literature review is three-fold: (1) to survey the current state of knowledge in the area of inquiry, (2) to identify key authors, articles, theories, and findings in that area, and (3) to identify gaps in knowledge in that research area. A well-conducted literature review helps the researcher determine whether prior studies have already answered the initial research (which would obviate the need to study them again), whether there are newer or more interesting research questions available, and whether the original research questions should be modified or changed in light of findings of the literature review. The review can also provide some intuitions of or potential answers to the questions of interest and/or help identify methodologies that previous researchers have used to address similar questions. To achieve these three goals, researchers must conduct a reasonably complete search that includes studies published in many different journals and years with a variety methods. Chapter 4 provides information on how to find and access databases for these kinds of searches.

Search strategies

What happens when you search yields few or no results? Or the results of your search aren't relevant to your topic or research question? Chances are that you probably need to modify your search terms. For example, imagine you're

working on a research project about sexism in policing. A search on Criminal Justice Abstracts using the keywords "sexism in policing" returns four results. Of the four results, only one is an article even somewhat related to your topic, and it's about representations of women in police recruiting videos. Does that mean that only one article has been published on your topic? Definitely not. Instead, you'll need to experiment with different search terms. Since your search yielded so few results, you decide to broaden your search to "gender and policing." This search yields over 500 results. At first, this may seem like a lot of articles to sort through; however, a closer look usually indicates that only a couple of the articles on each page will be directly relevant to your research question.

Other strategies for finding articles include narrowing your search terms, locating articles on a similar population or broader topic of interest, and using articles you find to identify other articles. For example, let's say you started your sexism in policing project by searching for "policing." That search would yield thousands of results, indicating that your search term needs to be more focused on what about policing you're interested in studying. The "gender and policing" search term is related to your broader topic of interest and you may find articles within those results that relate more specifically to sexism in policing. Finally, once you find a few directly relevant articles, you can use the "cited by" feature of most databases to find articles published more recently that cite the articles you've found. Some of these may not be related to your research question, but you'll likely find a few that do. You can also use the bibliography of an article to identify relevant studies published prior to the article you've found.

Reviewing strategies

Once you've identified a set of articles to review, revisit your research question to remind yourself of your specific research focus. Keeping in mind your particular research interest while reviewing the literature gives you the chance to think about how the theories and findings covered in prior studies might or

might not apply to your particular point of focus. For example, theories on what motivates women to get involved in policing might tell you something about the likely reasons the police officers you plan to study got involved in the profession. At the same time, those theories might not cover all the particulars of why women stay in policing or the sexism they experience once on the job. Thinking about the different theories then gives you the opportunity to focus your research plans and even develop a few hypotheses about what you might find.

Researchers often develop an **annotated bibliography** as they begin to familiarize themselves with prior research on their topic. An annotated bibliography is a list of relevant sources presented in alphabetical order, using the citation format of the researcher's profession and including underneath each source a brief summary of the point of focus, theoretical argument, research methods, and major findings. Some annotated bibliographies also contain a critique or evaluation of each source.

Another strategy for reviewing the literature involves a researcher positioning their work within the context of prior scholarly work in the area. This type of literature review addresses the following questions: What sorts of questions have other scholars asked about this topic? What do we already know about this topic? What questions remain? As the researchers answer these questions, they synthesize what they find in the literature, possibly organizing prior studies around themes relevant to their particular research focus.

The preceding discussion assumes that we all know how to read scholarly literature. Reading scholarly articles can be a bit more challenging than reading a textbook. Luckily, a few tips can help you navigate these articles more easily. First, scholarly journal articles typically contain many of the same sections. The **abstract** (the short paragraph at the beginning of an article that summarizes the author's research question, methods used to answer the question, and key

findings) may be the most important and easiest to spot sections of a journal article. Reading the abstract provides a framework for understanding the research study and findings, which will helps determine the relevance of the article to your research question. After the abstract, most journal articles contain the following sections (although exact section names are likely to vary): introduction, literature review, methodology, findings, discussion/conclusion, and a list of references cited. And here's the big secret: you do not have to read every word of every article you find! While you should get into the habit of familiarizing yourself with articles you wish to cite in their entirety, there are strategic ways to read journal articles that can make them a little easier to digest. Once you have read the abstract and determined that this is an article you'd like to read in full, read through the discussion section at the end of the article. Reading an article's discussion section helps you understand what the author views as the study's major findings and how the author perceives those findings to relate to other research. Then, if you want more information about the study's research design, methods, or results, you can locate that information in the other sections of the article.

Approaches to research

Scientific inquiry may take one of two forms: inductive or deductive. In an **inductive** approach to research, the goal is to infer theoretical concepts and patterns from observed data. Figure 5.2 (below) illustrates the process of research using an inductive approach. As illustrated in the figure, a researcher begins by collecting data relevant to their topic of interest. After collecting a substantial amount of data, the researcher then takes a break from data collection and begins looking for patterns in the data to develop a theory that could explain those patterns. Thus, an inductive approach to research involves starting with a set of systematically collected observations (the data) and then moving from those observations to a more general set of propositions about the

experiences being studied. In other words, this kind of approach moves from data to theory, or from the specific to the general. Because of their focus on developing theory, inductive approaches are also called **theory-building** approaches to research.

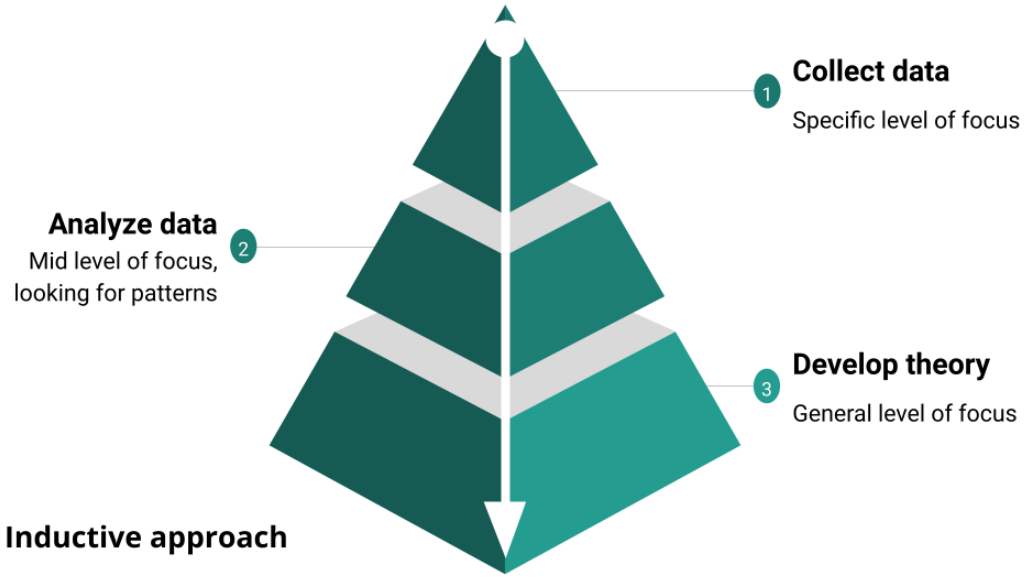

Figure 5.2 Inductive approach to research

A deductive approach to research is the one that people typically associate with scientific investigation. In a **deductive** approach, the goal is to use empirical data to test concepts and patterns inferred in theories. The researcher studies what others have done, reads existing theories of whatever phenomenon he or she is studying, and then tests hypotheses that emerge from those theories by collecting and analyzing data. Essentially, researchers move from a general level of focus (theories) to a specific level of focus (hypothesis testing with specific data). Figure 5.3 (below) illustrates a deductive approach to research. As illustrated in the figure, a researcher starts with developing **hypotheses**, or testable statements that propose an explanation for the phenomenon under study, from theories identified in previous literature that the researcher thinks

may help answer the research question. Then, the researcher collects data and analyzes that data to test their hypotheses. Thus, deductive approaches can also be called **theory-testing** approaches to research. Note here that the goal of theory-testing is not only to test a theory, but possibly to refine, improve, and extend it.

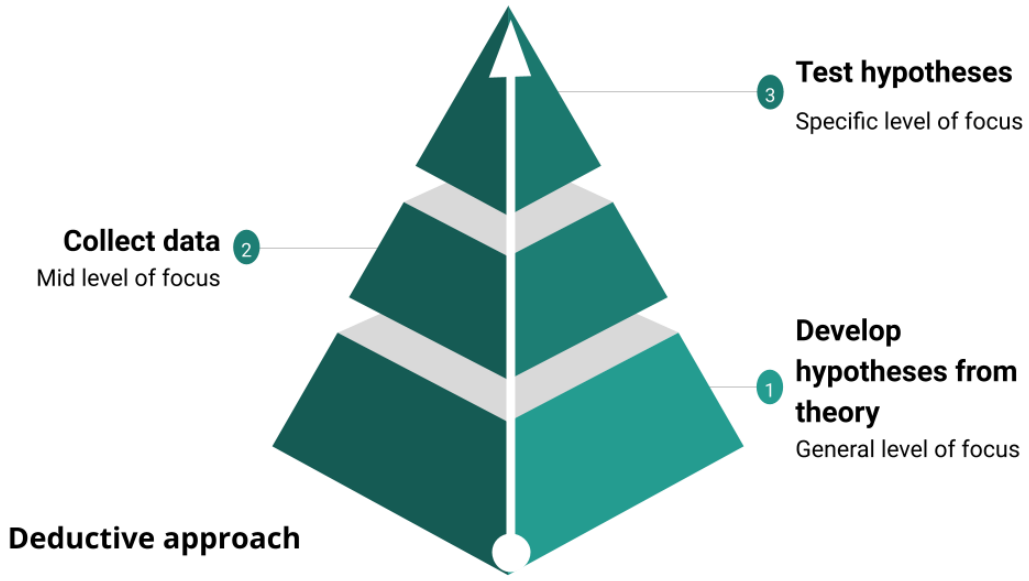

Figure 5.3 Deductive approach to research

Inductive and deductive approaches to research may seem quite different, but both theory building (inductive research) and theory testing (deductive research) are critical for the advancement of scientific knowledge. In fact, the two approaches can be rather complementary. For example, researchers may plan for their research to include both inductive and deductive components, or they might begin a study with only an inductive or deductive approach, but then discover along the way that they need the other approach help further explain their findings.

Rather than opposing strategies for conducting research, it might help to think about inductive and deductive research as two halves of a research cycle that constantly moves between theory and observations. Elegant theories aren't helpful if they don't match reality. Likewise, mountains of data are useless until they can contribute to the construction to meaningful theories. Rather than viewing these two approaches to research as wholly separate, imagine each iteration between theory and data contributing to stronger theories and explanations of the phenomenon of interest.

Research goals

One of the first things researchers think about when designing a research project is what they want to accomplish by conducting the research. What do they hope to be able to say about their topic? Do they hope to gain a deep understanding of whatever phenomenon they're studying, or would they rather have a broad, but perhaps shallower, understanding? Do they want policymakers or others to use their research findings to shape social life, or is the project more about exploring curiosities? The answers to these questions help researchers to decide whether to design their studies as exploratory, descriptive, or explanatory research projects.

Exploration

Researchers conducting **exploratory research** are often starting in new areas of inquiry where the goals of the research include: (1) scoping out the magnitude or extent of a particular phenomenon, problem, or behavior, (2) generating some initial ideas or hunches about that phenomenon, or (3) testing the feasibility of undertaking a more extensive study regarding that phenomenon. For instance, when I began researching community responses to placements of people with a history of sexual offending in communities, very few previous studies had examined my problem of interest. At first, I conducted

exploratory research to better understand what the meetings were like, community members' major concerns about the placements, and how they presented those concerns in public meetings. I read news reports about previous community meetings, visited some meetings, and talked with community members. These research activities helped me understand the problem and generate some initial ideas about how different communities responded to proposed placements. I also gained some insights into how I might structure a larger study on the topic.

Description

Conducting **descriptive research** means that a researcher wants to describe or define a particular phenomenon through systematic observation of a phenomenon of interest. These observations must be based on the scientific method so that they are more reliable than casual observations by untrained people. Examples of descriptive research include tabulations of demographic statistics by the United States Census Bureau or crime rates by the FBI. Both sources use the same or similar systematic data collection methods over time.

Descriptive research often focuses on questions related to "what, where, and when." For example, when our local police department wanted to know what residents of the city thought of them, we conducted a door-to-door survey in which we asked about all sorts of topics related to police and policing. The goal was to provide city administration with an overview of how people in our city viewed police work and interactions. I presented the results to the city council by showing charts with the percentages of people who had answered in each question category. Other descriptive research may include chronicling gang activities among adolescent youth in urban populations, police-community interactions, and the role of technologies such as Twitter and instant messaging in the spread of ideas about the criminal justice system. Each of these examples

relies on systematically collecting data to describe social phenomenon by answering "what, where, and when" questions.

Explanation

While descriptive research examines the what, where, and when of a phenomenon, explanatory research seeks to answer "why" and "how" types of questions. **Explanatory research** tries to identify the causes and effects of the phenomenon being studied. In other words, this type of research attempts to "connect the dots" in research by identifying causal factors and outcomes of the target phenomenon. For example, when the results of the policing study indicated differences in opinions between people throughout the city, we moved into more explanatory research to try to figure out why people's perceptions of the police were different and how those differences occurred. We found that the type of neighborhood and respondents' racial and ethnic groups impacted their perceptions of the police. These findings helped explain some of the variation in opinions of police across people in our study. Other examples of explanatory research include understanding the reasons behind sexual violence in order to suggest strategies for solving the problem, figuring out why Black people are disproportionately incarcerated, and trying to explain the factors that impact prosecutors' charging decisions.

Summary

- Nine major components of research design include ethics, previous studies, research question, research strategies and goals, conceptualization and operationalization, sample, and data collection methods.
- Literature reviews require strategic searching for and reviewing previous studies. Searching strategies include broadening or narrowing your

search terms, finding articles about a similar population or broader topic than your research question, and using articles you've found to identify other articles. Reviewing articles may involve writing an annotated bibliography or writing a literature review, but in either case, you should learn to mine scholarly articles for the most important information rather than read them from start to finish.

- Inductive approaches to research take a theory-building approach of starting with observations and then analyzing up to build broader theories. Deductive approaches take a theory-testing approach of starting with theoretical propositions and then analyzing down to test those propositions using empirical data.
- Exploratory, descriptive, and explanatory research have different goals. Exploratory research aims to learn more about a relatively new area of inquiry. Descriptive research aims to describe a particular phenomenon. Explanatory research aims to answer causal questions about why and how social phenomenon occur.

Key terms

abstract	exploratory research	positivist methods
annotated bibliography	hypotheses	qualitative methods
deductive	inductive	quantitative methods
descriptive research	interpretive methods	theory-building
explanatory research	mixed-mode designs	theory-testing

Discussion questions

1. How would you go about reviewing the literature in order to write an annotated bibliography related to a topic you might be interested in researching? Identify the steps you would take and how you might organize your results.
2. What are some of the strengths and weaknesses of inductive and deductive designs?
3. Develop three research questions: one each for an exploratory, descriptive, and explanatory research project. Explain how each research question fits with the relevant research goal.

Chapter 6

Research Methodologies

Chapter 6 objectives

1. Explain the differences between quantitative and qualitative methods.
2. Identify and describe common qualitative and quantitative data collection techniques.
3. Describe considerations necessary for choosing a research method.

Chapter 5 discussed inductive and deductive approaches to research and three goals that researchers might have in conducting their research. In addition to detailing a researcher's approach and overall goals, researchers must decide how they will collect their data. Luckily, there are many commonly used and accepted methods for data collection to choose from. The specific method a researcher chooses will depend on the research question, approach, and goals. In this chapter, we'll discuss the difference between qualitative and quantitative methods, some commonly used data collection techniques for each of those methods, and how to choose a particular method.

Qualitative and quantitative methods

Broadly speaking, data collection methods can be grouped into two categories: positivist and interpretive. **Positivist methods** such as laboratory experiments and survey research are usually aimed at theory-testing. Positivist methods employ a deductive approach to research, starting with a theory and testing theoretical postulates using empirical data. In contrast, **interpretive methods** such as participant observation and ethnography employ an inductive, theory-building approach that starts with data and tries to derive a theory about the phenomenon of interest from the observed data.

These methods are often incorrectly equated with quantitative and qualitative methods. Quantitative and qualitative methods refer to the type of data being collected and strategies for analysis rather than the approach taken to collect those data. **Qualitative methods** involve data collection strategies that yield results such as words or pictures. Some of the most common qualitative methods in social science include field research, intensive interviews, and focus groups. After data collection, these methods require analysis strategies such as thematic coding, narrative analysis, and content analysis. Interpretive research relies heavily on qualitative data, but can sometimes include quantitative data as well.

Quantitative methods, on the other hand, result in data that can be represented by and condensed into numbers. Survey research and experiments are probably the most common quantitative methods in social science, but methods such as content analysis and interviewing can also be conducted in a way that yields quantitative data. After data collection, quantitative methods require statistical analysis strategies. Positivist research predominantly uses quantitative data, but it can also use qualitative data.

Sometimes qualitative and quantitative methods are presented or discussed in a way that suggests they are somehow in opposition to one another. Researchers may prefer one method over another, either because their own approaches to research or their research questions are better suited to one particular approach or because they happened to have been trained in one specific method. While qualitative methods aim to gain an in-depth understanding of a relatively small number of cases, quantitative methods offer less depth but more breadth because they typically focus on a much larger number of cases. Sometimes, joint use of qualitative and quantitative data may help generate unique insight into a complex social phenomenon and hence, **mixed-mode designs** that combine qualitative and quantitative data are often

highly desirable. This textbook operates from the perspective of qualitative and quantitative methods as complementary rather than competing. These two methodological approaches certainly differ, but they simply have different goals, strengths, and weaknesses. We'll explore the goals, strengths, and weaknesses of both approaches in more depth in later chapters.

Common data collection techniques

There are a wide variety of methods for gathering qualitative and/or quantitative data, and a single textbook could never cover every method. Instead, this section introduces you to a few methods for collecting both types of data. Subsequent chapters will cover these methods in more detail, including discussing their strengths and weaknesses.

Qualitative methods

Focus groups involve bringing together a small group of people (typically 6 to 10 people) to discuss a phenomenon of interest for an hour or two. A trained facilitator (sometimes, the researcher) leads and moderates the discussion. The facilitator sets the agenda, poses questions to spark discussion, ensures that all participants provide their thoughts and experiences, and attempts to build a holistic understanding of the topic of interest through the discussion. Researchers often use focus groups for more exploratory and inductive research projects. Unlike one-on-one interviews, the focus group setting provides an opportunity for researchers to learn more about how people talk with others about a topic, create shared understandings of the topic, and where and how people disagree on the issues at hand. For the most part, focus groups yield qualitative data such as audio recordings and notes researchers take during the discussion. They may also yield some basic quantitative data such as demographic information on participants, but these are generally used to

describe the participants rather than to draw conclusions about the topic of interest.

Field research is another method of collecting qualitative data. Unlike the facilitated settings of focus groups, field research aims to understand, observe, and interact with people in their natural settings. Sometimes researchers use the terms ethnography or participant observation to refer to field research. **Ethnography** is a type of field research inspired by anthropology that emphasizes studying social phenomena within the context of culture. The researcher deeply immerses themselves in a particular community over an extended period of time (8 months to many years) during which they engage in, observe, and record the daily lives of people in the community. By contrast, **participant observation** is a type of field research in which the researcher studies a phenomenon of interest by observing people in an area in which the phenomenon is most likely to occur. As we'll discuss in chapter 10, participant observation involves a range of participating and observing.

Social scientists have used field research for both inductive and deductive projects as well as for all three research approaches (descriptive, exploratory, and explanatory research). Field research yields qualitative data such as field notes, audio recordings of interviews, and official and cultural documents.

Qualitative and quantitative methods

Depending on how they're used and the goals of the study, some research methods yield both qualitative and quantitative data. For example, **interviews** involve two or more people exchanging information through a series of questions and answers. The researcher designs questions to elicit information from interview participants on a specific topic or set of topics. Traditionally, interviews have involved an in-person meeting between the interviewer and an interviewee. But as we'll discuss later in this textbook, interviews need not be

limited to two people, nor must they occur in person. Interviews operate like a conversation in which the researcher asks questions, follows up with more questions to clarify or elicit more detail on the topic, and records personal observations and comments in addition to participants' answers. As interviews are often involved in field research, they too can be useful for projects with all sorts of research approaches and goals. Further, depending on the interview format, interviews may yield qualitative data such as audio recordings, researcher observations, and responses to open-ended questions, as well as quantitative data such as answers that participants choose from a list of possible options.

Another technique that can involve both qualitative and quantitative data is called **secondary data analysis**. Secondary data analysis is when a researcher analyzes data that has been previously collected. These data may include information from government agencies such as crime statistics from the Federal Bureau of Investigation or transcripts from federal court proceedings, data collected by other researchers pursuing similar or parallel research questions, or publicly available third-party data such as social media trends or newspaper reports on a particular topic. While other entities have already collected the data used in secondary data analysis, researchers can approach and analyze the data in ways similar to those they'd use if they had collected the data themselves. Because of the variety of secondary data sources available, this research method can be used for all research approaches and goals.

Quantitative methods

Perhaps one of the most common methods for collecting quantitative data is through survey research. **Survey research** is a quantitative method whereby a researcher poses some set of predetermined questions to an entire group, or sample, of individuals. Survey research is especially useful when a researcher aims to describe or explain features of a very large group or groups.

In **cross-sectional surveys**, researchers use a single questionnaire to examine the relationship between two or more variables. In **longitudinal surveys**, researchers use two or more surveys administered at different times to measure changes in answers over time. For example, a researcher interested in the impacts of age on criminal behavior might survey people when they are teenagers and then again when they are in their twenties, thirties, and forties. Researchers most often use surveys when their study has explanatory goals and requires a deductive approach. They may also use surveys to quickly gain information about their population of interest as they prepare for a more focused, in-depth study using qualitative methods. Depending on how the survey is administered, survey research yields either stacks of paper questionnaires with answers that must then be entered into a computer or large electronic files of information. In either case, researchers transform the answers into numbers and then import those numbers into statistical software for analysis.

Unlike surveys, **experiments** test cause-effect relationships (hypotheses) in a tightly controlled setting. Students often use the term "experiment" to describe all kinds of empirical research projects, but in social scientific research, the term has a unique meaning and should not be used to describe all research methodologies. Researchers can choose from several kinds of experimental designs. In general, designs considered to be "**true experiments**" contain three key features: independent and dependent variables, pre-testing and post-testing, and randomly assigned experimental and control groups. In the **classic experiment**, the researcher randomly assigns participants to two groups: an experimental group that is exposed to a stimulus and a control group that is not exposed to a stimulus. The researcher measures participants before and after they're exposed to the stimulus to assess the effects of the stimulus on the phenomenon under study. If a researcher does not randomly assign participants

to experimental and control groups, then the design becomes **quasi-experimental**.

Researchers can conduct experiments in an artificial or laboratory setting such as at a university (**laboratory experiments**) or in field settings such as in an organization where the phenomenon of interest is occurring (**field experiments**). For example, the Stanford Prison Experiment was a laboratory experiment because Zimbardo created a fake prison environment in which to examine his research questions. Had he decided to observe real inmates and guards in real prisons, then the experiment would have been a field experiment.

Experiments fit well with deductive, explanatory research approaches and goals. Pre- and post-tests tend to yield quantitative data through a survey design and/or through systematically coded observations that researchers then quantify and analyze using statistical software.

Choosing a research method

Given all the considerations that go into designing and choosing a research method, which one should you choose? Researchers tend to choose the research designs that they are most comfortable with because of their skills, training, and disciplinary norms; however, ideally, the choice should depend on the nature of the research phenomenon being studied and the research question, approach, and goals. In the preliminary phases of research, when the research problem is unclear, the researcher wants to scope out the nature and extent of a certain research problem, and/or no theories appear to explain the phenomenon of interest, a focus group, field research, or interviews may be ideal because of their usefulness for inductive approaches and exploratory and descriptive goals. If the researcher finds existing, competing theories and wants to test these theories or integrate them into a larger theory, methods such as

interviews, secondary data analysis, surveys, or experiments would be more appropriate because they fit well with deductive approaches and explanatory goals. Regardless of the specific research design chosen, researchers must consider the specific research question, their approach to the research process, and the goals of the research before choosing the method that fits best with their project.

Summary

- Qualitative methods involve collecting data that are represented as pictures and words and analyzed using coding strategies. Quantitative methods involve numerical data analyzed using statistics. Interpretivist research usually relies on qualitative data, and positivist methods usually rely on quantitative data.
- Common qualitative methods include focus groups and field research. Interviews and secondary data analysis can yield both qualitative and quantitative data. Common quantitative methods include survey research and experiments.
- Researchers should choose a research method based on their research question, approach, and goals. Often, the researcher's skills, training, and disciplinary norms influence the choice of a research method.

Key terms

Classic experiment	Field research	Longitudinal surveys
Cross-sectional surveys	Focus groups	Mixed-mode designs
Ethnography	Interpretive methods	Participant observation
Experiments	Interviews	Positivist methods
Field experiments	Laboratory experiments	Qualitative methods

Quantitative methods
Quasi-experimental
Secondary data analysis
Survey research
True experiments

Discussion questions

1. What are the major differences between qualitative and quantitative methods? Why do you think qualitative methods are more often associated with interpretivist research and quantitative methods with positivist research?
2. Which of the qualitative methods do you find most intriguing? Why? What about the quantitative methods or the methods that yield both types of data?
3. Consider a research question that you've developed. Use the information in the last section of this chapter to select a research method that would fit best with your research question. Why did you choose that method?

Chapter 7

Measurement

Chapter 7 objectives

1. Define conceptualization and explain its role in the measurement process.
2. Define operationalization and explain its role in the measurement process.
3. Identify three main criteria for establishing causality.
4. Distinguish between independent and dependent variables.

Once a researcher has identified a research question and chosen an appropriate research method, they must them determine how they will measure the social phenomena that is the focus of their research question. **Measurement** refers to the process of describing and ascribing meaning to key facts, concepts, or other phenomena under investigation. At its core, measurement is about defining one's terms in as clear and precise a way as possible. Some constructs in social science research, such as a person's age or the number of people in prison may be easy to measure. Other constructs such as creativity, prejudice, or alienation are considerably harder to measure. For these reasons, measurement in social science isn't quite as simple as using some predetermined or universally agreed-upon tool. But no matter the topic, researchers must always think carefully and deliberately about how to measure the central components of their research questions. This chapter focuses on two key processes involved in empirical measurement: conceptualization and operationalization.

How do social scientists measure?

Measurement occurs at multiple stages of a research project including planning, data collection, and sometimes even data analysis. A researcher begins the measurement process by describing the key ideas they hope to investigate,

usually stated in the research question. For instance, let's say our research question is: How do lawyers with different family backgrounds cope with the emotional demands of their job? Answering this question requires some idea about what coping means. We may come up with an idea about what coping means as we begin to think about what to look for (or observe) during data collection. Once we've collected data on coping, we also have to decide how to report on the topic. Perhaps, for example, there are different types or dimensions of coping, some of which lead to more successful emotional outcomes than others. The decisions we make about how to proceed and what to report will involve processes of measurement.

Measurement is a process in part because it occurs at multiple stages of conducting research. We could also think of measurement as a process because measurement in itself involves multiple stages such as identifying key terms, defining them, and figuring out how to observe them, and assessing whether our observations are any good. The next two sections cover two important steps in the measurement process: conceptualization and operationalization.

Conceptualization

A **concept** is the notion or image that we conjure up when we think of some cluster of related observations or ideas. For example, when you hear "family background," What do you think of? Perhaps you think of ideas associated with the concept of "socioeconomic status" (SES). When you hear that phrase, you might think of how much money a person makes, their wealth and assets, or even how they dress or behave. Of course, everyone conjures up somewhat different ideas or images when they hear the term "socioeconomic status," and we may struggle if we were asked to define exactly what the term meant. In fact, there are many possible ways to define the term. While some definitions may be more common or have more support than others, there isn't

one true, always-correct-in-all-settings definition. Definitions of SES may shift over time, from culture to culture, and even from individual to individual. Without understanding how a researcher has defined key concepts, it would be nearly impossible to understand the meaning of that researcher's findings and conclusions. Thus, the process of measurement includes defining concepts, which is also called conceptualization.

Conceptualization is the process of defining fuzzy concepts and their constituent components in concrete and precise terms. Going back to our example of the concept of "socioeconomic status," if someone buys a yacht, are they in a different socioeconomic status than a person who buys a fishing boat? If a person has retirement account, does that indicate their socioeconomic status? Does it matter how much they have in that account? What if they have multiple accounts? What about owning a company or having a GED or having enough money to work only part time? Are there different ways to be in the same socioeconomic statuses? At what point does a family move between statuses? Answering these kinds of questions is the key to clearly defining concepts because the answers help us understand what is included and excluded from the concept we're trying to measure.

Asking questions, brainstorming images, and playing around with possible definitions is a reasonable start to the conceptualization process. During this process, researchers also consult with previous research and theories to understand how other scholars have already defined the concepts in question. This doesn't necessarily mean researchers use pre-existing definitions, but understanding how concepts have been defined in the past give us ideas about how our conceptualizations compare with the predominant definitions in our field. Understanding prior definitions of key concepts also help us decide whether our research will challenge existing conceptualizations or rely on them for our own work.

The conceptualization process is all the more important because of the imprecision, vagueness, and ambiguity of many social science concepts. For instance, is "socioeconomic status" the same thing as "income" or "wealth"? Imagine a researcher proposes that, "Lawyers in higher socioeconomic statuses use less effective coping strategies to deal with the emotional demands of their job." The researcher cannot test this proposition unless they first conceptually separate socioeconomic statuses. For example, being in a higher SES might entail having a position of power in a society or a specific worldview of oneself or one's family as superior to others, both of which are distinct from being in a lower SES, which might entail working for others or defining oneself as "middle class." The point is that definitions of such concepts are not based on objective criterion, but rather on shared ("inter-subjective") understandings of what these ideas mean. Thus, researchers must specifically and clearly state how they will define their key concepts so that others can understand and assess the findings and implications of the research study. Given the preceding discussion, how would you define SES? Your answer is your conceptualization of SES.

Operationalization

Once a researcher has defined, or conceptualized, a concept, exactly how do they measure it? **Operationalization** refers to the process of explaining precisely how a concept will be measured. Operationalization works by identifying specific **indicators**, or empirical observations taken to represent the ideas that we are interested in studying. Social scientists tend to measure most concepts using multiple indicators. For instance, if an unobservable concept such as SES is defined as the level of family income, it can be operationalized using an indicator that asks respondents to report their annual family income. However, if a researcher defines SES as a combination of elements including income along with level of education, assets, and occupation, it would be measured with multiple questions that cover each of these elements. Researchers using field

research and other methodologies must also operationalize their concepts. For example, a researcher observing lawyers' courtroom interactions might develop indicators of SES such as clothing styles, mannerisms, or patterns of speech. No matter what methodology a researcher chooses, they must always operationalization their concepts during the measurement process.

The process of coming up with indicators must not be too arbitrary or casual. Researchers can avoid taking an overly casual approach to identifying indicators by turning to prior theoretical and empirical work in their area. Theories point toward relevant concepts and possible indicators; published empirical studies give some very specific examples of how others have defined the important concepts in an area and what sorts of indicators they have used. It might make sense to use the same indicators as other researchers have, or it might make sense to develop new indicators that improve upon previous ones. Either way, researchers must know how others before them have conceptualized and operationalized their concepts.

Putting it all together

Moving from identifying concepts to conceptualizing them and then operationalizing them is a matter of increasing specificity. A researcher begins with a general interest, identifies a few concepts that are essential for studying that interest, works to define those concepts, and then defines precisely how they will measure those concepts. The focus becomes narrower as the researcher moves from a general interest to operationalization.

Figure 7.1 illustrates what the process might look like as a researcher moves from a broad level of focus (a topic) to a narrower focus (operationalization) to decide what indicators to use in their study. The figure indicates that the researcher would start with the overall topic, in this case, family background, identify a key concept (e.g., socioeconomic status), define

that concept (e.g., social and economic resources), and figure out what indicators would help measure that concept (e.g., household income).

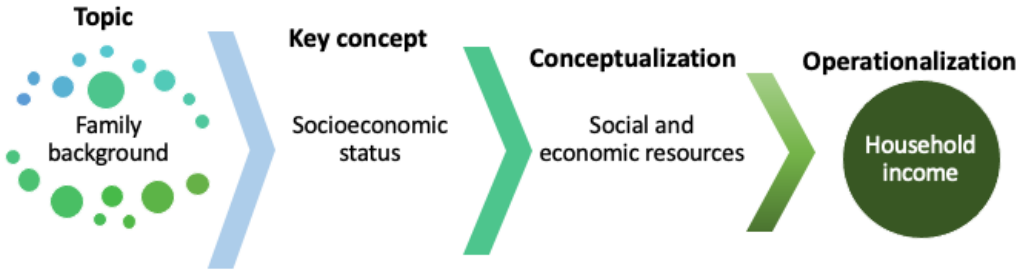

Figure 7. 1 The Measurement Process

While Figure 7.1 identifies household income as one indicator of SES, the researcher would develop a few more indicators to fully capture the definition of SES as both social and economic resources. Other indicators might include those discussed above such as level of education and speech patterns.

Figure 7.1 makes the measurement process look like a set of linear stages through which a researcher neatly progresses before beginning data collection; however, it doesn't necessarily always work that way, especially in inductive research. For example, imagine a researcher is interested in examining the different ways that lawyers define SES. They would have already begun the measurement process in the same way as we've discussed, by having some general interest and identifying key concepts related to that interest (in this case, SES). They might even have some working definitions of SES, and they'll definitely have some idea of how to go about discovering how different lawyers define the concept. But, if the purpose of the study is to discover the variety of indicators lawyers rely on when thinking about SES, then the researcher probably wouldn't develop a specific set of indicators before beginning data collection.

Thus, rather than defining indicators before collecting data, some researchers focus their projects on collecting data to identify common indicators used by people in the real world as they try to understand ambiguous, socially constructed concepts.

Variables and causality

The indicators that a researcher develops to measure abstract concepts pertinent to their study are often called variables. Etymologically speaking, a variable is a quantity that can vary (e.g., from low to high, negative to positive, etc.), in contrast to constants that do not vary (i.e., remain constant). In scientific research, a **variable** is a measurable representation of an abstract concept. Sometimes, researchers use a group of indicators to create a variable, as might be the case if a researcher decides to measure socioeconomic status using indicators of household income and level of education.

One important piece of the measurement process involves attending to issues of cause and effect, which requires categorizing variables as independent or dependent. **Causality** refers to the idea that one event, behavior, or belief will result in the occurrence of another, subsequent event, behavior, or belief. In other words, it is about cause and effect. The main criteria for establishing include plausibility, temporality, and spuriousness.

Plausibility means that a claim that one event, behavior, or belief causes another, must make sense. For example, if a researcher observes series of courtroom interactions during which a prosecutor routinely talks over a defense attorney, the researcher might begin to wonder whether prosecutors who have a propensity to be speak loudly are more likely to have a propensity to interrupt other lawyers. However, the fact that there might be a relationship between the volume of a person's voice and talking over other people does not mean that a prosecutor's loud voice could cause them to talk over defense attorneys. In

other words, just because there might be some correlation between two variables does not mean that a causal relationship between the two is really plausible.

The criterion of **temporality** means that a cause must precede its effect in time. Imagine that our researcher observing lawyers finds that younger lawyers tend to cope with the emotional demands of their jobs by spending more time on social media than older lawyers. In other words, the researcher finds a correlation between age and using social media as a coping strategy. Does this mean that a person's use of social media determines their age? Definitely not. In addition to being implausible, a person's age precedes their social media use. Thus, age precedes the use of social media as a coping strategy in time.

Finally, a **spurious relationship** is one in which an association between two variables appears to be causal but can in fact be explained by some third variable. Let's consider a real-world example of spuriousness. Did you know, for example, that high rates of ice cream sales have been shown to cause drowning? Of course, that's not really true, but there is a positive relationship between the two. In this case, a third variable, time of year, causes both high ice cream sales and increased deaths by drowning because the summer season brings increases in both. In other words, the presence of a third variable explains the apparent relationship between the two original variables.

In sum, the following criteria must be met for a correlation to be considered causal:

- The relationship must be plausible.
- The cause must precede the effect in time.
- The relationship must be nonspurious.

As the above discussion indicates, causality concerns relationships between variables. When one variable causes another, we have what researchers call independent and dependent variables. An **independent variable** is one that causes another. A **dependent variable** is one that is caused by another. Dependent variables depend on independent variables. In the example where age was found to be causally linked to social media use as a coping strategy, age would be the independent variable because age caused differences in social media use as a coping strategy. The coping strategy would be the dependent variable because it is caused by age. In other words, the use of social media as a coping strategy depends on age.

Some research methods, such as those used in qualitative and inductive research, focus on understanding the "how" of causality. These methods contribute to understanding the circumstances under which causal relationships occur. Qualitative, inductive research sometimes relies on quantitative, deductive work to point toward a relationship that may be interesting to investigate further. For example, if a quantitative researcher learns that lawyers who are men are statistically more likely than lawyers who are women or transgender to use social media as a coping strategy, a qualitative researcher may decide to conduct some in-depth interviews and observations of transgender, men, and women lawyers to learn more about how the different contexts and circumstances of their lives might shape their respective chances of using social media as a coping strategy. In other words, researchers conducting qualitative, inductive research might work to understand the contexts in which various causes and effects occur.

Summary

- Conceptualization is the process of clearly defining key concepts involved in a research question. It's one of the first steps in the measurement process after identifying a topic and generating a research question.
- Operationalization occurs after conceptualization, and it is the process of explaining exactly how a concept will be measured.
- The three main criteria for establishing causality include plausibility, temporality, and non-spuriousness.
- Independent variables are those that cause changes in other variables. Dependent variables are those that change due to changes in other variables. Dependent variables depend on independent variables.

Key terms

Causality	Independent variable	Plausibility
Concept	Indicators	Spurious relationship
Conceptualization	Measurement	Temporality
Dependent variable	Operationalization	Variable

Discussion questions

1. Could a researcher skip the conceptualization step of the measurement process? Why or why not?
2. Identify a concept that is important in your area of interest. Challenge yourself to conceptualize the term without first consulting prior literature. Then, consult prior work to see how others have

conceptualized the concept you chose. How and where does your conceptualization differ from others? What dimensions of the concept hadn't you or others considered?

3. Could a researcher skip the operationalization step of the measurement process? Why or why not?
4. Identify a concept that is important in your area of interest. Challenge yourself to identify some possible indicators of that concept without first consulting prior literature. Then, consult prior work to see how others have operationalized the concept you chose. How and where do your indicators differ from others? What types of indicators hadn't you or others considered?
5. Why are each of the three main criteria for establishing causality important? What would happen if one of the three were violated?
6. Choose a research question that you're interested in answering. Then, identify an independent variable and a dependent variable that would be important for your study. How did you know which variables were independent and dependent?

Chapter 8

Sampling

Chapter 8 objectives

1. Identify the unit of analysis in a research study.
2. Distinguish between populations and samples.
3. Describe appropriate sampling strategies for inductive and deductive approaches to research.
4. Use information about samples to evaluate research claims.

Social science researchers come up with all sorts of interesting questions to investigate using scientific research methods. Unfortunately, researchers can't study entire populations because of feasibility and cost constraints. Instead, we systematically select samples from a larger group of interest to draw conclusions about the people, behaviors, or social phenomena that we're interested in. Who researchers select for their samples and how they choose their sample impacts the conclusions that can be drawn from scientific research studies. The process of selecting a subset of a population to study is called **sampling**. This chapter focuses on key elements of sampling, types of sampling strategies, and how to use information about samples to evaluate claims made based on research findings.

Units of analysis

The main goal of sampling is to identify a subset of a larger group from which to collect data. To do so, a researcher must first define the larger group or entity that they're interested in studying. This larger group is also called the unit of analysis. **Unit of analysis** refers to the entity (individuals, groups, organizations, behaviors, objects, cities, nations, etc.) that is the target of the investigation. In other words, a unit of analysis is the entity that you wish to be able to say something about at the end of your study.

In any scientific study, the research question determines the unit of analysis. For instance, if we are interested in studying people's opinions of the police, their recidivism, or their interest in various careers in criminal justice, then the unit of analysis must be the *individual*. If we want to study characteristics of street gangs or teamwork in correctional settings, then the unit of analysis will be the *group*. If the goal of research is to understand how courts can improve cost efficiency or case processing times, then the unit of analysis is the *court system*. If a researcher is trying to understand differences in incarceration rates between nations, then the unit of analysis becomes a *country*. Even inanimate objects can serve as units of analysis. For instance, the unit of analysis for a research project focused on understanding how guns proliferate across the United States would be the *gun* rather than people who use, traffic, or sell the guns. Finally, if we wanted to study how knowledge transfer occurs between criminal justice agencies, then our unit of analysis would be the *dyad* (the combination of agencies that are sending and receiving knowledge).

Identifying the unit of analysis based on a research question can sometimes be tricky. Consider for example, a study of why a certain neighborhood has a higher crime rate than surrounding neighborhoods. Contenders for the unit of analysis include crimes or people committing the crimes, but ultimately the research question focuses on the *neighborhood* as the unit of analysis because the focus of the investigation is the neighborhood rather than crimes or people who commit crimes. However, the unit of analysis for a study of different types of crimes in different neighborhoods would be the *crime* because the focus is on the types of crimes rather than the neighborhoods. If a researcher wanted to study why people in a neighborhood engage in illegal activities, then the unit of analysis would be the *individual*. These examples illustrate how similar research questions may have entirely different units of analysis depending on the focus of the investigation.

To test your understanding of how to identify the unit of analysis, consider a study in which the researcher wants to examine differences in death penalty laws across states. What's the unit of analysis? In other words, what's the focus of the investigation? Is it the states? The laws? Individuals within the states? In this case, the unit of analysis would be the *law*. The research question focuses on differences in laws across states, so it's not really focusing on the states or the people within each state; instead, it focuses on the laws themselves. The laws are the target of the investigation and the thing that the researcher wants to be able to say something about at the end of the study.

In sum, social science researchers might examine many potential units of analysis. Identifying the unit of analysis early on in a research study is important because it shapes the type of data a researcher should collect for their study and who they should collect it from. If your unit of analysis is a neighborhood, you should be collecting data about neighborhoods rather than surveying people about how they perceive the neighborhood. If your unit of analysis is a policy or law, then you should be gathering legislative and legal documents rather than observing legislators' day-to-day lives. Sometimes, researchers collect data from a lower level of analysis and aggregate that data to a higher level of analysis. For instance, to study teamwork in correctional settings, a researcher could survey individual actors in different correctional settings and average their individual teamwork scores to create a composite score for variables like cohesion and conflict that are related to teamwork.

Populations versus samples

Once a researcher has defined the unit of analysis, they can then begin to narrow their focus to identifying the population that they wish to study. A **population** can be defined as all people or groups or other entities with the characteristics that one wishes to study. Populations in research may be rather

large, such as "the American people," but they are usually more specific than that. For example, a study for which the population of interest really is the American people will still specify which American people such as adults over the age of 18 or citizens or legal residents. In the study mentioned earlier about why certain neighborhoods have higher crime rates, the unit of analysis would be the neighborhood, but rather than identify all neighborhoods as the population, the researcher would probably narrow their focus to all neighborhoods in a particular geographic area. In another example, consider the question of how and why death penalty laws differ across states. The unit of analysis would be death penalty laws, and the researcher would likely identify the population as all death penalty laws in U.S. states at a particular point in time or over a certain timeframe. Even this identification of the population narrows the focus from the overall unit of analysis.

At this point, you might wonder why researchers don't just gather data from the entire population. In reality, researchers rather gather data from their entire populations of interest. To understand why, consider the kinds of research questions that social science researchers ask. For example, when the local police department asked us to study public opinion of the police in our city, we identified the population as all people who lived in the city. We never expected to collect data from every one of the thousands of residents in the city. To do so would have taken a massive amount of time and monetary resources. Instead, we had to make some hard choices about who to ask to participate in our survey. Rather than survey the entire population, we systematically chose a subset of the population to complete the survey.

The subset of the population from which we actually gather data is called a **sample**. In the case of the policing survey, our sample included all households within a few specified neighborhoods. Both qualitative and quantitative researchers use scientific sampling techniques to identify their samples, and

these techniques vary according to the approaches and goals of the research. As we'll discuss in the rest of this chapter, some sampling strategies allow researchers to make claims about populations that are much larger than their sample with a fair amount of confidence. Other sampling strategies allow researchers to make theoretical contributions rather than sweeping claims about large populations.

Sampling strategies for inductive, qualitative research

Researchers conducting inductive, qualitative research typically make sampling choices that enable them to deepen understanding of the phenomenon they are studying. This section examines some of the most common sampling strategies that these researchers employ, all of which fall under the umbrella of nonprobability sampling techniques.

Nonprobability sampling

Nonprobability sampling refers to sampling techniques for which the chances of any person or entity being included in the sample is unknown. Because we don't know the likelihood of selection, we can't know whether a sample represents a larger population. This might sound like a problem, but representing the population is not the goal with nonprobability samples. Even though nonprobability samples may not represent a larger population, researchers still use systematic scientific processes to select their samples. The next sections explain some of these sampling strategies, but first let's consider why a researcher might decide to use a nonprobability sample.

A researcher might choose a nonprobability sampling method when designing a research project. For example, before conducting survey research, a researcher might administer the survey to a few people who seem to resemble the people they're interested in studying to help work out any issues with the

survey such as unclear question wording, a missing response option, or confusing ordering of questions. Researchers might also use a nonprobability sample to conduct a pilot study or exploratory research before designing a more comprehensive study. This can be a quick way to gather some initial data and help get some idea of the lay of the land before conducting a more extensive study. These examples show how nonprobability samples can be useful when setting up, framing, or beginning a research project.

Researchers also use nonprobability samples in full-blown research projects. These projects are usually qualitative in nature, where the researcher's goal is in-depth understanding of a topic or issue. For example, evaluation researchers who aim to describe some very specific small group might use nonprobability sampling techniques. Researchers conducting inductive research in which the goal is to contribute to theoretical understanding of some phenomenon might also collect data from nonprobability samples. These researchers may seek out extreme or anomalous cases to help improve existing social theories by expanding, modifying, or poking holes in those theories.

In short, nonprobability samples serve a very important purpose in social science research. They are particularly useful for developing strong research projects and for improving theories through the use of extreme, anomalous, or other purposefully selected cases.

Types of nonprobability samples

Researchers use several types of nonprobability sampling techniques, including purposive sampling, snowball sampling, quota sampling, and convenience sampling. While the latter two strategies may be used by quantitative researchers from time to time, they are more typically employed in qualitative research and they are both nonprobability sampling techniques.

Purposive samples

To draw a **purposive sample**, a researcher begins with specific perspectives in mind that they wish to examine and then seeks out research participants or cases that meet the research goals. A researcher may use this sampling strategy when they want to ensure that their study covers a full range of perspectives. For example, when we wanted to study public opinion of local police, we needed to include people who live in different locations and types of neighborhoods throughout the city. If we had only included people who lived in one neighborhood, we would have missed important details about the opinions of people who live in the neighborhoods we didn't include in our study. To achieve this, we used a purposive sampling strategy in which we used information from prior theories and research to ensure that we included people from a variety of neighborhoods who may have differing views on the police.

While purposive sampling is often used when the goal is to include participants who represent a broad range of perspectives, purposive sampling may also be used when a researcher wants to include only people who meet very narrow or specific criteria. For example, when I wanted to study community responses to sexually violent predator placements in California, I limited my study only to communities in which a placement had been proposed within a specific timeframe, a community notification meeting had occurred, and were different types of communities (e.g., urban, rural, suburban). In this case, my goal was to find communities that had had very specific experiences with sexually violent predator placements rather than finding communities that had had diverse experiences with sex offenders in their neighborhoods. In other words, the goal was to gain an in-depth understanding the topic at hand.

Snowball samples

Qualitative researchers sometimes rely on snowball sampling techniques to identify study participants. With **snowball samples**, a researcher starts by

identifying a few respondents that match the criteria for inclusion in the study, and then asks them to recommend others they know who also meet the selection criteria. In this case, a researcher might know of one or two people they'd like to include in their study, so they rely on those initial participants to help identify additional study participants. For instance, if you wanted to survey women lawyers and you knew only one or two such lawyers, you could start with them and then ask them to recommend others who are also women in the legal field who might be willing to talk with you. Thus, the sample builds and becomes larger as the study continues, much as a snowball builds and becomes larger as it rolls through the snow.

Snowball sampling is an especially useful strategy when a researcher wishes to study some stigmatized group or behavior. For example, a researcher who wanted to study how transgender police officers cope with police culture would be unlikely to find many participants by posting a call for interviewees in the police station or announcing the study during a departmental briefing. Instead, the researcher might know of a transgender police officer, interview that person, and then be referred by the first interviewee to another potential participant. Having previous participants vouch for the trustworthiness of the researcher may help new potential participants feel more comfortable about being included in the study. For the same reason, researchers may also use snowball samples when they're interested in studying hard-to-reach populations such as people who share an unpopular opinion on an issue or people who belong to a group with very few members.

Quota samples

Both qualitative and quantitative researchers use quota sampling, but because it is a nonprobability method, we'll discuss it in this section. **Quota samples** involve the researcher segmenting the population of interest into mutually exclusive groups, and then choosing a non-random set of observations

from each group to meet a predefined quota. In this type of sampling, a researcher finds potential participants by 1) identifying categories that are important to the study and for which there is likely to be some variation, 2) creating subgroups based on each category, 3) deciding how many people (or documents or whatever element happens to be the focus of the research) to include from each subgroup, and 4) collecting data from that number of entities for each subgroup.

The number of entities to include in each group can be determined in a few different ways. In **proportional quota sampling**, the researcher tries to match the proportion of respondents in each subgroup to the proportion of that group in the population. For instance, imagine you wanted to use a sample of 100 people to understand voting preferences of the American public. You'd first need to identify important demographic characteristics of the U.S. population. You might identify race/ethnicity as the most important for your purposes. Then, to decide how many people to include from each racial/ethnic group, you'd look at the percentages of the population in each racial and ethnic group as reported by the U.S. Census. According to the U.S. Census in 2021, 60% of the population reported their race or ethnicity as white alone and not Hispanic or Latino, 18.5% reported Hispanic or Latino, 13% reported Black or African American alone, 6% Asian alone, 1.3% American Indian and Alaska Native alone, and 3% reported two or more races. If you wanted to aim for a sample of 100 people, then you'd want to ensure that 60 people in your sample identified as white alone and not Hispanic or Latino, 18 or 19 people identified as Hispanic or Latino, and so on, with the numbers in each group matching the percentages reported in the Census. This means that if you were standing outside a grocery store asking people to participate in your survey, you'd have to stop collecting data once you reached the predetermined number of people in a particular category.

Nonproportional quota sampling is less restrictive because a researcher tries to meet a minimum number of people in each subgroup rather than meeting a proportional representation of the population. In this case, a researcher may decide to have 50 respondents from each racial/ethnic group, and then stop when they reach the quota for each subgroup. A non-proportional technique can be useful in research with small and/or marginalized groups because it oversamples these groups to provide more data on people whose voices may otherwise be silenced by the voices of people in proportionately larger groups.

In sum, quota sampling techniques offer the strength of helping researchers account for potentially relevant variation across study elements, but they are neither designed nor guaranteed to yield findings that can be generalized to an entire population.

Convenience samples

As with quota sampling, both qualitative and quantitative researchers use convenience sampling techniques. Also called accidental or opportunity samples, **convenience samples** involve drawing a sample from the part of the population that is close at hand, readily available, and/or otherwise convenient to access. To draw a convenience sample, a researcher simply collects data from those people or other relevant elements to which they have the most convenient access. This method, also sometimes referred to as haphazard sampling, is most useful in exploratory research. Journalists also use this technique when they need quick and easy access to people from their population of interest. If you've ever seen brief interviews of people on the street, you've probably seen a convenience sample in action.

While convenience samples offer one major benefit—convenience—we should be cautious about generalizing from research that relies on convenience

samples. These types of samples exclude a large portion of the population (for example, people who don't happen to walk down the street on which the researcher is looking for participants), and the data collected from the sample may reflect the unique characteristics of the area or group in which you've chosen to recruit participants rather than representing the larger, more diverse set of people or other entities that you're trying to study.

Table 8.1 provides a summary of the types of nonprobability samples. As explained earlier, rather than trying to represent a larger population, the overall goal of these samples is to provide insights for designing and conducting larger research projects or to build or improve theories about social phenomena.

Table 8. 1 Types of Nonprobability Samples

Sample type	In this type of sample, a researcher…
Purposive	Seeks out elements that meet specific criteria.
Snowball	Relies on participant referrals to recruit new participants.
Quota	Selects cases from within several different subgroups.
Convenience	Gathers data from whatever cases happen to be accessible.

Sampling strategies for deductive, quantitative research

Researchers conducting deductive, quantitative studies often want to generalize their findings to larger populations. While there are certainly instances when quantitative researchers rely on nonprobability samples (e.g., when doing exploratory or evaluation research), quantitative researchers tend to rely on probability sampling techniques. As we'll discuss, the goals and techniques associated with probability samples differ from those of nonprobability samples.

Probability sampling

Probability sampling refers to sampling techniques for which every person (or event) has an equal and known chance of being selected for membership in the sample. This is important because in most cases, researchers who use probability sampling techniques want to identify a representative sample from which to collect data. A **representative sample** is one that resembles the population from which it was drawn in all the ways that are important for the research being conducted. If, for example, you wish to be able to say something about differences between men and women at the end of your study, you must make sure that your sample doesn't contain only women. That's a bit of an oversimplification, but the point with representativeness is that if your population varies in some way important to your study, your sample should contain the same sorts of variation.

Why might researchers care about obtaining a representative sample? Researchers that design studies using probability sampling techniques want to be able to generalize their findings to a larger group that the sample represents. This is called generalizability, and it is the main feature that distinguishes probability samples from nonprobability samples. **Generalizability** refers to the idea that a study's results will tell us something about a group larger than the sample from which the findings were generated. To achieve generalizability, probability sampling techniques rely on a core principle of **random selection**, which means that they try to ensure that all elements in the researcher's target population have an equal chance of being selected for inclusion in the study. We won't go in-depth into the mathematical process of random selection except to say that researchers who use random selection techniques to draw their samples will be able to use statistical techniques to estimate how closely the sample represents the larger population from which it was drawn.

In short, probability samples serve a very important purpose in social science research. They are particularly useful for obtaining representative samples that allow for generalizing to larger populations by relying on the principle of random selection.

Types of probability samples

Researchers use several types of probability samples, including simple random samples, systematic samples, stratified samples, and cluster samples. Generally, researchers conducting deductive, quantitative studies are the most likely to use these sampling techniques.

Simple random samples

In a **simple random sample**, all possible units of the population of interest have an equal probability of being selected. While simple random samples are the most basic type of probability samples, researchers don't often use them because of the difficulties involved in generating a true simple random sample. To draw a simple random sample, a researcher starts with a **sampling frame**, or a list of every single member, or element, of the population of interest. For instance, if you wanted to survey 25 police departments in your state, you'd first develop a list of every police department in your state. This list would be your sampling frame.

Once a researcher has created their list, they then number each element sequentially and then use a random number table (or a set of randomly assigned numbers) to select the elements from which to collect data. One way to do this would be to enter each element into a spreadsheet and then use a random number function within the spreadsheet program to generate random numbers for each element on the list. In the example of a survey of police departments, you could list each department as a separate row in a spreadsheet, and then generate a random number to be associated with each row. Then, you would

sort the list based on the assigned random number and choose the first 25 departments to survey.

Instead of random number functions within spreadsheet programs, researchers could also use a random number table from a variety of other sources such as textbooks or free online random number generators. For example, the website Stat Trek contains a random number generator that you can use to create a random number table of whatever size you might need (http://stattrek.com/Tables/Random.aspx). Randomizer also offers a useful random number generator (http://randomizer.org).

Systematic samples

Systematic sampling techniques offer the benefits of simple random sampling while being somewhat less tedious to implement. As with simple random samples, a researcher using systematic sampling must be able to produce a list of every one of their population elements. Rather than assigning random numbers to each element, researchers draw a **systematic sample** by ordering sampling frame according to some criteria and then selecting elements at regular intervals throughout the ordered list. Put another way, researchers select every k^{th} element in the list, where k indicates the selection interval, or the distance between elements on the list.

To begin the selection process, a researcher needs to figure out how many elements they wish to include in their sample, and then calculate *k* using a formula. To illustrate this process, let's return to the example where you're interested in surveying 25 police departments in your state. First, you would find out how many police departments were in your state, and a list of those departments would be your sampling frame. For the purposes of this example, we'll say there are 100 police departments in your sampling frame. To determine the selection interval, or *k*, you would divide the total number of elements in

your sampling frame by your desired sample size. In this case, the selection interval would be 4, or 100 divided by 25. Put in a more mathematical way, researchers use the formula $k = N/n$ to calculate the selection interval. In this formula, k is the ratio of sampling frame size N and the desired sample size n.

After calculating the selection interval, researchers order their list according to some criteria that ensures variation on some element relevant to the research question. For example, in a study of police departments, a researcher might choose to order the list based on each department's number of employees or the population size of the area they serve. Whichever criteria a researcher chooses, it must relate back to the research question in some way. In other words, researchers must consider how and why variation on the criteria they choose is important for understanding the phenomenon of interest.

Once a researcher has developed their sampling frame, calculated the selection interval, and ordered the sampling frame, the next step is to determine where to begin selecting elements for inclusion in the sample. To ensure random selection, the starting point must not automatically be the first element on the list. Instead, the researcher will choose a random number between 1 and k and begin there. In our example of selecting 25 police departments from a list of 100 departments, we calculated 4 as the selection interval. This means that you would randomly select one of the first 4 departments on the list to start with, and then choose every fourth department for inclusion in the sample. So, if you chose the third department to start with, that department would be the first of the 25 departments in your sample. The seventh department would be the second department in the sample, the eleventh would be the third department in the sample, and so on until you had your sample of 25 departments.

By ordering the sampling frame and then systematically and randomly selecting elements for inclusion in the sample, the process of systematic

sampling ensures that elements in the sample are equally represented based on the sorting criterion.

Stratified samples

In a **stratified sample**, a researcher divides the study population into **strata**, or mutually exclusive subgroups, and then draws a simple random sample from each subgroup. This technique can be useful when a subgroup of interest makes up a relatively small proportion of the overall sample, and the researcher wants to be sure to include representatives from all subgroups, no matter the size of the group. For example, imagine a researcher wants to examine how people with a range of gender identities perceive their interactions with the police. Transgender people make up a smaller percentage of the population than cisgender men and women, so there's a chance that neither simple random nor systematic sampling techniques would yield any transgender people in the sample. The same logic applies to other non-dominant gender identities such as non-binary, agender, gender-fluid, etc. Instead, using stratified sampling techniques can help ensure that the sample contains adequate numbers of people in the gender subgroups in the population.

In the previous example of selecting 25 police departments from a list of 100 departments, a researcher could start by categorizing the departments based on the population in the area they serve. The categories might include areas with large (more than 50,000 people), medium (between 10,000 and 50,000 people), and small (less than 10,000 people) populations. The researcher would then use simple random sampling to select 8 departments from two subgroups and, depending on which group the researcher is most interested in ensuring representation, 9 from the third subgroup to make up the sample of 25 departments. This sampling strategy would ensure that departments serving small, medium, and large populations would be equally represented in the sample even though they're likely not equal in the larger population.

Cluster samples

Each of the probability sampling techniques we've discussed so far assumes that researchers can access a list of population elements to create a sampling frame. This is not always the case. Let's say, for example, that you wish to conduct a study of the experiences that people with different gender identities have had with the police in your state. In the previous sampling techniques, you'd need to create a list of every person in your state along with their gender identities. Even if you could find a way to generate such a list, attempting to do so might not be the most practical use of time or resources. When this is the case, researchers turn to cluster sampling. With **cluster samples**, researchers divide the population into "**clusters**" (or small groups for sampling), randomly sample a few clusters, and then include all units within those clusters in their study.

Researchers often use cluster sampling in relation to geographic areas. For example, if a researcher wants to study public opinion about the death penalty in a large city, they might divide the city into neighborhoods, use random sampling methods to choose a few neighborhoods, and then include all households or all people within those neighborhoods in their study. In another example, imagine you're interested in the workplace experiences of prosecuting attorneys across the United States. While obtaining a list of all prosecutors in the country would be rather difficult, it would be much easier to create a list of all prosecutors' offices across the country. Thus, you could draw a random sample of prosecutors' offices (your clusters), and then include all prosecutors in the offices you've chosen in your sample.

Table 8.2 provides a summary of the types of probability samples. As explained earlier, the overall goal of these samples is to represent a larger

population so that research findings can be more generalizable to that population.

Table 8. 2 Types of Probability Samples

Sample type	In this type of sample, a researcher…
Simple random	Randomly selects elements from sampling frame.
Systematic	Selects every *k*th element from the sampling frame.
Stratified	Creates subgroups and randomly selects elements from each subgroup.
Cluster	Randomly selects clusters and selects every element from those clusters.

Questions to ask about samples

When reading the findings of research studies, it's easy to focus only on findings rather than procedures. But, as the preceding discussions indicate, evaluating how a researcher selects study participants and who they select is very important for understanding research findings. Now that you have some familiarity with the variety of sampling techniques, you are equipped to ask some very important questions about the findings you read and to be a more responsible consumer of research.

Who sampled, how sampled, and for what purpose?

Social science researchers on college campuses have a luxury that other researchers may not have: access to a whole bunch of (presumably) willing and able human guinea pigs (e.g., students). But that luxury comes at the cost of sample representativeness. One study of top academic journals in psychology found that over two-thirds (68%) of participants in studies published by those journals were based on samples drawn in the United States, and two-thirds of the work that derived from US samples published in the Journal of Personality

and Social Psychology was based on samples made up entirely of American undergraduates taking psychology courses (Arnett, 2008).

These findings beg the question of what and about whom we learn from social scientific studies. Joseph Henrich and colleagues pointed out that behavioral scientists very commonly make sweeping claims about human nature based on samples drawn only from WEIRD (Western, educated, industrialized, rich, and democratic) societies, and often from even narrower samples, as is the case with many studies relying on samples drawn from college classrooms (Henrich, Heine, & Norenzayan, 2010). As it turns out, many robust findings about the nature of human behavior when it comes to fairness, cooperation, visual perception, trust, and other behaviors are based on studies that excluded participants from outside the United States and sometimes excluded anyone outside the college classroom (Begley, 2010). These points demonstrate that we must pay attention to the population on which studies are based and the claims being made about to whom the findings apply.

A related, but slightly different, potential concern is **sampling bias**, which occurs when the elements selected for inclusion in a study do not represent the larger population from which they were drawn. For example, a poll conducted online by a newspaper asking for the public's opinion about some local issue will certainly not represent the public since those without access to computers or the Internet, those who do not read that paper's website, and those who do not have the time or interest will not participate in the poll. In addition, just because a sample may be representative in all respects that a researcher thinks are relevant, other aspects that didn't occur to the researcher may also be relevant.

So how do we know when we can count on results that we read from research studies? There aren't any magic or always-true rules we can apply, but we can keep in mind a couple of guiding points. First, while sampling methods provide guidelines for drawing scientifically valid samples, the quality of a sample should be evaluated only by the sample actually obtained. A researcher

may set out to administer a survey to a representative sample by correctly employing a random selection technique, but if only a handful of the people contacted respond to the survey, the researcher will have to be very careful about the claims they make about the survey findings. Second, researchers may be tempted to talk about the implications of their findings as though they apply to some group other than the population actually sampled. This tendency usually doesn't come from a place of malice, but we must be attentive to how researchers talk about their findings in relation to the population they have sampled.

Finally, keep in mind that a sample that allows for comparisons of theoretically important concepts or variables is certainly better than one that does not allow for such comparisons. In a study based on a nonrepresentative sample, for example, we can learn about the strength of our social theories by comparing relevant aspects of social processes. The key is knowing the strengths of nonprobability and probability samples for answering different kinds of research questions and making sure that researchers' claims match what they can say with the type of sample they used in their study.

At their core, questions about sample quality should address who has been sampled, how they were sampled, and for what purpose they were sampled. Being able to answer those questions will help you better understand, and more responsibly read, research results.

Summary

- The unit of analysis is the larger group, individual, or entity that a researcher wants to be able to say something about at the end of their study.

- A population is the entire group or set of entities that a researcher wants to study. By contrast, a sample is a subset of the population from which the researcher gathers data.
- Inductive, qualitative approaches to research tend to rely on nonprobability samples, which use sampling strategies such as purposive, snowball, quota, and convenience sampling.
- Deductive, quantitative approaches to research tend to rely on probability samples, which use sampling strategies such as simple random, systematic, stratified, and cluster sampling.
- Evaluating research findings requires examining sampling procedures and the quality of the samples themselves. Answering questions such as who was sampled, how were they sampled, and why were they sampled can help assess the validity of claims made based on the findings of the research.

Key terms

Cluster
Cluster sample
Convenience sample
Generalizability
Nonprobability sampling
Nonproportional quota sampling
Population
Probability sampling
Proportional quota sampling
Representative sample
Purposive sample
Quota sample
Random selection
Sample
Sampling
Sampling bias
Sampling frame
Simple random sample
Snowball sample
Strata
Stratified sample
Systematic sample
Unit of analysis

Discussion questions

1. Explain the unit of analysis for a study of how and why prison conditions differ across U.S. states. Would the unit of analysis be different for a study of the informal groups that people in prison create to cope with life in prison? Why or why not?
2. Can the same group constitute a population in one study and a sample in another? Why or why not?
3. How do the goals of inductive, qualitative research match with the goals of nonprobability sampling methods?
4. How do the goals of deductive, quantitative research match with the goals of probability sampling methods?
5. What are some similarities and differences between purposive, snowball, quota, and convenience samples?
6. What are some similarities and differences between simple random, systematic, stratified, and cluster samples?
7. Explain three important things to consider about sampling procedures and samples when evaluating the implications of research findings.
8. Create your own research question. Then, identify the unit of analysis, population, and what type of sample you'd use to find participants. Is the type of sample you chose a probability or nonprobability sampling method? Why did you choose that particular method over other methods in the same category (other nonprobability or probability methods)?

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Part III: Qualitative Data Collection and Analysis Techniques

Focus groups

Field research

Chapter 9

Focus groups

Chapter 9 objectives

1. Define focus groups.
2. Identify the strengths and weaknesses of focus group methodology.
3. Describe how to determine the best size for focus groups.
4. Identify the major considerations in focus group composition.
5. Discuss how to moderate focus groups.

Many kinds of researchers use focus groups to achieve their research goals. Market researchers use focus groups to gather information about the products or services they aim to sell. Government officials and political campaign workers use them to learn how members of the public feel about a particular issue or candidate. Academics use them to learn about perceptions of or opinions on various topics of interest. As with all other methodologies, the strengths and weaknesses of focus groups make them particularly useful for answering some types of research questions and not so useful for answering others. This chapter explains focus group methodology and the strengths and weaknesses of the method.

What is a focus group?

Focus groups are planned discussions designed to elicit group interaction to gain a deep understanding of people's experiences and perceptions of complex social issues. In this method, a researcher gathers a small group of people to participate in a facilitated discussion on a topic of interest to the researcher. During the conversation, the researcher becomes a **moderator**, a person who organizes and guides the discussion by posing questions or topics for discussion to get the participants talking to each other. They then let the group members discuss the questions or topic among themselves, with the goals of

ensuring that everyone has a chance to respond and observing interactions among participants.

A researcher conducting focus groups collects data on more than people's direct responses to their questions; the group interaction is a key focal point. For example, during their conversations, participants may ask each other follow-up questions, agree or disagree with one another, display body language that tells us something about their feelings during the conversation, or even come up with new questions. Further, when people hear others talk, it can trigger responses or ideas that they had not yet considered. These are the kinds of interactions and displays that the researcher can focus on. Due to the nature and unpredictability of group interaction, and the fact that focus group researchers generally want to draw out group interaction, focus groups tend to be qualitative rather than quantitative.

Strengths and weaknesses of focus groups

Focus groups share many of the strengths and weaknesses of one-on-one qualitative interviews, which we'll discuss in a later chapter. Both methods can yield very detailed, in-depth information; are excellent for studying social processes; and provide researchers with an opportunity not only to hear what participants say but also to observe what they do in terms of their body language. Focus groups offer the added benefit of giving researchers a chance to collect data on human interaction by observing how group participants respond and react to one another.

Focus groups can also be quite expensive and time-consuming. However, there may be some time savings with focus groups as it takes fewer group events than one-on-one interviews to gather data from the same number of people. Another potential drawback of focus groups is that one or two participants might dominate the group, silencing other participants. Careful planning and skillful

moderation on the part of the researcher can help avoid, or at least deal, such possibilities. Table 9.1 summarizes the strengths and weaknesses of focus groups.

Table 9. 1 Strengths and Weaknesses of Focus Groups

Strengths	Weaknesses
Yield detailed, in-depth data	Expensive
Less time-consuming than one-on-one interviews	May be more time-consuming than survey research
Useful for studying social processes	Minority of participants may dominate entire group
Allow researchers to observe body language in addition to self-reports	
Allow researchers to observe interaction between multiple participants	

Considerations for forming and conducting focus groups

The effective use of focus groups for data collection requires careful planning and skillful moderating. In some ways, focus groups require more advance planning than other qualitative methods of data collection such as one-on-one interviews, where a researcher may be better able to control the setting and the dialogue, or field research, where "going with the flow" and observing events as they happen in their natural setting is the primary aim.

Group size and composition

When forming focus groups, researchers must take care to form groups whose members will want to interact with one another and to control the timing

of the event so that participants are not asked nor expected to stay for a longer time than they've agreed to participate. The researcher must also be prepared to inform focus group participants of their responsibility to maintain the confidentiality of what is said in the group. At the same time, the researcher must also clarify to participants that the unique nature of the group setting prevents them from being able to promise complete confidentiality.

Researchers determine the size of focus groups in part by the topic of interest and their sense of how much participants will have to say about the topic. If the topic is one that is likely to invoke passionate responses and a lot of conversation, a group of 3 to 5 people may be ideal. Groups larger than that, especially for heated topics, can easily become unmanageable. For other topics, a group of about 6 to 10 participants may be the ideal size for focus group research. If you're going to form a focus group, you'll want to consider what you know about the topic and participants' potential interest in, passion for, and feelings about the topic. You should also consider your comfort level and experience in conducting focus groups. These factors will help you decide which size is right for your research project. As this discussion indicates, the researcher ultimately decides the size of the focus group, and they may choose to conduct multiple focus groups on the same topic to increase their sample size.

Once you've decided to form a focus group, you'll also need to consider who might be willing to talk to each other. It may seem counterintuitive, but in general, focus groups with participants who don't know each other may provide more information than groups in which participants are friends, relatives, or acquaintances. To understand why, consider how you interact and talk with your closest friends. Are there abbreviations or slang words you use that outsiders may not understand? Do you have previous experiences together that you refer to often without needing explanations? If you and your closest friends were to form a focus group, your taken-for-granted, shared knowledge and assumptions

about each other and the topic could make it hard for a researcher to collect quality data because you might not talk about things that you think everyone there already knows. Conversely, you may also be discouraged from questioning or raising issues with shared knowledge and assumptions if you're with a group of close friends. In addition, researchers should avoid setting up interactions where participants are so heterogeneous that they feel uncomfortable talking with one another.

Whatever composition a researcher designs for their focus groups, they must keep in mind the extent to which social contexts impact group dynamics. Participants' silences as well as their speech may be shaped by gender, race, class, sexuality, age, and other background characteristics or social dynamics, all of which might be suppressed or exacerbated depending on the composition of the group.

Moderating focus groups

As facilitated discussions, focus groups must be guided by a skilled moderator. Often, the researcher moderates the discussion, but sometimes they bring in a trained outside person to serve in this role. Whoever moderates the focus groups, they must be sure to provide enough space for interaction and discussion while also ensuring that the group achieves the research goals.

At the outset of the focus group, the moderator must set ground rules. Let's assume that you're the moderator. You'd begin by reminding participants that they've been invited to participate because you want to hear from all of them. Therefore, the group should aim to let just one person speak at a time and avoid letting just a couple of participants dominate the conversation. One way to do this is to begin the discussion by asking participants to briefly introduce themselves or to provide a brief response to an opening question. This will help set the tone of having all group members participate. You'd also ask participants

to avoid having side conversations because it's important to share thoughts about or reactions to the group's conversation with everyone rather than only a few group members.

As the focus group gets rolling, the moderator plays a less active role than in a one-on-one interview. Sometimes, the conversation may stall or you, as moderator, may want to guide the conversation in another direction. In these instances, the moderator must demonstrate that they've been paying attention to the conversation before trying to guide it in a new direction. For example, the moderator should be prepared to interject statements or questions such as "I'd really like to hear more about what Sally and Joe think about what Dominick and Ashley have been saying" or "Several of you have mentioned ____. What do others think about this?". These kinds of statements and questions can help in a variety of ways, including keeping the conversation going, redirecting the conversation, shifting the focus to participants who have been less active in the group, and serving as a cue to those who may be dominating the conversation to allow others to speak.

In sum, focus groups are a useful method for researchers who wish to gather in-depth information about social processes. Focus groups resemble one-on-one qualitative interviews in many ways, but they give researchers the opportunity to observe group dynamics that cannot be observed in one-on-one interviews. Historically, focus group research was more commonly used by applied researchers than by academics, though in recent decades social scientists from all domains have discovered the usefulness of focus groups for gaining understanding of social processes and have begun using this method of data collection in their studies.

Summary

- Focus groups are moderated discussions designed to elicit group interaction.
- Focus groups help researchers gather detailed, in-depth data on a social issue or process. They're less time-consuming than interviews, and they allow for observations of body language and interaction dynamics in addition to what participants say.
- Focus groups can be expensive and more time-consuming than survey research. They also require a skilled moderator who can ensure that all participants have a chance to speak and that some participants don't dominate the conversation.
- The researcher determines the size of focus groups based on the goals and topic of the research. Generally, a group will not be fewer than 3 people or larger than 10 people.
- Generally, focus group members should not already know each other but they must also be similar enough that they feel comfortable talking to each other.
- Moderating focus groups requires skills in setting ground rules for discussion, keeping the conversation going, ensuring equal participation of everyone in the group, and guiding the discussion to achieve the goals of the research.

Key terms

Focus groups Moderator

Discussion questions

1. How are focus groups different from an informal conversation among friends?
2. Considering the strengths and weaknesses of focus groups, what kinds of research approaches, goals, and questions do you think focus groups are best suited for?
3. If you were to design a study using a focus group to understand how people talk about the death penalty, what do you think would be the best size for your group? Why?
4. If you were to design a study using a focus group to understand how people talk about the death penalty, what would you need to consider in terms of the composition of the group? Why would these factors be important?
5. Based on the information in this chapter, design a set of ground rules that you'd use if you were to moderate a focus group. Why would each rule be important for your research goals?

Chapter 10

Field research

Chapter 10 objectives

1. Define field research.
2. Define participant observation and describe the continuum of participant observation.
3. Define content analysis and distinguish between primary and secondary sources.
4. Identify the strengths and weaknesses of field research methodology.

Earlier in this textbook, I've discussed my research on community responses to sexually violent predators. As a reminder, I sought to answer the question of how and why communities respond differently to sexually violent predators (SVPs) in their neighborhoods. I wanted to know how people within communities reacted to news of a potential SVP moving into their neighborhood, and I wanted to see how they responded as a community rather than just their individual opinions on the issue. I needed a research method that would allow for observing people in their communities, interviewing them, and analyzing documents and other information to gain an in-depth understanding of the local dynamics that shaped people's responses to this highly charged issue.

Field research allowed me to do this. Through interviews with residents and local officials, compiling and analyzing online archives and media sources, and observing community meetings and protest events in three communities, I found that communities' and community members' relationships with political and legal systems shaped how they responded to SVP placements. Without field research, I wouldn't have been able to form the in-depth understanding of local dynamics that allowed me to build theory about how and why communities respond differently to unwanted people and projects in their neighborhoods.

This chapter defines field research and explains the strengths and weaknesses of the method. As indicated above, field research encompasses a few different methods. We'll cover some of them in this chapter and others in subsequent chapters.

What is field research?

Field research is a qualitative method of data collection aimed at understanding, observing, and interacting with people in their natural settings. Field researchers immerse themselves in the settings that they study, as I did in the three communities I studied for my research. While the extent to which researchers immerse themselves in a particular setting varies, all field researchers have in common their participation in "the field."

When social scientists talk about being in "**the field**," they're talking about being out in the real world and involved in the everyday lives of the people they are studying. For example, when I observed community meetings or went to people's houses for interviews, I was in the field. During field research, researchers take **field notes**, or notes on what they are seeing, hearing, feeling, and even smelling and tasting. Sometimes this can be done while in the field; other times, researchers must wait until they leave the field for the day to write up their notes. For example, community meetings allowed me to sit with my notebook and write down everything I saw and heard without it being too awkward because I wasn't expected to interact with anyone. However, when I attended protest events, I had to wait until I returned to my hotel room to write up my notes because standing on a street corner wasn't conducive to writing my observations. Plus, I wanted to talk with people who were protesting rather than having my attention focused on writing. Regardless of where they write their full field notes, field researchers often carry pocket-sized notebooks in which they can jot down brief reminders of important observations and events to write

more about later. Regardless of when a researcher writes their field notes, they must take great care to note as much as they possibly can while in the field and as much as they can remember after leaving the field. Researchers never know what might become important later on, and things that seem entirely unimportant at the time may later reveal themselves to have some relevance.

In this text, we'll use two main terms to refer to field research: field research and participant observation. You might think of field research as an umbrella term that includes the activities that field researchers engage in when they collect data: they participate, they observe, they usually interview some of the people they observe, and they typically analyze documents, audio files, or other artifacts created by the people they observe. Figure 10.1 illustrates these common components of field research.

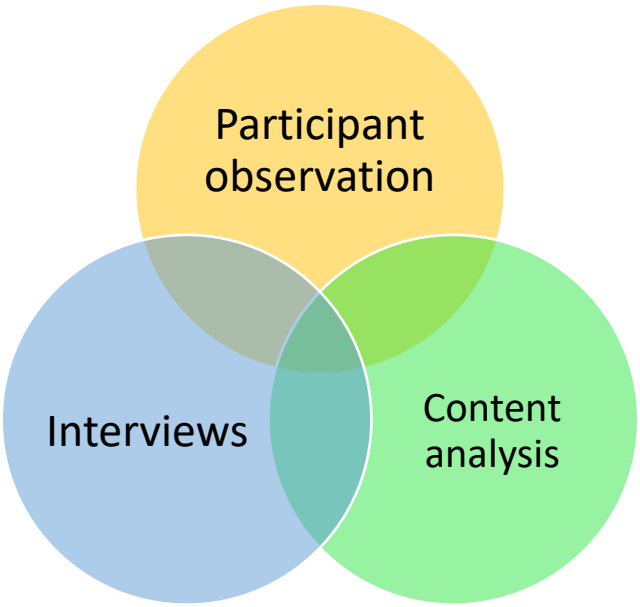

Figure 10. 1 Components of Field Research

It's important to note that field research may include any combination of these components. For example, some researchers may conduct only participant

observation, others might conduct interviews and analyze documents, and still others might analyze documents and engage in participant observation. In this chapter, we'll focus on participant observation and document analysis. Then, we'll discuss interviews in Chapter 11.

Participant observation

Participant observation means that a researcher observes interactions and participates in events and interactions in the field. While this might sound straightforward, researchers conducting participant observation vary in the extent to which they participate and/or observe. One way to think about participant observation is as a continuum with complete observation at one end and complete participation at the other. In **complete observation**, a researcher watches people in the field and tries to remain separate from what and whom they are observing. In **complete participation**, a researcher fully immerses themselves in the social group they are studying, as Laud Humphreys did in his tearoom trade research, which we discussed in chapter 3. Rather than only observe, these researchers take part in the social life of their field and sometimes do not even tell the people they're interacting with that they're researchers.

To understand the strengths and weaknesses of each side of the participant observation continuum, imagine you want to understand how children learn to obey rules during unstructured play. You might choose to conduct participant observation on a local playground over a few different days and times. As a complete observer, you could choose to sit on a bench at the edges of the playground or a blanket on the grass outside the playground area. You would then watch and take notes on how the children at the playground played with their peers and interacted with their parents. From this outside

perspective, you might be able to see a wide variety of interactions across different children and families.

At the same time, you might also miss important aspects of interactions between individual children, small groups of children, and/or between some children and their parents. While you'd likely see lots of interactions over multiple days, you would also miss important aspects of children's interactions that occur on their trips to and from the playground and in their homes. These downsides of complete observation mean that researchers may not be able to fully grasp what life is like for the people they observe. Thus, complete observation has a strength of providing opportunities to see interactions that researchers might miss were they more involved, and a weakness of not being able to entirely understand life in their field of study.

Complete participation has the benefit of allowing researchers a deeper understanding of life in the group that they study. For example, in your study of how children learn to obey rules, you might decide to become a nanny. Then, you could take children to the playground, play with them, watch how they pick up on rules, and learn more about how and when they decide which rules to follow and which to break. While complete participation offers the advantage of a more in-depth understanding of the phenomenon under study, it also may complicate the researcher's role and position in the field. Practically, complete participation makes it less likely that a researcher can take comprehensive notes in the field. They may find themselves spending many hours writing everything they can remember after their participation in the field. Complete observers must also spend time writing notes after each field session, but some of this can often be done during observation.

Another potential problem with complete participation arises when researchers find themselves in situations where they need to exit the field but

cannot because they've adopted the role of complete participant. For example, what if you became a nanny, but then your research ended and the family still desperately needed you to continue in your position? Also, complete participants who do not reveal themselves as researchers must face the ethical quandary of possibly deceiving their "subjects."

In reality, most field research projects lie somewhere near the middle of the observer-participant continuum. Field researchers typically participate at least somewhat in their field sites while also spending some time just observing.

Content analysis

Content analysis involves the study of human communications. **Content analysis** is the systematic analysis of the content of a text (e.g., who says what, to whom, why, and to what extent and with what effect) in a quantitative or qualitative manner. Another way to think of content analysis is as a way of studying texts and their meaning. The "**texts**" that content analysts investigate include such things as actual written copy (e.g., news or magazine articles, legislation, e-mails, letters, blog posts, etc.), content that we might hear (e.g., speeches, podcasts, lectures, etc.), and even visual representations of human communication such as online videos, television advertisements, or movies. When researchers have many texts to analyze, they might begin by sampling a subset of texts for analysis based on some criteria such as dates of publication, topic, or intended audience.

When researchers examine original sources, their texts represent **primary sources**. For example, if you wanted to study letters sent between people in prison and their family members and you obtained copies of these kinds of letters, then you are working with primary sources. It's important to note here that even though you have copies of the original sources, they're still considered primary sources because you're analyzing the original documents.

By contrast, **secondary sources** are those that have already been compiled and analyzed by someone else. In your study of letters between inmates and their families, you may not be able to obtain copies of the original letters. However, you might be able to find books or other publications that have summarized and/or analyzed such letters. Other examples of secondary sources include documentaries and research reports. One way to distinguish between primary and secondary sources is to consider that secondary sources often quote or include information from primary sources.

Sometimes students new to research methods struggle to grasp the difference between a content analysis of secondary sources and a literature review. In a review of literature, researchers analyze secondary materials to try to understand what we know and don't know about a particular topic. The sources used to conduct a scholarly review of the literature are typically peer-reviewed sources, written by trained scholars, published in some academic journal or press, and based on empirical research that has been conducted using accepted techniques of data collection for the discipline. A literature review synthesizes these sources to arrive at some conclusion about our overall knowledge about a topic.

Conversely, a content analysis of scholarly literature would raise questions not raised in a literature review. A content analyst might examine scholarly articles to learn something about the authors (e.g., Who publishes what, where?), publication outlets (e.g., How well do different journals represent the diversity of the discipline?), or topics (e.g., How has the popularity of topics shifted over time?). A content analysis of scholarly articles would be a "study of the studies" as opposed to a "review of studies." Perhaps, for example, a researcher wishes to know whether more men than women authors are published in the top-ranking journals in the discipline. The researcher could conduct a content analysis of different journals and count authors by gender

(though this may be a tricky prospect if relying only on names to indicate gender). Or perhaps a researcher would like to learn whether or how various topics of investigation go in and out of style. They could investigate changes over time in topical coverage in various journals. In these latter two instances, the researcher is not aiming to summarize the content of the articles but instead is looking to learn something about how, why, or by whom particular articles came to be published.

Content analysis can be qualitative or quantitative, and often researchers will use both strategies to strengthen their field research. In qualitative content analysis the researcher aims to identify themes and analyze the underlying meaning of those themes. Quantitative content analysis, on the other hand, involves assigning numerical values to information in the texts under study so that they can be analyzed using various statistical procedures.

Strengths and weaknesses of field research

Field research can help researchers answer "how" questions such as how the processes they study occur, how the people in the field interact, and how events unfold. Field researchers gain firsthand first-hand experience and knowledge about the people, events, and processes that they study, and no other method offers quite the same kind of close-up lens on everyday life. This close-up on everyday life means that field researchers can obtain very detailed data about people and processes, perhaps more detailed than they can obtain using any other method.

As with focus groups, field research yields very rich and nuanced data, which makes it an excellent choice for studying social processes and for understanding the role of social context in shaping people's lives and experiences. Because field research typically occurs over an extended period, it enables a greater understanding of the intricacies and complexities of daily life.

Plus, the combination of observations, interviews, and content analysis in field research provides further opportunities to understand the social and historical contexts for people's words and actions. For these reasons, field research may also uncover elements of people's experiences or group interactions that no one previously knew. With other methods, such as interviews and surveys, we certainly couldn't expect a respondent to answer a question to which they did not know the answer or to provide information of which they were not aware.

While the time spent in the field and the ability of field researchers to collect very detailed data are strengths of the method, these benefits come at a cost. Because a field researcher focuses on gathering in-depth details on elements and interactions in the field, the focus is by necessity also somewhat narrow. Field researchers simply cannot gather data from as many individuals as, say, a survey researcher could. In short, field researchers generally sacrifice breadth of knowledge in exchange for depth of understanding.

Field research can also be extremely time-intensive and require a lot of money to conduct. Researchers sometimes spend years in the field, and they must take care to write detailed notes to document their observations and other elements of their time in the field. A related concern is the emotional labor involved in successfully conducting a field research project. Field researchers must develop close relationships with the people they study and sustain those relationships for much longer than the hour or two it might take to conduct a focus group, interview, or survey. These relationships can be very rewarding (and yield the rich, detailed data noted as a strength of the method); however as in any relationship, field researchers experience both the highs and lows of daily life and interactions. Plus, participating in day-to-day life with one's research subjects can result in some tricky ethical decisions and can also be a challenge if the aim is to observe as "objectively" as possible.

Finally, documentation can be challenging for field researchers. When writing field notes, field researchers generally have only themselves to rely on for documenting what they observe. As noted earlier, it may not be possible to take field notes while in the field. A researcher might not know from the outset which details to document or which will become the most important details to have noted. And when a researcher takes notes after some observation, they may not recall everything exactly as they saw it when they were there.

In addition to field notes, field research also produces data such as texts to be analyzed and audio recordings of interviews to be transcribed. Preparing these types of data for analysis requires many hours of careful cleaning and curating before the researcher begins systematic analysis of the data. In short, field research can produce so much information that researchers can become overwhelmed by the amount of data they need to sift through.

Table 10.1 summarizes the strengths and weaknesses of field research.

Table 10. 1 Strengths and Weaknesses of Field Research

Strengths	Weaknesses
Yields rich, detailed data	Narrow focus
Useful for studying social processes through “how” questions	Time-consuming and expensive
Allows researchers to observe how people interact with each other	Emotionally taxing
Allows for understanding social and historical contexts for words and actions	Documenting observations may be challenging
	Produces an overwhelming amount of information

As indicated in the table, some of the weaknesses of the method are also its strengths. For example, the narrow focus yields rich and detailed data. As with any method, a researcher must weigh the costs and benefits to determine if the method is right for the research question and overall goals of the research project.

Summary

- Field research is a qualitative research method that uses multiple data collection and analysis techniques such as participant observation, content analysis, and interviews to understand people's words and actions in their social contexts.
- In participant observation, a researcher watches people's interactions and participates in the events and interactions in the field.
- The continuum of participant observation includes complete observation on one end and complete participation on the other end.
- Content analysis is the systematic analysis of the context of a text in which a researcher aims to understand the text and its meaning. Researchers analyze both primary (original) sources and secondary (already compiled and analyzed) sources.
- The rich, detailed data that comes from field research can be very beneficial in studying social processes, social and historical contexts for words and actions, and how people interact with each other.
- Field research can be limited by its narrow focus, and the resources it requires in terms of time, money, and emotional labor. Documenting observations and the sheer amount of data produced during the field research process can be challenging for researchers.

Key terms

Complete observation	Field research	Texts
Complete participation	Participant observation	The field
Content analysis	Primary sources	
Field notes	Secondary sources	

Discussion questions

1. Pretend you're a field researcher. Find a public place to take field notes for about 15 minutes. Be sure to use all your senses as you take notes: your eyes, your ears, your nose, your mouth, and your sense of touch. After your 15 minutes are up, consider what strategies you used to take notes. What decisions did you have to make about what details to write and what details to overlook? How many pages of notes did you write? Did you notice any patterns to your observations? What challenges did you face in your brief field research experience? How might you approach field notetaking differently if you had to do it again?
2. Where do you think is the best place to be on the observer-participant continuum? Why?
3. Consider a research question that's interesting to you and would require content analysis as part of a field research project. List at least one primary source and one secondary source that you might use for your content analysis. How do you know which source is which?
4. In your opinion, what is the most important strength of field research? What do you view as its greatest weakness? Why?

Chapter 11

Qualitative data analysis

As we discussed in chapter 6, qualitative methods are often used for interpretive, theory-building research projects. Qualitative data consist of pictures, words, audio files, and similar non-numerical information that require analysis strategies such as thematic coding, narrative analysis, and content analysis. This chapter focuses on some techniques for analyzing the various kinds of data that qualitative methods such as focus groups and field research tend to generate. Through this discussion, you'll also learn a bit more about the details of how researchers go about conducting qualitative research studies.

Chapter 11 objectives

1. Explain the role of grounded theory in qualitative data analysis.
2. Identify strategies for preparing various types of qualitative data for analysis.
3. Describe the coding process for qualitative data.
4. Identify the main goal of qualitative data analysis.

Overview of qualitative data analysis

Qualitative methods such as focus groups, field research, and qualitative interviews (covered in chapter 12) generate massive amounts of many different forms of data. In focus groups, the researcher might end up with audio or video recordings of the group discussions, field notes about participants' interactions, and demographic information about participants. In field research, the data might be in the form of field notes, audio recordings of interviews, and texts gathered for content analysis. Regardless of which forms of qualitative data the researcher ends up with, they all need to be prepared for systematic analysis that will help answer the research question.

Sometimes the analytic process of field researchers and others who conduct inductive analysis is referred to as grounded theory (Charmaz, 2006; Glaser & Strauss, 1967). **Grounded theory** occurs, as you might imagine, from the "ground up," with the researcher beginning with an open-ended and open-minded desire to understand a social situation or setting. The process of using a grounded theory approach to data analysis involves a systematic process whereby the researcher lets the data guide the inquiry rather than guiding the data using preset hypotheses. The goal of a grounded theory approach is, perhaps not surprisingly, to generate theory. Its name implies not only that discoveries are made from the ground up but also that theoretical developments are grounded in a researcher's empirical observations and a group's tangible experiences.

As exciting as it might sound to generate theory from the ground up, the experience can also be quite intimidating and anxiety-producing as the open nature of the process can sometimes feel a little out of control. Without hypotheses to guide their analysis, researchers engaged in grounded theory work may experience feelings of frustration or angst. At the same time, the process of developing a coherent theory grounded in empirical observations can be quite rewarding, not only to researchers but also to their peers who can contribute to the further development of new theories through additional research and to research participants who may appreciate getting a bird's-eye view of their everyday experiences.

The overall goal of data analysis is to reach some inferences, lessons, or conclusions by condensing large amounts of data into relatively smaller, more manageable bits of understandable information. Each type of qualitative data requires somewhat different analytic techniques, and it would be impossible to cover every type of data in this textbook. Instead, we'll focus on the most common types of data: field notes, audio recordings of interviews or focus

groups, and texts for content analysis. Analyzing each of these types of data requires preparing the data for analysis, coding the data, and analyzing common themes that result from the coding.

Preparing qualitative data for analysis

Field notes

Analyzing field note data is a process that begins the moment a researcher enters the field and continues throughout their time in the field as they write up notes and consider what their interactions and notes mean. In the field, a researcher generally takes **descriptive field notes**, or notes that simply describe a researcher's observations as straightforwardly as possible. These notes typically do not contain explanations of or comments about those observations. Instead, the observations are presented on their own, as clearly as possible. Analyzing field notes involves moving from descriptive field notes to analytic field notes. **Analytic field notes** are notes that include the researcher's impressions about their observations.

Often field notes will develop from a more descriptive state to an analytic state when the field researcher exits a given observation period and sits at a computer to type their notes into a more readable format. We've already noted that carefully paying attention while in the field is important; so too is what goes on immediately upon exiting the field. Field researchers typically spend several hours typing up field notes after each observation has occurred. During this process of creating and preparing the data for analysis, the researcher also beings analyzing their data. In this setting outside the field, researchers take time to reflect on their experiences in the field and what their observations might mean.

Audio recordings

Analysis of audio data typically begins with transcribing the audio into written form. To **transcribe** an audio file means that you create, or someone whom you've hired creates, a complete, written copy of the recording by playing the recording back, typing in each word spoken on the recording, and noting who spoke which words. In general, researchers aim for a verbatim transcription that reports everything said in the recording exactly as the speakers said it. In addition to the words spoken, a verbatim transcription should also include verbal cues such as laughing and filler words (e.g., uh's um's, etc.) as well as notes on nonverbal cues such as tone of voice and when and how respondents emphasized specific spoke words.

Transcribing audio files can be extremely time consuming. Some researchers pay for transcription services while others transcribe audio themselves. When I transcribed interviews from my community responses project, I averaged about five minutes of transcription time for every minute of audio recording. That means that a one-hour interview would take five hours to transcribe! And those files were interviews rather than focus groups or other events where a researcher might have to distinguish between multiple voices and narrative threads in the transcription. Despite the time it takes to transcribe audio files, I think it's worth it. When researchers transcribe their own files, they become immersed in the data. Patterns begin to emerge in what people are saying. Listening to conversations that you participated in or observed can spark recall of nonverbal cues or other interactions that you'd forgotten to include in your field notes. These can contribute to richer data and put a researcher on the path to data analysis.

Texts

Preparing texts for content analysis really depends on the type of texts the researcher has collected. Audio files would need to be transcribed, as

explained in the previous section. Written texts should be compiled and organized in a way that makes sense for the aims of the research (e.g., by source, theme, or type of text). In other words, preparing texts for content analysis requires organizing the texts into forms that allow for systematic review in the next analytic stages.

Coding qualitative data

Once the researcher has prepared their qualitative data for analysis, they begin looking for patterns across the data by reading through their data files and trying to identify codes. A **code** is a shorthand representation of some more complex set of issues or ideas. The process of identifying codes in one's qualitative data is often referred to as **coding**. Coding involves identifying themes across data by reading and rereading (and rereading again) the data until the researcher has a clear idea about what sorts of themes come up across the datapoints.

As you might imagine, wading through all this data can be quite a process. Luckily, some computer programs can help qualitative researchers sort through, code, and analyze their data. Programs such as NVivo (http://www.qsrinternational.com) and Atlasti (http://www.atlasti.com) are specifically designed to assist qualitative researchers with organizing, managing, sorting, and analyzing large amounts of qualitative data. The programs work by allowing researchers to import electronic documents and then label passages with codes, cut and paste passages, search for various words or phrases, and organize complex interrelationships among passages and codes.

A researcher might engage in two types of coding during this process. First, **open coding** is a process by which the researcher reads through each data file, line by line, and notes whatever categories or themes seem to jump out as important. During open coding, researchers try not to let their original research

question or expectations about findings influence the categories or themes they see. In other words, researchers must keep an open mind during open coding. Open coding usually requires multiple go-rounds so that researchers can be sure they've identified all the possible codes they can think of.

Sometimes researchers find themselves struggling to identify themes at the open coding stage. When this happens, they can ask themselves some questions about their data. The answers then give clues about what sorts of themes or categories might be emerging from the data. Some questions might include: Of what topic, unit, or aspect is this an instance? What question about a topic does this item of data suggest? What sort of answer to a question about a topic does this item of data suggest (i.e., what proposition is suggested)? (Lofland and Lofland, 1995). Asking these questions passages of data can help identify and name potential themes and categories.

As researchers pore over their data, they begin to see some patterns or commonalities across the categories or themes they've identified. Once they begin to see these, they might begin focused coding. **Focused coding** involves collapsing or narrowing themes and categories identified in open coding by reading through the notes made while conducting open coding. This process can involve identifying themes or categories that seem to be related and perhaps even merging some that seem to similar to warrant their own unique codes. The researcher then gives each collapsed/merged theme or category a name (or code) identifies passages of data that fit each named category or theme. To identify these passages, the researcher reads through their data yet again and marks each passage with the applicable code or codes. During the coding process, the researcher might also create a **codebook**, or a document that includes brief definitions or descriptions of each code. The codebook can help the researcher go back through their data to ensure they have marked passages with the relevant codes.

Analyzing qualitative data

Recall from the beginning of this chapter that the overall goal of data analysis is to reach some inferences, lessons, or conclusions by condensing large amounts of data into relatively smaller, more manageable bits of understandable information. The analysis process for qualitative data is not distinct from the preparation and coding stages. For example, while transcribing audio files, the researcher is also beginning to identify themes (coding) and make sense of those themes (analysis). Even creating a codebook is a way of making sense of data and developing a way to talk about the findings. Thus, analyzing qualitative data occurs throughout the entire process of an inductive, qualitative research process. Researchers conducting these types of studies begin analyzing the moment they start a focus group, enter the field, or gather texts to analyze. By the time the researcher has prepared their data, identified codes, marked passages with those codes, and developed definitions of each code, the data have been condensed into manageable form that allows the researcher to report on their findings in ways that make sense to a larger audience.

Summary

- Grounded theory is a bottom-up method of analyzing qualitative data that starts with empirical observations and works up to build a theory based on those observations.
- Preparing field notes for analysis requires typing up all the notes and then beginning to move from descriptive to analytic field notes. For audio recordings, the preparation process involves transcribing the recordings word-for-word. How a researcher prepares texts for content analysis depends on the type of texts.
- Coding is the process of looking for patterns and identifying themes in a researcher's data. The process involves many close readings of the data

during which the researcher labels passages with relevant codes. Researchers generally start with open coding and then narrow their attention to focused coding.

- The main goal of data analysis is to condense large amounts of data into more manageable pieces of information that the researcher can then use to reach conclusions about their data.

Key terms

Analytic field notes	Coding	Grounded theory
Code	Descriptive field notes	Open coding
Codebook	Focused coding	Transcribe

Discussion questions

1. Read more about grounded theory at the Grounded Theory Institute's website. What do you think about grounded theory? Is this way of conducting research something interesting to you? Why or why not?
2. Conduct the practice field research explained in Chapter 10, discussion question 1. Then, prepare your field notes for analysis by typing up all of your notes and then add some of your own insights to create some analytic field notes. How long did this process take you for notes from a 15-minute observation period? What did this experience tell you about preparing field notes for analysis?
3. Choose a podcast episode from Give Methods a Chance. Transcribe the first 2 minutes of the podcast. Be sure to type exactly what the speakers say and indicate who said what, tone of voice, and any other cues you hear. How long did this process take you for 2 minutes of audio? What did this experience tell you about preparing audio data for analysis?

4. Use the field notes or audio transcript you typed up for question 2 or 3 above to practice your coding skills. Start with open coding, and then move to focused coding. Create a codebook with at least two codes and their definitions. How long did this coding process take you? What did you learn about coding from this experience?

Work cited in chapter 11

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Part IV: A Qualitative and Quantitative Data Collection Technique

Interviews

Chapter 12

Interviews

Chapter 12 objectives

1. Define interviews.
2. Identify when to conduct interviews.
3. Distinguish between qualitative and quantitative interview techniques.
4. Describe how to construct an interview guide.
5. Outline the guidelines for constructing good qualitative interview questions.
6. Describe some considerations for documenting data in interviews.
7. Identify the strengths and weaknesses of interview methodologies.
8. Explain the role of the interviewer.

From the social scientific perspective, **interviews** are a method of data collection that involves two or more people exchanging information through a series of questions and answers. The researcher designs the questions to elicit information from interview participants on a specific topic or set of topics. Typically interviews involve an in-person meeting between an interviewer and an interviewee (also called a respondent). But as you'll discover in this chapter, interviews need not be limited to two people, nor must they occur in person. In this chapter, we'll discuss interview techniques for collecting both qualitative and quantitative data. Through this discussion, you'll see that while the two types of interviews share some features, they also have important differences that relate back to the types of questions and research goals each is uniquely designed to address.

When to conduct interviews

Interviews are an excellent way to gather detailed information. They also have an advantage over surveys (which we'll discuss more in chapter 14) because they allow researchers to ask follow-up questions when a participant's response sparks some idea for the researcher. In

other words, because interviewers talk with study participants in real time, they can ask questions to learn more about the story behind responses they might receive in a written survey. Interviews are also useful when the topic is rather complex, when the questions require lengthy explanation, or when participants may need extra time or dialogue with others to work out their answers. Also, if the research topic is one about which people will likely have a lot to say or will want to provide some explanation or describe some process, then interviews may be the best method. In sum, interview research is especially useful when a researcher:

- Wishes to gather very detailed information.
- Anticipates wanting to ask respondents for more information about their responses.
- Plans to ask questions that require lengthy explanation.
- Has a complex or confusing topic.
- Has a topic that involves studying processes.

Qualitative interview techniques

Qualitative interviews are sometimes called intensive or **in-depth interviews**. In these interviews, the interviewer works directly with the respondent to ask questions and record their responses. These interviews are **semi-structured**, which means that the researcher has a particular topic they want to hear about from the respondent, but the questions are open-ended and may not be asked in exactly the same way or in exactly the same order to each and every respondent. In-depth interviews aim to hear from respondents about what they think is important about the topic at hand and to hear it in their own words. Qualitative interviews involve **open-ended questions**, or questions that a researcher asks without providing possible answer options. They are harder to answer because they require respondents to come up with their own words,

phrases, or sentences in response. To respondents, qualitative interviews may seem more like conversations than interviews; in reality, the researcher guides the conversation to ensure the respondent talks about information relevant to the topic and goals of the research project.

Interview guides

While qualitative interviewers may not ask the same questions in the same way to every respondent, the researcher usually develops a guide in advance that they then refer to (or have memorized to use) during the interviews. This guide, also called an **interview guide**, contains a list of topics or questions that the interviewer wants to cover during the interview. The guide is flexible and helps remind the researcher of the important issues to cover with the respondent. You can think of an interview guide as similar to your to-do list for the day: both contain the items you hope to check off or accomplish, but it wouldn't be the end of the world if you didn't accomplish everything on the list or in the exact order in which it's written.

While interview guides should outline issues likely to be important to the research and the opening question may be the same across interviews, each interview flows a little differently because participants provide answers in their own words and raise points that they believe are important. For these reasons, qualitative interviews require a skilled interviewer who can ask questions, listen to responses, and pick up on cues about when to follow up, move on, or simply let the respondent speak without guidance or interruption.

The specific format of an interview guide might depend on the topic or the interviewer's style, experience, and comfort level as an interviewer. Appendix B gives an example interview guide from my study of community responses to sexually violent predators. In my interviews with local residents, the guide I used included a list of topics (underlined and bolded in the example

guide) with some main questions and sub-questions under each topic. This guide was relatively detailed, but interview guides can also be as simple as a few questions or topics written on a small notecard.

As you might have guessed, interview guides result from thoughtful and careful work on the part of a researcher. Sometimes qualitative interviewers may create two versions of the interview guide: one version that contains a very brief outline of the interview, perhaps with just topic headings, and another that contains detailed questions underneath each topic heading. In this case, the researcher might use the very detailed guide to prepare and practice in advance of conducting interviews, and then just bring the brief outline to the interview. Bringing an outline, as opposed to a very long list of detailed questions, to an interview can encourage the researcher to actually listen to people's responses rather than trying to navigate an overly detailed interview guide.

Brainstorming is usually the first step to developing an interview guide. A researcher begins by simply listing all the topics and questions that come to mind when they think about their research question. Then, they pare down their list by cutting questions and topics that seem redundant and grouping similar questions and topics together. They may also develop with question and topic headings for the grouped categories and consult the scholarly literature to find out what kinds of questions other interviewers have asked in studies of similar topics.

The order of questions also matters, as people need the opportunity to warm up to the interview and feel comfortable talking with the interviewer before talking about sensitive or controversial issues. In the example interview guide in Appendix B, I started with asking respondents to tell me about their communities before going into the specific details of the community's response to the controversial placement. I also left demographic questions for the end of

the interview because I didn't want questions with very brief answers to set the tone and conversational style for the entire interview.

As they develop interview guides, researchers try to follow a few important guidelines. First, they try to avoid questions that can be answered with a simple yes or no. If they do choose to include such questions, they make sure to include follow-up questions. While an important part of in-depth interviewing is asking follow-up questions, researchers should try to avoid asking "why" as a follow-up question. A simple, "Why?" can come off as confrontational, even if that is not how the researcher intend it. Often people won't know how to respond to "why," perhaps because they don't even know why themselves. Instead of "why," researchers may say something like, "Could you tell me more about that?" This alternative question allows participants to explain themselves further without feeling that they're being doubted or questioned in a hostile way. Researchers also try to avoid asking leading questions. For example, rather than asking, "Don't you think that people in your neighborhood have a strained relationship with the police?" you could ask, "What comes to mind for you when you think about the police in your neighborhood?"

Sometimes, respondents give brief cursory answers instead of the in-depth responses that qualitative interviewers hope for. In these cases, the interviewer can probe the respondent to elicit a more thoughtful, thorough response. A useful probing technique can be just pausing and waiting without going to the next question. This may indicate that the interviewer is waiting for more detailed response. Other techniques for eliciting more information include overt encouragement (e.g., an occasional "uh-huh"), asking for elaboration (e.g., "Can you tell me more about that?"), and reflective statements (e.g., "I'm hearing that you found the experience uncomfortable") followed by a pause to wait for the respondent to elaborate.

These strategies for formulating and asking questions help ensure that respondents have many opportunities to share information in their own way and in their own words. To make sure the interview guide allows for these opportunities, researchers get feedback on their interview guide before they begin conducting their interviews. They may ask for feedback from colleagues, and they may even test their guide by conducting test interviews with friends or family members who may have something to say about the topic at hand.

Documenting data in qualitative interviews

After constructing the interview guide, the researcher must consider how to document participants' answers without interrupting the conversational flow of the interview. In other words, when a researcher sits down to interview a respondent in a qualitative interview, they must have a way to record the respondent's answers. Most qualitative interviewers make audio recordings of the interviews they conduct. Recording interviews allows the researcher to focus on interacting with the respondent instead of being distracted by trying to take notes. Of course, not all participants feel comfortable being recorded, and the subject may be so sensitive that even asking respondents for consent to record the interview would be inappropriate. In these cases, the researcher must balance meticulous note-taking with exceptional questioning and even better listening skills. Managing all of these tasks simultaneously can be difficult and mentally exhausting for the researcher.

For these reasons, researchers (especially those new to the practice of interviewing) must practice their interviews in advance. If you decided to conduct qualitative interviews, ideally you'd find a friend or two willing to participate in a couple of trial runs with you. Even better, you'd find someone similar in at least some ways to the people in your sample because they could give you the best feedback on your questions and your interview demeanor.

Strengths and weaknesses of qualitative interviews

As indicated in the preceding sections of this chapter, qualitative interviews are an excellent way to gather detailed information. Using this method, topics can be explored in much more depth than with almost any other method. Not only can participants elaborate in a way not possible with other methods, but they can also share information with researchers in their own words and from their own perspectives rather than being asked to fit those perspectives into limited response options. Because qualitative interviews are designed to elicit detailed information, they are especially useful when a researcher's aim is to study social processes, or the "how" of various phenomena.

Of course, qualitative interview methodology also has its drawbacks. As with some other methods, in-depth interviews rely on respondents' ability to accurately and honestly recall details about their lives, circumstances, thoughts, opinions, or behaviors. Further, as you may have already guessed, qualitative interviewing is time intensive, especially when you factor in the entire process from creating an interview guide, identifying a sample, conducting interviews to transcribing and coding those interviews. Interviews may also be expensive, especially when researchers offer respondents some monetary incentive or other form of appreciation for their time for participating. Conducting qualitative interviews can also be emotionally taxing for the researcher. Interviewing people about their experiences may invoke stories of trauma and other shocking, infuriating, or sad events that may be difficult for respondents to tell and for the researcher to hear.

Table 12.1 summarizes these strengths and weaknesses.

Table 12. 1 Strengths and Weaknesses of Qualitative Interviews

Strengths	Weaknesses
Yield in-depth, detailed data	Relies on accurate and honest recall of events, thoughts, behaviors, etc.
Useful for studying social processes through "how" questions	Time-consuming
Allows participants to share information in their own words and from their own perspectives	Can be expensive
	Emotionally taxing

Quantitative interview techniques

Quantitative interviews are sometimes referred to as survey interviews because they resemble survey-style question-and-answer formats, but they are also similar to qualitative interviews in that they involve some direct interaction between the interviewer and the respondent. Quantitative interviews can also be called **standardized interviews**. The difference between surveys and standardized interviews is that with standardized interviews, the interviewer reads questions and answer options to respondents rather than having respondents complete a survey questionnaire on their own. In contrast to qualitative interviews, the questions posed in a standardized interview tend to be **closed-ended**, or questions asked that provide a list of answer options from which the respondent must choose. In some instances, a quantitative interviewer might also ask a few open-ended questions, but the coding process works somewhat differently than coding in-depth interview data.

Interview schedules

Whereas qualitative interviewers emphasize respondents' roles in determining how an interview progresses, quantitative interviewers aim to pose every question-and-answer option in the same way to every respondent to minimize **interviewer effect**, or possible changes in the way an interviewee responds based on how or when the interviewer presents questions and answer options. In short, consistency is the goal in quantitative interviews.

This difference between quantitative and qualitative interviews means that researchers use a more rigid document to guide quantitative interviews. In quantitative interviews, the researcher uses an **interview schedule**, which contains a list of questions and answer options that the researcher reads in exactly the same way to every respondent.

During a quantitative interview, the interviewer must follow the questionnaire script and ask questions exactly as written rather than trying to change the wording to make the question sound friendlier or more socially appealing. The interviewer should not change the order of questions, skip any question that the respondent may have answered earlier, or finish the respondent's sentences on open-ended questions.

Documenting data in quantitative interviews

Researchers may audio-record quantitative interviews, but because questions tend to be closed-ended, taking notes during the interview is less disruptive than it can be during a qualitative interview. Further, because the researcher provides answer choices for the respondent to choose from, the answers may be documented right on the interview schedule or in a computer program from which the researcher reads the questions and notes the respondent's chosen answers. If a quantitative interview contains open-ended questions, the researcher may choose to create audio recordings of the

interviews. Researchers may also record quantitative interviews if they want to assess possible interview effects or if they employ more than one interviewer and want to review interviews for quality-control purposes.

Quantitative interviewers are usually more concerned with gathering data from a large, representative sample than qualitative interviewers. As you might imagine, collecting data from many people via interviews can be quite laborious. Technological advances in telephone interviewing procedures can assist quantitative interviewers in this process. One concern about telephone interviewing is that fewer and fewer people list their telephone numbers these days, but **random digit dialing** (RDD) takes care of this problem. RDD programs dial randomly generated phone numbers for researchers conducting phone interviews. This means that unlisted numbers are as likely to be included in a sample as listed numbers.

Computer-assisted telephone interviewing (CATI) programs have also been developed to assist quantitative survey researchers. These programs select respondents randomly using a random digit dialing technique. Then, they guide interviewers through the interview process by displaying instructions and questions to be asked on a computer screen. Interviewers can enter responses directly into the computer, and CATI programs can even record responses using voice capture technology. These programs saving hours of time that would otherwise have to be spent entering data into an analysis program by hand.

Strengths and weaknesses of quantitative interviews

Quantitative interviews offer several benefits. People tend to agree to quantitative interviews more readily than to completing paper questionnaires. Quantitative interviews can also help reduce respondent confusion about questions and answers provided on a paper questionnaire. If a respondent doesn't understand a question or answer option on a questionnaire, they

probably won't have the opportunity to get clarification. In an interview, on the other hand, the researcher can clarify or explain any items that may be confusing.

As with every method of data collection we've discussed, there are also drawbacks to conducting quantitative interviews. As with qualitative interviews, quantitative interviews rely on respondents accurately and honestly recalling events, opinions, thoughts, and behaviors. Perhaps the largest issue, and of most concern to quantitative researchers, is interviewer effect. Questions on hard copy questionnaires may create an impression based on the way they are presented, but having a person ask questions introduces many additional variables that might influence a respondent. As previously mentioned, consistency is key with quantitative data collection. Unfortunately for quantitative interviewers, human beings can be inconsistent. Finally, compared to research using paper questionnaires, interviewing respondents is much more time consuming and expensive.

Table 12.2 summarizes these strengths and weaknesses.

Table 12. 2 Strengths and Weaknesses of Quantitative Interviews

Strengths	Weaknesses
Higher response rates than surveys	Relies on accurate and honest recall of events, thoughts, behaviors, etc.
Opportunities for researchers to clarify confusing questions or answer choices	Potential interviewer effect
	Time-consuming
	Can be expensive

Role of the interviewer

Whether conducting qualitative or quantitative interviews, the interviewer serves a multi-faceted role in the research process. First, the interviewer must prepare for the interview by going through training on the purpose of the study, how responses will be stored and used, interview techniques, and potential sources of interviewer bias. Part of this training usually involves practicing and timing the interview before beginning data collection.

Second, the interviewer must act as a kind of salesperson for the study, convincing unwilling or uninterested respondents to participate in an interview. Part of this process involves trying to accommodate respondents' schedules and preferred interview locations. For examples, respondents may only be able to participate in the study at times that might be undesirable to the interviewer such as evenings and weekends. In face-to-face interviews, respondents may ask interviewers to meet them in inconvenient locations. Plus, respondents often feed off the motivation of the interviewer. If the interviewer is disinterested or inattentive, respondents may not want to provide useful or informative responses. Thus, the interviewer must demonstrate enthusiasm about the study, communicate the importance of the research to respondents, and be attentive to respondents' needs throughout the interview.

Third, interviewers must be able to think on their feet and effectively address unanticipated concerns or objections raised by respondents. Another part of this aspect of the interviewer's role is judging the quality of the information collected. For example, if the respondent's gestures or body language indicate that a respondent is lying or choosing answers at random, the interviewer must note their observations of the respondent's demeanor for further analysis by the researcher.

Summary

- Interviews involve two or more people exchanging information through a series of questions and answers.
- Interviews can be useful when a researcher wants to gather detailed information from respondents about a complex topic and/or one that involves studying social processes, and they plan to ask questions that require lengthy explanation or anticipate wanting to ask respondents for more information about their responses.
- Qualitative interview techniques use open-ended questions to provide respondents many opportunities to share information in their own way and in their own words for in-depth exploration of a topic. Quantitative interview techniques also involve direct interaction between interviewer and respondents, but they use a more standardized set of closed-ended questions to elicit information from respondents.
- Qualitative researchers construct interview guides by brainstorming topics and questions, curating their list of topics and questions to focus on the main goals of the research study, and then ordering the questions in a way that makes sense for the interview.
- Good questions for qualitative interviews are open-ended, elicit further information in non-confrontational ways, and don't lead respondents toward a particular answer.
- In qualitative interviews, the interviewer documents data in ways that don't disrupt the conversational flow of the interview such as audio recording each interview and jotting brief notes during and after the interview is finished. In quantitative interviews, interviewers may rely more on taking notes and writing down respondents' answers as they go or noting them in a CATI program.

- Qualitative interviews are strongest in gathering in-depth, detailed data about social processes from the perspectives of and in the words of the people being studied. Quantitative interviews tend to yield higher response rates than impersonal surveys and they also allow the researcher to clarify confusing questions or answer choices. Both types of interviews can be time-consuming and expensive, and qualitative interviews can be very emotionally taxing. Both types of interviews also rely on respondents' accurate and honest recall, which can be problematic.
- Interviewers must train for interviewing, act as a salesperson for the study, attend to respondents' needs during the interview, respond to unanticipated concerns or objections raised by respondents, and assess the quality of the information collected.

Key terms

Closed-ended questions
Computer-assisted telephone interviewing
In-depth interview
Interview
Interview guide
Interviewer effect
Open-ended questions
Random digit dialing
Semi-structured interview
Standardized interviews

Discussion questions

1. Think about a topic about which you might wish to collect data by conducting interviews. What makes this topic suitable for interview research? Would you choose qualitative or quantitative interviews to research the topic? Why?
2. Based on a research question you have identified through earlier exercises in this text, write a few open-ended questions you could ask

during in-depth interviews on the topic. Now critique your questions. Are any of them yes/no questions? Might any of them come across to respondents as hostile? Are any of them leading?

3. Take the questions you developed in response to the previous question and turn them into closed-ended questions. How might the information you'd gather from the open-ended version of the questions differ from what you'd gather from the closed-ended questions?
4. What part of being an interviewer do you think you'd find most challenging? Most rewarding? Why?

Part V: Quantitative Data Collection and Analysis Techniques

Surveys

Experiments

Quantitative data analysis

Chapter 13

Surveys

Sometimes students in research methods classes believe that understanding what a survey is and how to write one is so obvious that there's no need to dedicate any class time to learning about it. This feeling is understandable. Surveys have become very much a part of our everyday lives, and we've probably all taken one, heard about their results in the news, or even administered one ourselves. As we'll discuss in this chapter, constructing a good survey takes a great deal of thoughtful planning and many rounds of revisions. As we'll learn in this chapter, there are many benefits to choosing survey research as one's method of data collection. In this chapter, we'll define survey research and discuss when to use it, the strengths and weaknesses of the methodology, some types of surveys, and elements of effective survey questions and questionnaires.

Chapter 13 objectives

1. Distinguish between surveys and interviews.
2. Define survey research.
3. Identify when to use survey research.
4. Explain the strengths and weaknesses of survey research.
5. Describe different types of surveys.
6. Explain four types of bias in survey research.
7. Describe some elements of effective survey questions and questionnaires.

What is survey research?

Survey research is a quantitative methodology in which researchers use standardized questionnaires to systematically collect data about people and their preferences, thoughts, and behaviors. Survey research shares some elements with quantitative interviews, but it is a distinct methodology with its own set of guidelines, strengths, and weaknesses. As with quantitative

interviews, a survey researcher poses a set of predetermined questions to an entire sample of individuals. Unlike interviews, surveys are often administered impersonally, with the person collecting the data only interacting with respondents to get their consent to participate in the research. Then, respondents complete the questionnaire on their own.

Survey research is an especially useful approach when a researcher aims to describe or explain trends or common features of a very large group or groups. This method may also be used as a way of quickly gaining some general details about one's population of interest to help prepare for a more focused, in-depth study using time-intensive methods such as in-depth interviews or field research. In this case, a survey may help a researcher identify specific individuals or locations from which to collect additional data.

Strengths and weaknesses of survey research

Survey research has several benefits compared to other research methods. First, surveys are an excellent way to measure a wide variety of unobservable data such as people's preferences (e.g., political ideologies), traits (e.g., self-esteem), attitudes (e.g., toward people with criminal records), beliefs (e.g., about a new law), behaviors (e.g., smoking or drinking behavior), or demographic information (e.g., income).

Second, survey research allows for remotely collecting data from many people relatively quickly and with minimal expense. With surveys, a large area such as an entire county or country can be covered using representative sampling techniques to administer mail-in, e-mail, or telephone surveys to samples of the population. Mailing a written questionnaire to 500 people entails significantly fewer costs and less time than visiting and interviewing each person individually. Plus, some respondents may prefer the convenient, unobtrusive

nature of surveys to more time-intensive data collection methods such as interviews.

Related to the benefit of cost effectiveness is a survey's potential for generalizability. Because surveys allow researchers to collect data from very large samples for a relatively low cost, survey methods lend themselves to probability sampling techniques, which we discussed in chapter 8. Of all the data-collection methods described in this text, survey research is probably the best method to use when one hopes to gain a representative picture of the attitudes and characteristics of a large group.

Survey research also tends to be a reliable method of inquiry because it uses standardized questionnaires in which every respondent receives the same questions phrased in the same way. Other methods, such as qualitative and sometimes even quantitative interviewing do not offer the same consistency as a quantitative survey. This is not to say that surveys are always reliable. For example, a poorly phrased question can cause respondents to interpret its meaning differently, which can reduce that question's reliability. Thus, assuming well-constructed question and questionnaire design, one strength of survey methodology is its potential to produce reliable results.

As with all methods of data collection, survey research also comes with some drawbacks. First, surveys may be flexible in the sense that researchers can many questions on many topics, but once the researcher has written and distributed the questionnaire, they're generally stuck with a single instrument for collecting data (the questionnaire) regardless of any issues that may arise later. For example, imagine you mail out a survey to 1,000 people and then, as responses start coming in, you discover that respondents find the phrasing of a particular question confusing. At this stage, it would be too late to start over or to change the question for the respondents who haven't yet returned their

surveys. By contrast, when conducting in-depth interviews, a researcher can provide further explanation on confusing questions and can tweak the questions for future interviews as they learn more about how respondents seem to understand them.

Validity can also be a problem with surveys. Because survey questions are standardized, it can be difficult to ask anything other than very general questions that a broad range of people will understand. As a result, survey findings may not be as valid as results obtained using methods of data collection that allow a researcher to comprehensively examine the topic being studied. Let's say, for example, that you want to learn something about voters' willingness to elect a politician who supports the death penalty. On a questionnaire, you might ask, "If a candidate for your state's legislature supported death penalty legislation, would you vote for the candidate if they were qualified for the job?" and provide the options of answering either "yes" or "no." What if someone's answer was more complex than could be answered with a simple yes or no? In an interview, the respondent and interviewer could have a conversation about the intricacies of a respondent's answer to this type of question; however standardized questionnaires often cannot allow for the same range and depth of responses as might be found in other research methodologies. Table 13.1 summarizes these strengths and weaknesses.

Table 13. 1 Strengths and Weaknesses of Survey Research

Strengths	Weaknesses
Can measure a wide variety of unobservable data	Can't change questions after questionnaire has already been distributed
Allows for collecting data from many people quickly and with minimal expense	May be less valid due to lack of variation and depth in responses

Strengths	Weaknesses
Strong potential for generalizing to larger populations	
Use of standardized questionnaires allows for consistency	

Types of surveys

Surveys come in many forms. The different types of surveys arise from differences in time (when or with what frequency a survey is administered) and administration (how a survey is delivered to respondents). This section examines what types of surveys exist when it comes to both time and administration.

Time

In terms of time, there are two main types of surveys: cross-sectional and longitudinal. **Cross-sectional surveys** are administered at a single point in time with no follow-up surveys. These surveys offer researchers a snapshot of respondents' lives, opinions, and behaviors when the survey is administered. One issue with cross-sectional surveys is that the events, opinions, behaviors, and other phenomena that such surveys are designed to assess don't generally remain stagnant. Thus, generalizing from a cross-sectional survey can be tricky; a researcher may be able to say something about how things were in the moment that they administered their survey, but they can't know how long things remained that way after the survey period ended. Consider, for example, a survey administered in 2019 that asked about people's perceptions of the police. In the summer of 2020, the death of George Floyd at the hands of police officer Derek Chauvin sparked national (and even international) protests. Imagine how responses to the same set of questions might have been different if people had been surveyed people during or after that summer. This example demonstrates

that while cross-sectional surveys have many important uses, researchers must remember that a cross-sectional survey captures a snapshot of life and opinions as they were at the time that the survey was administered.

Longitudinal surveys try to overcome this problematic aspect of cross-sectional surveys. **Longitudinal surveys** are administered multiple times. We'll discuss three types of longitudinal surveys, including trend, panel, and cohort surveys. Researchers conducting **trend surveys** are interested in how people's inclinations change over time. Gallup opinion polls are an excellent example of trend surveys. You can read more about Gallup on their website: http://www.gallup.com/Home.aspx. To learn about how public opinion changes over time, Gallup administers the same questions to people at different points in time. For example, for several years Gallup has polled Americans to find out about their confidence in police. One thing that Gallup's polling has shown is that confidence in police remained relatively stable from 1993 through 2019. Confidence dipped in 2020, especially among Black Americans, but by 2021, the percent of Americans who said they had at least some confidence in police had already started to increase from the historic lows in 2020. Thus, through Gallup's use of trend survey methodology, we've learned that while Americans' confidence in police does change somewhat according to national conversations about policing, it also tends to revert relatively quickly back to the previous norms.

Trend surveys are unique among longitudinal survey techniques because the same people may not be answering the researcher's questions each year. For example, when we administered our own survey of public opinion of the local police, we surveyed people who live in our city in 2016 and again in 2019. We did not track who completed the survey in each year, so some respondents may have completed the survey in both years and others might only have participated in the survey in one of the years. While our analyses of results from

the two years indicated overall trends in the public's opinion of the police, we could not say whether individual people's opinions had changed over time. This is not necessarily a problem for trend surveys because the goal is to examine changes in how the general population thinks about an issue over time. In short, it isn't important that the same people participate in trend surveys each time.

Unlike in a trend survey, in a **panel survey** the same people participate in the survey each time it is administered. For this reason, panel studies can be difficult and costly. Imagine trying to administer a survey to the same 100 people every year for, say, 5 years in a row. Keeping track of where people live, when they move, and when they die takes resources that researchers often don't have. When they do, however, the results can be quite powerful. The University of Minnesota's Youth Development Study (YDS) offers an excellent example of a panel study. Since 1988, YDS researchers have administered an annual survey to the same 1,000 people. Study participants were in ninth grade when the study began, and they are now in their thirties. Several hundred papers, articles, and books have been written using data from the YDS.

The third type of longitudinal survey offers a middle ground between trend and panel surveys. In a **cohort survey**, a researcher identifies some category of people of interest and then regularly surveys people who fall into that category. For example, researchers may identify people of specific generations or graduating classes, people who began work in a given industry at the same time, or perhaps people who have some specific life experience in common. Similar to a trend survey, the same people don't necessarily participate from year to year, but all participants must meet the categorical criteria for inclusion in the study.

All three types of longitudinal surveys share the strength of allowing a researcher to make observations over time. This means that if the behavior or

other phenomenon of interest changes over time, either because of some world event or because people age, the researcher will be able to capture those changes.

In sum, when or with what frequency a survey is administered will determine whether a survey is cross-sectional or longitudinal. Longitudinal surveys may be preferable in terms of their ability to track changes over time, but the time and cost required to administer a longitudinal survey can be prohibitive.

Administration

Surveys vary not just in terms of when they are administered but also in terms of how they are administered. Researchers commonly use self-administered questionnaires to gather survey data. In a **self-administered questionnaire**, respondents receive a written set of questions to which they respond. Self-administered questionnaires can be delivered in hard copy format or online. We'll consider both modes of delivery here.

Hard copy self-administered questionnaires may be delivered to participants in person or via snail mail. Researchers may deliver surveys in person by going door-to-door and either asking people to fill them out right away or making arrangements to mail the completed survey back or have the researcher return to pick it up at a later date. We used this method in our policing survey: we knocked on doors, explained the purpose of the study, asked people if they wanted to participate, and if they consented, handed them a paper questionnaire with instructions about when and where to leave the questionnaire for later pick up. Though the advent of online survey tools has made door-to-door delivery of surveys less common, some researchers still choose this method. In our survey, we wanted to ensure a more representative

sample of the population than people who would have access to or hear about an online survey.

Distributing surveys door-to-door can be extremely time-consuming, so many researchers decide to send their surveys through the mail. While this mode of delivery may not be ideal (imagine how much less likely you'd probably be to return a survey that didn't come with the researcher standing on your doorstep waiting to take it from you), sometimes it is the most practical or only available option. Often, survey researchers who deliver their surveys via snail mail may provide some advance notice to respondents about the survey to get people thinking about and preparing to complete it. They may also follow up with their sample a few weeks after their survey has been sent out. This can be done not only to remind those who have not yet completed the survey to please do so but also to thank those who have already returned the survey. This sort of follow-up can greatly increase response rates.

Online surveying has become increasingly common because of the ease of use, cost effectiveness, and speed of data collection. It's much simpler to create a survey online, send out the link to potential respondents, and then wait for the responses to roll in. With online surveys, researchers may employ some of the same strategies as mail surveys to increase response rates, including sending advance notice and following up with reminders to complete the survey. To deliver a survey online, a researcher may subscribe to a service that offers online survey construction and administration. Some services offer both free and paid online survey services, and some provide results in formats already readable by data analysis programs. This saves the researcher the step of having to manually enter data into a data analysis program, as they would if they administered their survey in hard copy format.

There are pros and cons to each of the delivery options we've discussed. For example, while online surveys may be faster and cheaper than mailed surveys, a researcher can't be certain that every person in their sample will have the necessary computer hardware, software, and Internet access to complete an online survey. On the other hand, mailed surveys may be more likely to reach the entire sample, but they are also more likely to be thrown away, lost, or not returned. The choice of delivery mechanism depends on factors such as the researcher's resources, respondents' resources, and the time available to distribute surveys and wait for responses.

Biases in survey research

Survey research also has some unique considerations related to goals of generalizing findings from the sample to the broader population. These potential biases include non-response bias, sampling bias, social desirability bias, and recall bias. While some of these biases apply to multiple research methods, they may be particularly relevant in survey research that aims for generalizability from a sample to a population, which is why we'll discuss them in this chapter.

Non-response bias

Survey research can yield notoriously low response rates. For example, a response rate of 15-20% is typical in a mail survey, even after sending two or three reminders to potential respondents. If such a large percentage of potential respondents fail to respond to a survey, then researchers must consider whether some people aren't responding for some common reason, which may raise questions about the validity of the study's findings. For instance, dissatisfied customers tend to be more vocal about their experience than satisfied customers, so they may be more likely to respond to surveys than satisfied customers. Hence, any sample of respondents in a survey about customer service may have more dissatisfied customers than the broader population from

which the researcher draws the sample. This means that the researcher must be very careful when discussing the generalizability of the survey results because the observed data may be an artifact of the biased sample rather than an accurate representation of the population.

Knowing this in advance can help survey researchers strategize about how to improve response rates. Sending a short letter or message to potential respondents before the survey begins can prepare them in advance and improve their likelihood of responding, especially if the letter explains the purpose and importance of the study, how the survey will be administered (e.g., by mail or online), and a note of appreciation for their participation. This can also help respondents see how the issues in the survey may be relevant to their lives, which can also improve response rates.

Other strategies to improve response rates include making the survey as short as possible with clear questions that are easy to respond to, sending multiple follow-up requests for participation in the survey, providing incentives (e.g., cash or gift cards, giveaways, entry into a drawing, or discount coupons) to compensate people for the time and inconvenience of participating, and assuring potential respondents of the confidentiality and privacy of their data.

Sampling bias

As discussed in chapter 8, sampling bias occurs when the people selected for inclusion in a study don't represent the larger population that the researcher is interested in studying. A particular concern in survey research relates to how the researcher administers the survey. For example, online surveys tend to include a disproportionate number of students and younger people who are constantly on the Internet and systematically exclude people with limited or no access to computers or the Internet, such as the poor and the elderly. Further, any surveys that respondents must read and answer on their own will exclude

people who are unable to read, understand, or meaningfully respond to the questions.

Social desirability bias

Many people try to avoid expressing negative opinions or making embarrassing comments about themselves, their employers, or their family or friends. On a survey, researchers may not get truthful responses to questions that require expressing these kinds of negative views. Instead, respondents might spin the truth to portray themselves or people they know in a positive, or socially desirable, light. For example, respondents might try to protect their family, friends, and neighbors by saying that they disagree with statements such as, "My family tends to get on my nerves," "There are a lot of political conflicts in my neighborhood," or "My friends often engage in activities that are against the law" even though they may agree to some degree with the statements. While researchers can never know for sure how social desirability bias might impact responses to survey questions, they can try to lessen it by assuring confidentiality (and anonymity, if possible), allowing respondents to complete their surveys in private and return them in sealed envelopes, and telling respondents that they can skip any question they do not want to answer.

Survey researchers can also mitigate some of the effects of social desirability bias by thoughtfully constructing their survey. For example, asking multiple questions to measure a single topic (e.g., asking about family dynamics with a set of questions instead of just one question) gives more datapoints from which to assess the topic. In another strategy, researchers who ask teenagers about their use of various drugs might include a drug with a fake name to see if respondents simply want to look cool rather than accurately answer the questions. If a respondent says they've taken the fake drug, then the respondent's other answers on that set of questions might be discarded before

analysis. A similar tactic would be to discard unrealistic responses such as someone indicating that they commit 100 crimes every day.

Recall bias

Chapter 12 mentioned the idea of recall bias as a weakness of interviews. In this type of bias, respondents may not fully or accurately remember past events or their own motivations or behaviors in relation to those events. You might experience recall bias when someone asks about your weekend. Even if it's Monday, when someone says, "How was your weekend?" or "What did you do this weekend?" you might not be able to answer the question. After some thought, you can probably bring back the memory, but you might not remember every detail, emotion, or motivation behind your actions over the weekend. What if someone asks you about some event last month, last year, or even years ago? How likely is it that you'd remember the event in detail?

The same issue with remembering events happens in survey research. For example, if a survey asks respondents to note how often they used alcohol and drugs during high school or even just a few weeks ago, they might not remember exactly how often they engaged in those behaviors in the past. Sometimes, researchers can somewhat mitigate recall bias by anchoring respondents' memories in specific events as they happened. For example, a survey might ask respondents to think about an occasion when they drank alcohol while in high school, and report on specific aspects of that event. Then, the survey could ask respondents to estimate how often those kinds of specifics occurred throughout their years in high school. While not a perfect solution, this kind of anchoring can help mitigate some of the concerns with recall bias.

Designing effective questions and questionnaires

At some point, a researcher must write survey questions and create the questionnaire that they will send to potential respondents. While it may seem easy to create a bunch of questions and send them out, survey construction involves very careful and thoughtful planning to mitigate potential biases in the research and ensure that respondents can read, understand, and respond to the survey questions in a meaningful way. Some decisions that researchers must make at this stage include the content of questions, as well as their wording, response formats, and sequencing. All these decisions can have important consequences for survey responses.

Question content

Question content refers to the topics of the questions you want to ask in a survey. In other words, the researcher must identify what exactly they want to know. As silly as this sounds, it can be easy to forget to include important questions in a survey. For example, let's say you want to understand how people make the transition out of prison. Perhaps you wish to identify which people were comparatively more or less successful in this transition and which factors contributed to success or lack thereof. To understand which factors shaped successful transitions, you'll need to include questions in your survey about all the possible factors that might contribute. Consulting the literature on the topic will help as will brainstorming on your own and to talking with others about what they think may be important in the transition out of prison. Time or space limitations won't allow you to include every single item you've come up with, so you'll also need to think about ranking your questions so that you can be sure to include those that seem most important.

Although including questions on all important topics makes sense, researchers also don't want to include every possible question that they can think of because this places an unnecessary burden on survey respondents. Survey researchers have asked respondents to give their time and attention to

the survey and to take care in responding to the questions, so asking them to complete an extremely long questionnaire just because the questions sound interested to the researcher can be disrespectful to the respondents.

Question wording

Once a researcher has identified all the topics they'd like to cover in the survey, they need to write the questions. **Question wording** refers to decisions that survey researchers must make about how to write each question. Responses obtained in survey research are very sensitive to the types of questions asked, and poorly framed or ambiguous questions may result in meaningless responses with very little value. For these reasons, survey researchers often use some common rules to evaluate their questions. We'll discuss these below as a set of questions that you would ask about each survey question to ensure the quality of each question.

1. **Is the question clear and understandable?**

Survey questions should be as clear and to the point as possible. This is not the time to show off your creative writing skills; a survey is a technical instrument and should be written in a way that is as direct and succinct as possible. Questions should be stated in a very simple language, preferably in active voice, and without complicated words or jargon that the typical respondent may not understand. As discussed earlier, survey respondents have agreed to give their time and attention to the survey, and the best way to show appreciation for their time is to not waste it. Ensuring that questions are clear and not overly wordy goes a long way toward showing respondents the gratitude they deserve.

2. **Is the question worded negatively?**

Negatively worded questions tend to confuse respondents and can lead to inaccurate responses. For example, a question such as "Should the police department not wear body cameras?" is confusing and may frustrate respondents as they must do the mental gymnastics required to accurately answer the question. Survey researchers must avoid these types of questions, as well as questions that include double negatives. For example, what if a question asked, "Did you not drink during high school?" A response of "no" would mean that the respondent did drink because they did not not drink. Did you have to read that last sentence twice to see the logic? Imagine if you had to answer these kinds of questions on a survey; your brain would quickly tire of all the deciphering and you'd likely end up not finishing the survey. In general, avoiding negative terms in the question wording helps increase respondents' understanding.

3. **Is the question ambiguous?**

Survey questions should not include words or expressions that may be interpreted differently by different respondents. For instance, if a question asks respondents to report their annual income, it must be clear whether the question is referring to salary/wages, or also dividend, rental, and other income, as well as whether it's asking for individual income, family income, or personal and business income. Different interpretation by different respondents will lead to incomparable responses that cannot be accurately analyzed.

Sometimes, regionally or culturally specific phrases can also be ambiguous, especially to respondents outside of the region or culture that uses the phrase. For example, when I moved from Florida to Colorado as a teenager, people used the word "pop" to refer to all types of soda. In the south, we'd always used the term "Coke" to refer to any variety of soda. So, imagine the confusion that could ensue from a question asking about consumption of Coke in

a region where "Coke" simply means Coca-Cola. The results from that survey question would mean different things in different regions, which would provide data of little value to a researcher interested in people's consumption of all different types of soda.

4. Is the question double-barreled?

Double-barreled questions are those that ask multiple questions as though they are a single question. This can be very confusing and frustrating for survey respondents. For example, consider how a respondent might answer the following question: "How well do you think the police are doing at protecting and serving the people in your neighborhood?" What if they thought the police were doing a good job protecting people in the neighborhood but not serving them? Or what if they thought the police were doing a good job serving people in the neighborhood but not protecting them? This is a double-barreled question because it's really asking two separate questions: 1) how well do you think the police are doing at protecting your neighborhood, and 2) how well do you think the police are doing at serving your neighborhood? Because the original question combines protecting and serving, it's a double-barreled question.

5. Is the question too general or too specific?

There's a fine line between being too general and too specific in question wording. Questions that are too general may not accurately convey respondents' perceptions. If a researcher asked someone how they liked a particular program and provided a set of responses ranging from "not at all" to "extremely well," it would be unclear what the responses mean. Instead, asking more specific behavioral questions, such as would they recommend this program to others, or do you plan to enroll in other programs offered by the same group can better assess people's perceptions of the program. Likewise, instead of asking how big a

respondents' neighborhood is, a researcher could ask how many live on the respondent's block or street.

Questions that are too specific may be unnecessarily detailed and serve no specific research purpose. For example, if a researcher is interested in annual household income, asking a respondent to report the adjusted gross income on their last tax return may be too specific unless it serves a particular purpose for the research goals. Generally, asking respondents to estimate their annual household income or choose from a range of possible income options would be sufficient for the purposes of gathering basic demographic information. At the same time, if a researcher thinks the detailed data might be important for the study, then they should err on the side of too much detail rather than not enough.

Response formats

Response options are the answers that you provide to the people taking your survey. Providing respondents with unambiguous response options is an important part of designing effective survey questions. Generally, surveys ask respondents to choose a single (or best) response to each question, though in some cases respondents are asked to choose multiple response options.

Offering response options assumes that your questions will be **closed-ended** questions. In a quantitative written survey, chances are good that most if not all the questions will be closed ended. This means that the researcher provides respondents with a limited set of options for their responses. When writing an effective closed-ended question, researchers must follow a few guidelines. First, the response options must be **mutually exclusive**. In other words, the categories must not overlap. For example, if a question asks a respondent to report how many times they've interacted with the police in the past year and provides the options of 1-3 times, 3-5 times, and 5-7 times, what

category would a person choose if they'd interacted with the police 3 or 5 times? To ensure that the options are mutually exclusive, the researcher could rewrite the response options to be 1-3 times, 4-6 times, and 7-9 times. To be sure that respondents can answer accurately, the categories provided must not overlap.

You might have noticed another problem with the response options presented above. What if a person had interacted with the police 0 times or 10 times? These options aren't provided, so what option would they choose? This points to another guideline: response options must be **exhaustive**. In other words, the set of responses provided must cover every possible response. In the example above, the researcher could add categories for 0 times and more than 7 times to make the list exhaustive.

Another consideration for response options involves the number and type of options, also called **levels of measurement**. Researchers can choose between three levels of measurement, including nominal, ordinal, or interval/ratio response options. With **nominal response options**, the survey question presents two or more two options that have no inherent order. **Dichotomous response options** (a type of nominal level of measurement) are those in which a respondent must choose one of two possible choices such as yes/no or agree/disagree. For example, the question, "Do you think that the death penalty is justified under some circumstances (circle one): yes / no" is dichotomous because there are only two answer choices given. Nominal level response options can also involve more than two answer choices. For example, the question, "What is your industry of employment: manufacturing / consumer services / retail / education / healthcare / tourism & hospitality / other" presents nominal response options because there are more than two categories, and they have no inherent order.

By contrast, **ordinal response options** present more than two options that can be ordered. For example, the question "What is your highest level of education (choose one): some high school / high school diploma or GED / some college, no degree / associate's degree / bachelor's degree / some graduate school / graduate degree" has more than two options, and those options can be ordered (from least to most education).

Interval/ratio response options involve options for which respondents enter a number as their answer. For example, asking for a respondent's age and providing a blank space for them to write in their answer would be an interval/ratio response option.

Thus far, we've discussed response formats for closed-ended questions. Sometimes survey researchers include open-ended questions in their questionnaires to gather additional information from respondents. An **open-ended question** does not include response options; instead, respondents are asked to reply to the question in their own way, using their own words. Survey researchers use these questions to find out more about a survey participant's experiences or feelings about whatever they are being asked to report in the survey. For example, our policing survey included an open-ended question at the end that asked respondents to provide any other details about their perceptions of or experiences with the police that they would like the researchers to know. Allowing participants to share some of their responses in their own words can make the experience of completing the survey more satisfying to respondents and can also reveal new motivations or explanations that had not occurred to the researcher.

Question sequencing

In addition to constructing quality questions and posing clear response options, researchers must also think about how to present their written

questions and response options to respondents. One of the first steps after writing survey questions is to group the questions thematically. In the example of the transition from prison, perhaps we'd have a few questions asking about daily routines, others focused on support systems, and still others on exercise and eating habits. Those may be the themes around which we organize our questions. Or perhaps it would make more sense to present questions about pre-prison life and habits and then present a series of questions about life after prison. There's no one way to organize the questions, but researchers must deliberately choose an order that makes sense given the goals of the research.

Once a researcher has grouped similar questions together, the next consideration is the order in which to present the question groups. In general, questions should flow logically from one to the next, with the least sensitive questions leading into the most sensitive, the factual and behavioral leading into to the attitudinal, and from the more general to the more specific. Some researchers disagree on where to put demographic questions such as those about a person's age, gender, and race. On one hand, placing them at the beginning of the questionnaire may lead respondents to think the survey is boring, unimportant, and not something they want to bother completing. However, if the survey deals with some very sensitive or difficult topic, such as child sexual abuse or other criminal activity, you don't want to scare away respondents or shock them by beginning with the most intrusive questions. Some other general rules for question sequencing include starting with a closed-ended question, asking questions in chronological order if they relate to a sequence of events, and asking about one topic at a time rather than switching between topics with every question.

In the end, the order in which a researcher presents survey questions depends on the unique characteristics of the research. Only the researcher, hopefully in consultation with people willing to provide feedback, can determine

how best to order the questions. To do so, the researcher might consider the unique characteristics of the topic, the questions, and most importantly, the sample. Keeping in mind the characteristics and needs of the people being asked to complete the survey can help guide decisions about the most appropriate order in which to present the survey questions.

When researchers think they have a good questionnaire ready for respondents, they often pretest the survey before sending it out. **Pretesting** refers to the process of having a few people take the survey as if they were real respondents to identify any issues with the question content, wording, response options, or sequencing. While pretesting can be expensive and time consuming if a researcher recruits a large sample of pre-testers, but simply pretesting with a small group of colleagues or friends can result in a vastly improved questionnaire. By pretesting a questionnaire, researchers can find out how understandable the questions are, get feedback on question wording and order, and learn whether any of the questions are unintentionally boring or offensive. The researcher can also ask pre-testers to keep track of how long it takes them to complete the survey, which provides valuable information on whether the researcher needs to cut some questions and what they should tell respondents about how long they should expect to spend completing the survey. In general, surveys should take no longer than 10-15 minutes to complete. Any longer and respondents may be more likely to refuse to participate, or they may not complete the entire questionnaire.

In sum, designing effective questions and questionnaires requires thoughtful planning that accounts for the goals of the research as well as respect for respondents' time, attention, trust, and confidentiality of personal information. Keeping the survey as short as possible, limiting the questions to only those necessary for the research project, and providing information about the confidentiality of responses, how data will be used (e.g., for academic

research), and how the results will be reported (usually, in the aggregate) will all increase the chances that the researcher gathers quality data and respects their respondents.

Summary

- Unlike interviews, survey research involves the researcher sending questionnaires to potential respondents who then complete the survey on their own.
- Survey research is a quantitative data collection method in which researchers used standardized questionnaires to systematically collect data about people in their sample.
- Researchers use surveys when they want to describe trends or common features of a large group of people, or when they want to quickly gain general information about a population of interest in preparation for a more focused, in-depth study.
- Some of the benefits of survey research include measuring a wide variety of information, collecting data from many people quickly with relatively minimal expense, generalizing to larger populations, and consistency across questions and answers.
- Some of the drawbacks of survey research include not being able to change questions once surveys have been sent out and potentially lower validity of answers compared to more in-depth research methods.
- Two types of surveys are cross-sectional surveys, which are administered at one point in time, and longitudinal surveys, which are administered multiple times. Some types of longitudinal surveys include trend surveys that investigate changes over time in a general population, panel surveys that survey the exact same people at multiple time points, and cohort

surveys in which researchers regularly survey people who fall into certain categories.

- Surveys are usually self-administered and delivered in hard copy format or online.
- Researchers must try to reduce the chances of various types of biases that can arise in survey research. These include non-response, sampling, social desirability, and recall bias.
- Designing effective questions and questionnaires requires careful thought be given to question content, wording, response options, and sequencing.

Key terms

Closed-ended questions
Cohort survey
Cross-sectional survey
Dichotomous options
Exhaustive
Interval/ratio options
Level of measurement
Longitudinal survey
Mutually exclusive
Nominal options
Non-response bias
Open-ended questions
Ordinal options
Panel survey
Pretesting
Question content
Question wording
Recall bias
Response options
Sampling bias
Self-administered questionnaire
Social desirability bias
Survey research
Trend survey

Discussion questions

1. What are some ways that researchers might overcome some of the weaknesses of survey research?
2. Based on a research question you have identified through earlier exercises in this text, write a few closed-ended questions you could ask in

a questionnaire on the topic. Now use the information in this chapter to critique your questions based on the content, wording, and response options.

3. What are some of the reasons a researcher might choose a cross-sectional survey over a longitudinal survey?
4. Give an example of a research question that would best be answered by each type of longitudinal survey (trend, panel, and cohort). How do the research questions have to change for each type of survey?
5. If you were to conduct survey research, would you choose to deliver the questionnaire in hard copy or online? Why?
6. How might each of the four types of bias come about in online survey methods? How would they be different for questionnaires administered in hard copy?
7. If you were to develop a questionnaire based on a research question you have identified through earlier exercises in this text, which topics would you cover in the beginning, middle, and end of your survey? Why would you choose that particular sequence of topics?

Chapter 14

Experiments

Experiments are an excellent data collection strategy for those wishing to observe the consequences of very specific actions or stimuli. Most commonly a quantitative research method, researchers in criminal justice, psychology, and other social science disciplines use experiments to examine a variety of research questions. Even if you never plan to conduct an experiment, understanding what they are and how they are conducted will help you be able to evaluate the experiments you might read about in journal articles or news media. Students in research methods classes tend to use the term experiment to describe all kinds of empirical research projects, but in social scientific research, the term has a unique meaning and should not be used to describe all research methodologies.

Chapter 14 objectives

1. Define experiment.
2. Distinguish true experiments from quasi-experiments.
3. Explain the difference between an experimental group and a control group.
4. Describe types of true experimental designs.
5. Describe types of quasi-experimental designs.
6. Explain the strengths and weaknesses of experiments.

What is an experiment?

An **experiment** is a method of data collection designed to test hypotheses under controlled conditions. Experimental research can be conducted in laboratory or field settings. **Laboratory experiments** are conducted in artificial settings, created by the research team. **Field experiments** are conducted in the real world such as in a real agency or organization. Regardless of where a researcher conducts their experiment, there is some basic terminology common

to all types of experiments. We'll discuss that terminology here, and then focus on different types of experimental designs.

In experimental research, some participants receive an experimental **stimulus** and others receive no such stimulus. Social science researchers use all sorts of experimental stimuli such as short written passages, images, videos, and even sounds or smells. The group of participants who receive the stimulus is called the **experimental group**, and the group of participants who do not receive the stimulus is called the **control group**. Researchers measure the effects of the stimulus by administering surveys or conducting interviews before and after introducing the stimulus to the experimental group. The measurements they take before the stimulus are called **pre-tests**. The measurements they take after the stimulus are called **post-tests**.

Researchers using experimental designs must consider the roles of random selection and random assignment in their experiments. **Random selection** refers to choosing participants using a random sampling technique, which we discussed in chapter 8. After sampling, experimental researchers should aim for random assignment if possible. **Random assignment** is the process of randomly assigning participants to experimental or control groups. This practice increases the chances that experimental and control groups are similar to each other before the researcher administers the stimulus.

Types of experiments

Researchers use a few different types of experimental designs to test their hypotheses. These types of designs can be grouped into "true experiments" and "quasi-experiments." Both types contain some combination of three key features: independent and dependent variables, pre-testing, a stimulus, post-testing, and experimental and control groups. The key difference, as we'll discuss

in more detail below, is that only true experiments use random selection and random assignment to form their experimental and control groups.

True experiments

In general, **true experiments** contain independent and dependent variables, pre-testing and post-testing, and experimental and control groups chosen and assigned using random selection and assignment techniques. Three common types of true experiments include the classic experiment, the Solomon four-group design, and the post-test-only control group design.

In a **classic experiment**, a researcher tests the effect of a stimulus by comparing two groups: one that is exposed to the stimulus (the experimental group) and another that does not receive the stimulus (the control group). In other words, the classic experiment tests the effects of an independent variable on a dependent variable. Because the researcher's interest lies in the effects of an independent variable, they must measure participants on the dependent variable before and after the independent variable (or stimulus) is administered. Thus, pre-testing and post-testing are both important steps in a classic experiment.

Table 14.1 illustrates a classic experimental design. The "R" in front of each group denotes that the researcher assigns participants to groups using random assignment techniques. Group 1 is the experimental group because everyone in the group receives a pre-test, stimulus, and post-test. Group 2 is the control group because everyone in the group receives only the pre-test and the post-test.

Table 14. 1 Classic Experimental Design

	Pre-test	**Stimulus**	**Post-test**
R: Group 1	x	x	x

R: Group 2	x		x

One example of experimental research can be found in Shannon K. McCoy and Brenda Major's (2003) study of people's perceptions of prejudice. In one portion of this study, all participants took a pretest to assess their levels of depression. During the pre-test, the researchers found no significant differences in depression between the experimental and control groups. Participants in the experimental group then read an article suggesting that prejudice against their own racial group is severe and pervasive; participants in the control group read an article suggesting that prejudice against a racial group other than their own is severe and pervasive. Upon measuring depression scores during the post-test period, the researchers discovered that people who had received the experimental stimulus (the article citing prejudice against their own racial group) reported greater depression than those in the control group.

Thus, this research contained all three features of a true experiment: an independent variable (the reading), a dependent variable (depression), pre- and post-tests, and experimental and control groups. It's a classic experiment because it tests the effects of a stimulus (the reading) on an outcome (depression) by using pre-tests and post-tests of one experimental group and one control group.

The Solomon four-group design is a second type of true experiment. As in a classic experiment, the **Solomon four-group design** involves a control and an experimental group. However, the four-group design includes two additional groups: one that receives the stimulus and then takes the post-test, and another that does not receive the stimulus but does take the post-test. Table 14.2 demonstrates the Solomon four-group design. Once again, groups are randomly

assigned. Groups 1 and 2 are the same as in the classic experiment. Group 3 receives the stimulus and post-test, and Group 4 receives only the post-test.

Table 14. 2 Solomon Four-Group Experimental Design

	Pre-test	**Stimulus**	**Post-test**
R: Group 1	x	x	x
R: Group 2	x		x
R: Group 3		x	x
R: Group 4			x

The **post-test-only control group** is also considered a true experimental design even though it lacks any pre-tests. In this design, the researcher randomly assigns participants to experimental and control groups, administers the stimulus, and then measures respondents on the dependent variable. This type of design skips the pre-test phase of the experiment with the assumption that if the researcher has randomly assigned people to experimental and control groups, then no pre-test is necessary. Table 14.3 illustrates the post-test-only control group design.

Table 14. 3 Post-test-only Control Group Experimental Design

	Pre-test	**Stimulus**	**Post-test**
R: Group 1		x	x
R: Group 2			x

Notice that neither group receives the pre-test. Group 1 (the experimental group) receives the stimulus and the post-test, and Group 2 (the control group) receives only the post-test.

Quasi-experiments

Quasi-experimental designs are almost identical to true experimental designs, but they lack the key ingredient of random assignment. Lack of funding, time constraints, and/or limitations of the research topic or question may all constrain researchers' ability to randomly select and assign participants into groups. For instance, when a colleague and I wanted to test the effects of a curriculum change in a local police training program, organizational constraints meant that we could not randomly assign students to experimental and control groups. Instead, we chose entire training cohorts to receive the new curriculum, and then compared their post-test results to those of other cohorts that had received the traditional curriculum.

The lack of random assignment increases the chances that the experimental and control groups will be **non-equivalent groups**, or groups that have important differences that might impact the findings of the study. For example, in our study of the effectiveness of a curriculum change, the cohorts that we chose might have had more prior knowledge in the area of the curriculum we were testing than the control groups. While non-equivalence introduces a variety of potential issues with experimental studies, sometimes researchers have no choice but to use a quasi-experimental design.

Many true experimental designs can be converted to quasi-experimental designs by omitting random assignment. For instance, the quasi-equivalent version of a classic experiment is called a **non-equivalent groups design**. Table 14.4 illustrates a non-equivalent groups design. If you compare this design to that depicted in Table 14.1, you'll see only one difference: the "R" before the groups has been changed to an "N." This change signifies non-random assignment of groups. Apart from that different, everything else remains the same in that both groups receive the pre-test and post-test, and Group 1 (the experimental group) receives the stimulus between the two testing periods.

Table 14. 4 Non-equivalent Groups Design

	Pre-test	**Stimulus**	**Post-test**
N: Group 1	x	x	x
N: Group 2	x		x

Another type of quasi-experiment is a version of the post-test-only control group design discussed earlier. In the **post-test-only non-equivalent groups design**, the researcher administers a stimulus to the experimental group, and then uses post-tests of the experimental and control groups to measure the effects of the stimulus.

Table 14.5 illustrates this type of experimental design. If you compare this table to Table 14.3, you'll see that once again the only difference is the "N" before the groups, indicating non-random assignment.

Table 14. 5 Post-test-only Non-equivalent Groups Design

	Pre-test	**Stimulus**	**Post-test**
N: Group 1		x	x
N: Group 2			x

This is the type of quasi-experimental design that we used in our research on the effects of a curriculum change in police training: We exposed a few cohorts to the new curriculum, obtained post-test results, and then compared those results to other cohorts that had not received the new curriculum. Because we did not randomly assign participants to groups, it was a quasi-experimental design.

Strengths and weaknesses of experimental research

As with other research methods, experiments have strengths and weaknesses that researchers must consider while designing experimental research. One strength of experiments, particularly laboratory experiments is that the researcher has substantial control over the conditions to which participants are subjected. Experiments are also generally easier to replicate than studies that use other methods of data collection. Such replication is essential for determining whether the findings of an experiment hold true across other people and groups.

For social scientists, experiments also have the drawback of being rather artificial. While this is especially true for laboratory experiments, even field experiments do not fully reflect the real world. A drawback specific to field experiments is that the researcher has less control over the stimulus and other conditions that might impact participants' behavior. When the conditions of an experiment don't match those of the world outside of the boundaries of the experiment, researchers run into problems with the generalizability of their findings. For example, in the case of the research study mentioned earlier about prejudice, can we say for certain that the stimulus applied to the experimental group resembles the stimuli that people are likely to encounter in their real lives outside of the lab? Will reading an article on prejudice against one's race in a lab have the same impact that it would outside of the lab? Asking these kinds of questions doesn't mean that experimental research cannot be valid, but experimental researchers must always recognize and address issues of generalizability that can occur with experiments.

Another potential concern with experiments deals with how confident a researcher can be that the stimulus rather than some other factor produced the observed effect. Other factors that might create an observed effect could be

other conditions of the experiment that the researcher had not considered or changes in participants over time.

In sum, the strengths and weaknesses of experimental research designs include researchers' control over conditions and ease of replication by other researchers. Some of the weaknesses of this method include the artificiality of the setting and/or stimulus and issues with generalizability and confidence that the stimulus produced the outcome. Table 14.6 summarizes the strengths and weaknesses of experimental research design.

Table 14. 6 Strengths and Weaknesses of Experimental Research

Strengths	Weaknesses
Researcher controls conditions	Artificiality of the setting or stimulus
Easier to replicate than other methods	May lack generalizability
	Unclear whether stimulus or some other factor caused the outcome

Summary

- Experiments are quantitative data collection methods designed to test hypotheses under controlled conditions. All experiments involve some combination of independent and dependent variables, pre-tests, a stimulus, post-tests, and experimental and control groups.
- In true experiments, researchers randomly select people for their sample and randomly assign participants to experimental and control groups. In quasi-experiments researchers do not use random selection or assignment to choose participants and assign them to groups.

- An experimental group is a group that receives some type of stimulus or treatment. A control group is a group that does not receive a stimulus or treatment.
- Some types of true experiments include the classic experiment, the Solomon four-group design, and the post-test-only control group design. Quasi-experimental designs include non-equivalent groups design and the post-test-only non-equivalent groups design.
- The benefits of experimental research methods include the ability to control conditions to test hypotheses and the ease with which other researchers can replicate the research. The drawbacks include the artificiality of the setting or stimulus, a potential lack of generalizability, and uncertainty about whether the stimulus rather than some other factor caused the outcome.

Key terms

Classic experiment
Control group
Experiment
Experimental group
Field experiment
Laboratory experiment
Non-equivalent groups
Non-equivalent groups design
Post-tests
Post-test-only non-equivalent groups design
Pre-tests
Quasi-experiment
Random assignment
Random selection
Solomon four-group design
Stimulus
True experiments

Discussion questions

1. Why might a researcher need to use a quasi-experimental design rather than a true experiment? What are some of the downsides to quasi-

experimental designs that would not be present in a true experimental design?

2. Compare and contrast the main features of the three different types of true experimental designs covered in this chapter. How are the three types similar and different? Why do you think there are so many types of true experimental designs?
3. What are some ways that researchers might overcome some of the weaknesses of survey research?

Work cited in chapter 14

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Chapter 15

Quantitative data analysis

Chapter 15 objectives

1. Explain how to prepare quantitative data for analysis.
2. Describe the features of a codebook for quantitative analysis.
3. Distinguish between descriptive and inferential analysis.
4. Define univariate, bivariate, and multivariate analysis.
5. Interpret a frequency distribution.
6. Describe and explain when to use each of the measures of central tendency.
7. Interpret a contingency table.

As we discussed in chapter 6, quantitative data consist of numbers that require statistical analysis strategies. This chapter focuses on some basic statistical techniques for analyzing the various kinds of data that quantitative methods such as interviews, surveys, and experiments tend to generate. Through this discussion, you'll also learn a bit more about the details of how researchers go about conducting quantitative research studies.

Overview of quantitative data analysis

As with qualitative analysis, the overall goal of quantitative data analysis is to reach some conclusions by condensing large amounts of data into relatively smaller, more manageable bits of understandable information. Quantitative methods tend to generate a relatively standardized set of data that are usually stored as spreadsheets on a computer. In quantitative interviews and online surveys, the spreadsheets contain numbers indicating which respondents chose which answers to each question in the interview or survey. In hard copy surveys, the researcher ends up with stacks of paper surveys with answers to be entered into a computer for analysis. Data from experiments tend to be in the form of pre- and post-test surveys that respondents have answered

on a computer or on paper. Regardless of which forms of quantitative data the researcher ends up with, they must be prepared for statistical analysis.

As discussed in chapter 6, most quantitative studies rely on positivist, deductive approaches based on testing existing theories. Therefore, this chapter focuses on analyzing quantitative data from a theory-testing perspective. In this type of research, quantitative data analysis entails preparing the data for analysis and using statistical techniques to test hypotheses related to the research question.

Preparing quantitative data for analysis

The first step in preparing quantitative data for analysis is often getting the data into a computer program that the researcher can use for statistical analysis. If the data come in as electronic information already entered into the system by respondents, then the preparation phase is much less time-consuming. This section starts with what happens when a researcher has amassed stacks of paper questionnaires because once the questionnaires have been entered into the computer, the data preparation process looks the same for data that originally came in on paper as it does for data that came in electronically.

Figure 15.1 shows a snapshot of one set of questions on the hard copy questionnaire of our policing survey. The figure shows that respondents chose one of four answer options for each of three questions about their interactions with the police in the past year. You might notice that there are no numbers included in any of the answer choices.

The first set of questions asks about your experiences and contacts with the police in your neighborhood. For each question please choose the **ONE** answer that best reflects your experiences.

1. In the last year, how often have you:

	Never	Once	Twice	Three or more times
a. Called 911 to get help from police in your neighborhood?				
b. Reported a possible crime to your local police (other than through 911)?				
c. Contacted the police to talk about a neighborhood problem or to get information?				

Figure 15.1 Policing Survey Question 1 as Presented on the Questionnaire

Without numbers, how can a researcher statistically analyze the responses to these questions? As this example indicates, once a researcher has a stack of completed questionnaires, they must first condense the data into information represented by numbers. To do this, the researcher starts by creating a **codebook**, or a document that outlines how a researcher has translated their data from words into numbers.

Table 15.1 shows the section of the codebook indicating how we translated the answers from the questions in Figure 15.1 into numbers. Each row of the table relates to one question, with columns for variable names, the full text of the question, and the numbers we assigned to each answer option. The shortened variable name aids the process of data entry and provides an easy-to-read name for each question. While the answer choices on the original questionnaire had no numbers attached to them, the codebook indicates the numbers we chose to represent each answer choice. A researcher can assign whatever numbers they want to answer choices, but common practice is to start with 0 or 1 and move up from there by increments of 1. In the example in Table

15.1, we chose to start with 0 because logically, 0 means the event never happened. While consistency between the text and the number of the answer choice is not required, it can help later when the researcher is reading statistical results.

Table 15.1 Example Codebook Section from Policing Survey

Variable name	**Question**	**Answer choices**
Call911	In the last year, how often have you called 911 to get help from police in your neighborhood?	0 = Never 1 = Once 2 = Twice 3 = Three or more
Reptcrime	In the last year, how often have you reported a possible crime to your local police (other than through 911)?	0 = Never 1 = Once 2 = Twice 3 = Three or more
Contpol	Contacted the police to talk about a neighborhood problem or to get information?	0 = Never 1 = Once 2 = Twice 3 = Three or more

In preparing data for entry into the computer, the researcher's codebook must include every piece of information on the paper questionnaire. Every question and every answer choice must be represented in the codebook.

Once the codebook has been created, the researcher (and their assistants if they're lucky enough to have them) must enter the information from every paper questionnaire into a spreadsheet or data analysis program. This tedious and time-consuming process is one reason that researchers might opt to administer their survey online; if respondents have entered their answers directly into the computer, then the researcher can simply download the data and import it already coded into a computer program. In this case, the researcher will have created the codebook before administering the survey so

that every question has a variable name and every answer has a number attached to it when the respondents begin taking the survey online.

Manual data entry usually requires creating a spreadsheet in which each row represents one questionnaire and each column represents a different variable (as specified by the shortened variable name explained above). Generally, the first column in the spreadsheet will be a number that identifies the questionnaire (e.g., 001, 002, etc.) so that the researcher can revisit the hard copy if necessary. These data are entered into commonly used spreadsheet programs such as Excel or a specialized data analysis program such as SPSS (Statistical Package for the Social Sciences (http://www.spss.com)). SPSS is a statistical analysis computer program designed to analyze just the sort of data quantitative survey researchers collect. It can perform everything from very basic descriptive statistical analysis to more complex inferential statistical analysis. Most statistical programs including SPSS provide a data editor for entering data. However, these programs store data in their own native format (e.g., SPSS stores data as .sav files), which makes it difficult to share the data with other statistical programs and other researchers who use different programs. Hence, researchers often enter data into a spreadsheet or database, where the information can be shared across programs and reorganized and extracted as needed Smaller data sets with less than 65,000 observations and 256 items can be stored in a spreadsheet such as Excel, while larger datasets require a database program.

Researchers who must enter their data manually have to be very careful to enter the data exactly as shown in each questionnaire or else the results of the analysis will be based on flawed data. Thus, researchers must build in time for double-checking (and sometimes triple-checking) their data. In the policing survey, we had a handful of student assistants entering data. After all of the questionnaires had been entered into the system, we chose a random sample of

roughly one-third of the questionnaires to check for inconsistencies between the paper questionnaires and the data entered into the system. Unfortunately, we found quite a few errors, which led us to recheck all 391 questionnaires. Then, just to be sure, we spot-checked another one-third of questionnaires with the improved dataset and found no errors. While this process took more time than anticipated, the result was a dataset that we knew accurately represented what respondents had reported on the survey.

One issue that researchers come across when entering data is that some respondents skip questions either on purpose or inadvertently. When entering data, these skipped questions become **missing data**, or questions on which a respondent has not provided an answer. During data entry, some statistical programs automatically treat blank entries as missing values, while others require entering a specific numeric value such as -9 or 999 to denote a missing value. Later, the researcher will need to determine how to handle the missing data during analysis.

Statistically analyzing quantitative data

Quantitative data analysis focuses on using statistical techniques to identify, describe, and explain patterns found in the data. Numeric data collected in a research project can be analyzed quantitatively using statistical tools in two different ways. **Descriptive analysis** refers to statistically describing, aggregating, and presenting the information about variables in the study. **Inferential analysis** refers to the statistical testing of hypotheses (theory-testing) to see if results from the sample can be generalized to a larger population. There are many more statistical techniques than we could possibly cover in one chapter of a textbook. Because this is a research methods textbook, we'll focus on descriptive statistics, which can help you get started in analyzing quantitative data, and we'll save inferential statistics for your statistics courses.

Univariate analysis

To start, researchers conduct **univariate analysis**, a basic statistical analysis that shows common responses and patterns across answers in one variable. (Remember how in the data preparation stage, the researcher assigned each question a variable name? That comes in very handy here as we start to think and talk about questions as variables rather than survey questions.)

Univariate analysis includes frequency distributions and measures of central tendency. A **frequency distribution** is a way of summarizing the distribution of responses to a single survey question. Figure 15.2 shows a snapshot of a frequency distribution for the variable "call911" described in the example codebook entries above. I created this distribution using SPSS; other programs might produce frequency distributions that look a little different, but they all contain the same basic elements, including a list of response options (the first column) and the number and/or percentage of respondents who chose each option (the other columns).

Q7. In the last year have you: – a. Called 911 to get help from police in your neighborhood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	273	69.8	71.1	71.1
	Once	63	16.1	16.4	87.5
	Twice	27	6.9	7.0	94.5
	Three or more times	21	5.4	5.5	100.0
	Total	384	98.2	100.0	
Missing	System	7	1.8		
Total		391	100.0		

Figure 15.2 Univariate Frequency Distribution

In Figure 15.2, all response options are listed in the first column along with row labels for the total number of respondents who answered the question

(in this case, 384), the number who didn't answer the question (7), and the overall total number of respondents (391). The "Frequency" column reports the number of respondents who answered in each response category. The "Percent" column shows the percent of respondents who answered in each category, and the "Valid Percent" column excludes respondents who didn't answer the question to calculate the percent of respondents who chose each answer category. "Cumulative Percent" refers to the percent of respondents in each row plus all the percentages in the rows above that row.

The frequency distribution on calling 911 in the past year shows the distribution of responses to the question in the survey. For example, we learn from this frequency distribution that most respondents (273 out of 391 people, or 69.8%) had not called 911 in the year prior to the survey. We also learn that "Three or more times" was the least popular choice, with only 21 people or 5.4% of respondents saying they'd called 911 that many times in the year prior to the survey. You might also notice that the frequency distribution reports the answer options as categories instead of the numbers we assigned using our codebook. This is because

In addition to helping researchers describe their data, frequency distributions can be useful in helping researchers clean their data. For example, the codebook for call911 indicates that the response options should range from 0 to 3, or Never to Three or More Times. If a frequency distribution for the variable also included a row with "4" as the label, then we'd know that something had gone wrong with either the data entry (the most likely) or respondents' answers (not likely in this case, but it does happen that sometimes respondents write in their own answers even when they're asked to choose among a set of response options). In either case, the researcher would need to find that entry in the dataset and match it to the original questionnaire to figure out how to handle that response in the dataset. Running frequency distributions

for every variable is an excellent way to gauge the quality of your data before conducting more complex statistical analyses.

Another form of univariate analysis that survey researchers conduct using single variables is measures of central tendency. **Measures of central tendency** tell us the most common, or average, response to a question using three measures: modes, medians, and means. The level of measurement (see chapter 13) determines which measures of central tendency a researcher should use for each variable. For example, the **mode** indicates the most common response to a question, and it's appropriate for all levels of measurement. A frequency distribution can show us the mode. For example, in Figure 15.2, most respondents reported never having called 911 in the previous year. This indicates that the modal response was 0 or "Never."

The **median** is the midpoint of a distribution where half of the respondents fall on either side. Figure 15.3 illustrates one way to think about the median. In the picture, the two children are balanced on a central triangle, which indicates equal weight on each side of the seesaw.

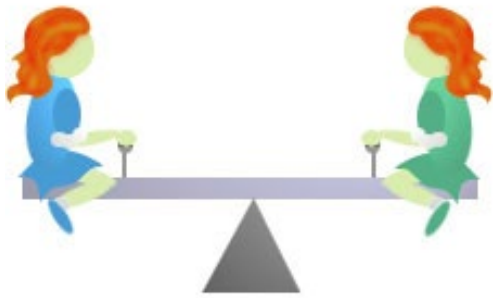

Figure 15.3 Illustration of a Median

The triangle in the center is similar to the median: half of respondents would fall on the left of the triangle and half on the right to balance the seesaw. In statistical terms, 50% of responses fall on either side of the median.

The median is most appropriate for ordinal- and interval/ratio-level variables. To calculate the median, we list all responses in order and then choose the middle response. To find the middle point, divide the number of valid cases by two. In Figure 15.2, the number of valid cases (384) divided by 2 is 192, so we'd look in our list for the 192nd value in our distribution. That number would be our median. Luckily, we don't have to list all 384 answers to find the median. As with the mode, we can use a frequency distribution to identify the median as long as the distribution includes percentages and is ordered by numerical category. For example, Figure 15.2 presents the response options in numerical order from 0 (Never) to 3 (Three or more times), and it includes the percent of respondents who answered in each category. With these elements in place, we can then start at the top with the "Never" row and add up the values in the "Percent" column until the total percent tips over 50%. In this case, the first answer choice (Never) contains almost 70% of the answers. Seventy percent is over 50%, so we know that the midpoint of the distribution (the median) is 0 or "Never." The cumulative percent column also shows us the median by adding the percentages for us.

The third measure of central tendency, the mean, is what many people think of when they think of an average. The **mean** is the added value of all responses on a variable divided by the total number of responses. It is only appropriate for interval/ratio level variables. Because the variable we have been working with in this section is an ordinal level variable, we would be mistaken if we calculated and reported a mean. Researchers must be careful when using computer programs to calculate statistical information because these programs will calculate and return results for all measures of central tendency regardless of the type of variable. For example, when I asked SPSS to calculate a mean for the "call911" variable, it did return a result. However, knowing that the mean is not an appropriate measure of central tendency for an ordinal level variable, I

would not interpret or report that result. In other words, computer programs are helpful calculators, but researchers have to decide when to use certain statistics. A researcher must be able to distinguish between the appropriate statistical analyses and tests for their variables.

Bivariate and multivariate analysis

Researchers can learn a lot about their respondents by conducting univariate analysis of their data. They can learn even more when they begin to examine relationships among variables. Either we can analyze the relationships between two variables, called **bivariate analysis**, or we can examine relationships among more than two variables. This latter type of analysis is known as **multivariate analysis**.

Bivariate analysis allows us to assess **covariation** among two variables. This means we can find out whether changes in one variable occur together with changes in another. If two variables do not covary, they are said to have **independence**, which means that there is no relationship between the two variables in question. To learn whether a relationship exists between two variables, a researcher may cross-tabulate the two variables and present their relationship in a contingency table. A **contingency table** shows how variation on one variable may be contingent upon variation on the other. Figure 15.4 shows a snapshot of a contingency table I created using SPSS. The figure shows a cross-tabulation of two questions from the policing survey: the question about calling 911 in the past year and the respondent's gender. (As a side note, respondents could choose "Other" as a third option under gender, but only two respondents did so which means that we can't use their responses for statistical analysis of differences between gender.)

Q7. In the last year have you: - a. Called 911 to get help from police in your neighborhood * Gender Crosstabulation

% within Gender

		Gender		
		Woman	Man	Total
Q7. In the last year have you: - a. Called 911 to get help from police in your neighborhood	Never	68.4%	74.5%	71.2%
	Once	20.9%	11.5%	16.7%
	Twice	4.9%	9.7%	7.0%
	Three or more times	5.8%	4.2%	5.1%
Total		100.0%	100.0%	100.0%

Figure 15.4 Bivariate Contingency Table

In this contingency table, we can see the variable "gender" in the table's columns and "call911" in its rows. Typically, values that are contingent on other values are placed in rows (a.k.a. dependent variables), while independent variables are placed in columns. This makes comparing across categories of our independent variable pretty simple. For example, reading across the top row of the table, we can see that 68.4% of women reported that they had never called 911 in the past year while almost 75% of men reported the same outcome. This result indicates that there may be some differences between how often men and women call the police. Researchers would use more advanced statistical techniques to test whether the differences seen in our contingency table can be generalized to a larger population or if the differences are simply a result of some feature of our sample. We won't cover those tests in this text, but you'd learn more about them in a statistics class.

Researchers interested in simultaneously analyzing relationships among more than two variables conduct multivariate analysis. If I hypothesized that the number of times someone calls 911 declines for men as they age but increases for women as they age, I might consider adding age to the preceding analysis. To

do so would require multivariate, rather than bivariate, analysis. We won't go into detail here about how to conduct multivariate analysis of quantitative data, but if you're interested in learning more about these types of analyses you might consider enrolling in a statistics class. Even if you don't aspire to become a researcher, the quantitative data analysis skills you'd develop in a statistics class could serve you quite well in many different types of careers.

Summary

- Preparing quantitative data for analysis entails creating a codebook, and then using that codebook to enter information from hard copy questionnaires into a computer program. The data entry process also requires conducting quality checks to ensure that the final dataset accurately reflects the hard copy data.
- Codebooks for quantitative data include a variable name, the full text of the question as presented to respondents, and the numbers assigned to each answer option.
- Descriptive analysis involves statistical techniques that help the researcher describe and present information about the variables in the study. Inferential analysis involves statistical techniques that help the researcher test hypotheses to see if sample results can be generalized to a broader population.
- Univariate analysis focuses on one variable; bivariate analysis focuses on two variables; multivariate analysis focuses on more than two variables.
- Frequency distributions show the distribution of responses to a single variable. They include a list of response options and the number or percent of respondents who chose each option.
- The mean, median, and mode are all measures of central tendency. The mean is the numerical average of all responses and is used for

interval/ratio level variables. The median is the midpoint of a distribution of responses and is used for ordinal and interval/ratio variables. The mode is the most common response and it used for nominal, ordinal, and interval/ratio variables.

- Contingency tables show how variation on one variable may depend on variation of another. They include response options for one variable (usually the independent variable) in the columns and options for the other variable in the rows. The middle of a contingency table shows the percent of respondents who answered within each combination of response options.

Key terms

Bivariate analysis	Independence	Missing data
Codebook	Inferential analysis	Mode
Contingency table	Mean	Multivariate analysis
Covariation	Measures of central tendency	Univariate analysis
Descriptive analysis	Median	
Frequency distribution		

Discussion questions

1. What challenges might a researcher run into when preparing quantitative data for analysis? How would the challenges be different for online questionnaires versus hard copy questionnaires?
2. Create three closed-ended questions that you might use in an interview, survey, or pre- and post-test during an experiment. Then, develop a codebook for those three questions. How did you decide what to name

your variables? How did you decide what numbers to attach to your answer choices?

3. Pretend that you've asked 100 people to answer the three questions you developed for question 2. Create a frequency distribution based on their hypothetical responses. Then, interpret the numbers in your frequency distribution.
4. Identify the measure(s) of central tendency appropriate for analyzing each variable described in your frequency distribution from question 3. How do you know whether to use the mean, median, or mode for each variable? As a bonus, see if you can calculate the appropriate measure(s) of central tendency for each variable.
5. How do you think the answers to your three questions be different between people under 65 years old and people 65 and older? Create and interpret a contingency table to explain your answer to this question.

Appendix A

Example Informed Consent Form

IRB STUDY #XXXXXXXXXX

WEBER STATE UNIVERSITY INFORMED CONSENT

Title of the Research Study
Barriers and Concerns Related to Health Disparities in the African American Community in Utah

Purpose of the Research Study
The study is based on findings that show health disparities in African American communities compared to other minority groups and Caucasians remains high. This research explores why certain health care facilities and resources remain underutilized. We want to find out about your experiences and opinions. You are being asked to participate in this study because you are of African American descent.

Number of People Taking Part in the Research Study
If you agree to participate, you will be one of 18 subjects who will be participating in this research.

Procedures for the Research Study
If you decide to be in this research study, you will be asked to sign this consent form after you have had all your questions answered and understand what your participation in the study involves. If you agree to participate and you are eligible, you will be part of a discussion (focus) group. The discussion group will last about 60 minutes. The focus group leader will ask you to talk about your experiences and opinions about health care related issues. The focus group will be audio recorded so we are sure to get everyone's ideas. Audio recordings and transcripts of the tapes will remain confidential. They may also remain anonymous if you choose to use a pseudonym (a substitute for your real name) during the discussion group. A brief survey will be handed out after the focus groups to gather some useful demographics. To remain anonymous the participants will use their pseudonyms.

Risks of Taking Part in the Research Study

The risk of participating is that you may feel discomfort when answering personal questions. Your health care information will be discussed openly in a group setting. The moderator of the focus group will be trained to keep the group conversation on track with the questions being asked. There will be no direct questions asked about specific health care problems. The questions will focus more on general experiences and perspectives. You will choose how much information to disclose during the discussion. You will be asked to sign the consent form. After the focus group has concluded, you must agree not to talk about any healthcare information that others might disclose during the focus group.

Benefits of Taking Part in the Research Study
The benefits will be getting your voice heard so that the researchers can better understand the barriers and concerns for African Americans regarding health care. Health care disparities in the African American communities have been consistently growing all throughout the nation and this research study hopes to understand why.

Alternatives to Taking Part in the Research Study
Instead of participating in the study, you may decline to participate in the focus group.

Costs/Compensation for Injury
The cost is about an hour of your time. You will receive an incentive for your participation at the start of the focus group. The compensation will be provided by the Project Success Coalition and will be valued at no more than $25.

Confidentiality
Efforts will be made to keep your personal information confidential. While you may choose to disclose your name during the focus group, the transcripts of audio recordings will use pseudonyms (a substitute for your real name). Even so, we cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published.

Contacts for Questions or Problems
For questions about the study, contact the primary researcher, Dr. Monica Williams at [phone number] or [email address].

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the Chair of the IRB Committee at [IRB email address].

Voluntary Nature of the Research Study
Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with Weber State University or Project Success Coalition.

Consent to Participate
In consideration of all of the above, I give my consent to participate in this research study. If I so desire, I will be given a copy of this informed consent document to keep for my records.

Subject's Printed Name:_____

Subject's Signature:_____

Date:_____

Printed Name of Person Obtaining Consent:_____

Signature of Person Obtaining Consent: _____

Date:_____

Appendix B

Example Qualitative Interview Guide

Community Responses to Violent Sex Offenders
Interview Guide for Residents

I want to assure you that anything you say during this interview is confidential. Any time I report data from my research, I will not reveal your name or any other identifying information. With your consent, I would like to record this interview so that I can have a record of what we've talked about today.

Is it okay with you if I use the recorder?

[Turn on digital recorder if respondent consents.]

Overview of the Community: *What kind of community is this from R's perspective?*

Let's start by talking about your neighborhood in general. What kind of place is it?

[Do you know your **neighbors**? Do people look out for each other? How? How often do you do things with people in the neighborhood? How does your neighborhood compare to others in the surrounding community?]

[What about the **local police?** How do they deal with problems in the area? Example (what kind of problems have you had to deal with in the neighborhood?). Do you think they're sensitive to the needs of the community? Example? Tell me about your last interaction with the police. How did it go/What was it like?]

[What about the **local government** (i.e. board of supervisors, city council)? How sensitive are they to the needs of the community? How well do you think they handle issues that arise in the area? Example?]

How has the neighborhood changed since you've lived here?

What do you like best about your community and neighborhood?

What would you like to see changed about the neighborhood and/or community?

Overview of the Response: *R's understanding of the placement and community response.*

Like I said earlier, I'm particularly interested in a specific issue, the placement of Mr. _____. Let's talk about what happened there. I'd like to get as much detail as you remember, so let's just start at the beginning.

Tell me about how you first heard about Mr. ____. [keep probing for what happened next]

[What did you think? What did you do when you first heard? Did you talk to other people about it? What did they say? What did they do? How did finding out about this make you feel? Did you contact local officials? What did they say or do?]

[What did you think during the community notification meeting? How did it go from your perspective? What happened in the days immediately after the notification meeting? What did you do? What did others do (residents and officials)?]

[After he moved in, what did you think? What were your feelings? What did other people say? What did you do? What did other people do?]

Personal Involvement in the Response: *How did R react to the placement? What did R personally do before, during, and after the placement?*

I want to get a better picture of the protests [or other activities that R mentions being involved in like meetings, etc]. Can you describe the scene to me?

[How many people were out there with you? What about law enforcement and/or local officials? What kinds of things did you do (signs, yelling, etc.)? What kinds of slogans did you chant or have written on signs? Did you personally chant or hold signs? What did you say/what was written on your sign?]

[What was the general feeling when you were there? What kind of mood were you in while you were there? How did that compare to the general mood of the group in general?]

[What kinds of responses did you get from passersby?]

Were there times when you felt you had to take action on your own? Example.

[Why did you feel like you had to act alone? How did you try to get other people involved? What kinds of things did people say in response to your efforts?]

Did you ever talk to anyone who didn't want to get involved? Anyone who wondered why you were doing what you were doing?

How did your involvement in these events change over time?

[Did you devote more/less time to the issue as time went on? Did you do different things in the beginning than you did in the end or vice versa?]

Why did your involvement change?

Purpose and Goals of the Response: *What did R expect would happen? What exactly was R trying to achieve? How did R's goals contrast with others' goals?*

Why did you personally get involved in this issue?

[What were you trying to achieve? What did you expect would happen as a result of your actions? Had you been involved in community events like this in the past?]

Why do you think this became such a big issue in the community?

[What were the general goals of the community's response? In what ways did the community achieve its goals? How did it fail?]

In what ways did you achieve your goals? In what ways did you not realize your goals?

[When did you realize that your goals wouldn't be met? How did that affect your involvement in the issue?]

Creating, Maintaining, and Breaking Down Community: *What does the community look like now and what did it look like before the placement?*

Earlier we talked about what kind of place your neighborhood and community are. Let's talk a bit about how the response to Mr. _____ affected these places.

How did the community's response to Mr. ___ affect your community? [Get positive and negative]

[Do you feel closer now to your **neighbors** than before? Did you meet people you didn't know before? Have you kept in touch with people you worked with more than you used to? Example?]

[Do you feel better or worse about **local law enforcement** now? Why? What did they do that make you feel like this?]

[What about **local officials** like the county supervisors or city council? What's your feeling about them now? Why?]

[What about the general mood and feeling about the community? Do you feel better or worse about it now than before? Why?]

Has the community ever had to deal with similar issues in the past? Can you tell me about that issue?

How did the response then compare to what happened with Mr. ____?

[What was similar? What was different? Compare on level of neighbors, police, officials]

Looking Toward the Future: *R's plans to continue reactions, and what R thinks of the whole issue now.*

Tell me about the most recent time you thought about Mr. _____. What went through your mind? What were your feelings? How much do you think about him now?

Have you done anything recently about Mr. ____?

As far as you know, do others have any plans to continue their response to this sex offender?

[How likely do you think it is that the response to this sex offender will continue in the future?]

If this were to happen again in your community, what do you think you'd do differently next time? What do you think others (neighbors, law enforcement, officials) should do differently?

Demographic Info

- Age
- Race
- Last school level completed
- Family: Married? Children?

- Approximate household income
- How long lived in community?

I appreciate the time you've taken to answer my questions today. If you have any questions, please feel free to call or email me. [Give respondent my business card.]