CHAPTER ONE

Introduction to Communication Research

Chapter Checklist

After reading this chapter, you should be able to:

1. Identify instances in which you could use or conduct communication research as a student, use or conduct communication research as a professional, and use the results of communication research in your personal life.
2. Explain the goals of research.
3. Explain the relationship of research and theory.
4. Explain communication research as a social science.
5. Describe how communication research from a social science perspective is different from other forms of communication research and other forms of social science research.
6. Differentiate among the characteristics of science.
7. Distinguish between a research question and a hypothesis.
8. Describe the differences among questions of fact, variable relations, value, and policy.
9. Identify questions about communication that you believe are worth pursuing.

As a student in a research methods course, you have two roles. In one role, you are a consumer of communication research. You read summaries of research in your textbooks. In some courses, you may be required to read and analyze research articles published in the discipline's journals.

In the other role, you are a researcher collecting and interpreting data to answer research questions and hypotheses. These activities may be part of the course for which you are reading this book, an independent study, an upper-division course, or a capstone project. The information in this book can help you succeed in both roles, and hopefully can help you develop methodological curiosity. But before you identify yourself with either or both roles, turn your attention to answering the question "What is research?"

WHAT IS RESEARCH?

In its most basic form, *research* is the process of asking questions and finding answers. You have likely conducted research of your own, even if it was not in the formal sense. For example, as you chose which college or university to attend, you asked questions of students, faculty, and staff at the various institutions you were considering. You might also have looked on websites for answers to your questions or used the survey results from *U.S. News & World Report* that rank America's colleges and universities. As you made choices about your major, you examined the college website, talked to students and an advisor, and perhaps even talked to professionals in the field you believed you wanted to pursue. In these activities, you sought answers to your questions. Which school is best for me? Which school has the type of student experience I am looking for? Which schools are affordable for my major or degree? What is the annual income of alumni with my major? What kinds of career opportunities can I expect? By asking these questions, you were taking on the role of a researcher as you tracked down the information needed to make a decision.

Not only were you asking questions and seeking answers, but more than likely you were also relying on the results of research conducted by others. It would be impossible for you to answer your set of questions without such input. For example, for the question "What is the annual income of alumni with my major?" it would not be realistic for you to survey graduates in your field to discover their annual income. More likely you relied on a survey conducted by a professional association, an alumni association, or a news organization. You used the reported findings of their research to answer your question. Although someone else did the research, you still needed to evaluate the efficacy of their research to gauge the usefulness of their findings in answering your question.

You are also familiar with other types of research. News reports profile the results of research each day. You have heard the results of medical research reported in the news. During political campaigns, the results of preference polls are reported in the news and archived on news organization websites. And, no doubt, you have heard the results of research on racism and climate change. If you work, your company may have conducted research on the preferences of its customers or the quality of its products.

The point here is that research is all around us, often presented in ways that we would not recognize as research. Thus, **research**, as we will study it, is the discovery of answers to questions through the application of scientific and systematic procedures. Given this basic definition of research, you can see that you probably come into contact with several forms of research on a daily basis. You probably also use the results of research in making both personal and professional decisions.

The specific focus of this text is communication research—that is, quantitative or qualitative research conducted by communication scholars about communication phenomena. The focus is also on research conducted from a social science perspective, which is distinct from rhetorical research and also distinct from critical research. Yet, distinctions among these three perspectives—social science, rhetorical, and critical—are not always clear (Craig, 1993), and scholars working from the other perspectives do use some methods more commonly associated with social science research. As Stanfill (2012) suggests researchers and students should ask three basic questions. These are: "When a scholar conducts research, (a) how do they do it? (b) what do they see themselves as doing?, and (c) why do they do it?" (p. 6).

Social science research is conducted through the use of scientific and systematic methods, and it is based on the assumption that research can uncover patterns in the lives of people. When patterns of communication behavior are confirmed or discovered, scholars develop useful theories of communication that speak to the regularity of communication (Bostrom, 2003).

The research techniques and methods presented in this book are used to study the communication behavior of humans and the communication artifacts that people create. Although some people think of social science research as objective research, communication scholars use both quantitative (more objective) and qualitative (more subjective) methods—sometimes separately and sometimes in combination with one another. Both types of methods are **empirical**, meaning that both methods are based on observations or experiences of communication. Both types are needed because it is unlikely that quantitative or qualitative methods alone can provide complete answers to the many questions we have about communication behavior.

Your Relationship with Research

As discussed earlier, your relationship to this material can be conceptualized in two ways—as that of a researcher or as that of a consumer of research. You may take on the researcher role as a student, as an employee, or as a consultant. It is likely that the class for which you are reading this book will develop and conduct a research project as part of a class assignment. You may also decide that the process of research is interesting enough that you plan to take additional courses in research methodology. You might even decide to become a professor and spend much of your professional time as a researcher, finding answers to questions that interest you and matter to others.

After you graduate, you might find yourself in a professional position where research and data analysis is part of your regularly assigned job responsibilities. Positions in marketing and advertising, as well as jobs in political, organizational, and health communication, are just a few in which research plays a central role in decision making. Even though their organizational title may not be "researcher," many employees at managerial levels are responsible for collecting and analyzing data to help organizations and employees make more effective and efficient decisions. But are these examples of communication research? They could be. Some organizations conduct surveys or focus groups to discover the degree of effectiveness of their internal communication practices. Media organizations regularly use surveys or focus groups to discover if informational, advertising, or promotional messages are being received as intended.

You could become a consultant and conduct **proprietary research**, research that is commissioned by an individual or organization for its own use. Organizations use consultants to evaluate their internal communication systems and operational effectiveness. Political figures also commission proprietary research to discover how they are doing in the polls and which of their messages have the most influence on potential voters. Marketing and advertising research is also proprietary. Even though the results of proprietary research are private and intended only for the use of whoever pays for the research, the researcher uses the same procedures and practices used in conducting scholarly or academic research.

Your relationship with research can also be conceptualized as that of a consumer. You consume the research of others when you read scholarly books and journals. You also consume research when you see or hear personally or professionally interesting information presented in the media, and use information about products and services marketed to you. You might trust some sources more than others—or be more cautious—if you knew how the data were collected and analyzed.

When a class assignment requires that you find, read, and integrate research findings, you are in the consumer role as you collect information in the library or online to complete class assignments. Your ability to evaluate the information you collect has a direct impact on your ability to learn and prepare assignments.

As a researcher, you seek answers to questions by collecting data, and then interpreting results and findings to draw conclusions and make recommendations. As a consumer, you sort through results and findings others have provided. In this role you still need to distinguish good information from bad, test assumptions and conclusions drawn by others, and analyze the extent to which the research process others used fits your needs and situation. In this case, you need the skills to determine if the information you are using is misleading or misinterpreted from its original source.

It is easy to feel overwhelmed or intimidated by the particular vocabulary and traditions of research. But if you approach learning about research as another way to find information, you are likely to discover that formal research is an extension of the types of informal asking and answering of questions that you have done all your life. After reading this chapter, you should be able to identify how research acts as an influence on your life and in your decision making. Throughout the rest of this chapter and throughout this book as well, specific examples of communication research will be

AN ETHICAL ISSUE

Is Communication Public or Private?

In general, what ethical issues do you believe are raised when researchers study the communication behavior of others? About what communication situations would you feel comfortable answering questions? In what situations would you feel comfortable having a researcher observe you? Should some communication contexts remain the private domain of participants, closed to researchers' inquiries? What about intimate communication between significant others in the privacy of their home? What about the communication between parent and child when discipline is required? What about communication that occurs among co-workers as they joke about ways to ridicule their boss? How would you respond if a communication researcher asked you questions about your communication behavior during these events? What arguments could you develop both for and against communication scholars conducting research about such events? Should some communication behaviors or contexts be off limits to communication researchers? Why or why not?

highlighted as we explore how research is conducted—that is, how research is planned and carried out and how data are collected, analyzed, and reported. The goals of this book are to provide you with the basic skills of a researcher and to enhance your ability to be a better critic of the research reported by others.

SCHOLARLY RESEARCH

With this introduction to research in general, we now turn our attention to the formal and systematic method of scholarly research. Researchers, or scientists, who have been trained in research methods and procedures conduct research. These scholars formalize their questions into research questions or hypotheses, which provide the scope and direction of the research project as well as guide the researcher in selecting quantitative or qualitative methods to answer the questions. The questions or hypotheses direct what data the researcher collects. After the data are collected, the researcher or research team analyzes the data to draw conclusions about the hypotheses or answer the research questions. Essentially, conducting research is a matter of making claims based upon data (O'Keefe, 2004). Different types of claims require different types of evidence, or data, which may be quantitative data, qualitative data, or both.

But the process is not complete. Scholarly, or academic, research is also public and available to others. However, the process of making it public is certainly different than it is for research conducted by a polling organization, for instance. Scholarly researchers describe what they have done in a paper that is submitted to a conference for presentation, or to a journal or book for publication. Other experts in the field review the paper. This review serves as a test. Have the authors used an appropriate methodology to answer their questions or hypotheses? Have the authors explained the results thoroughly and logically? Are there critical flaws in the research process that jeopardize the results? The papers that make it through the review process are then presented at a conference or published in an academic journal or book. This is where the results become consumable.

Pick up a text that is assigned reading for one of your other communication courses. You will find many references to research within the chapters. As an example, the following passage is from my text *Communication and Organizational Culture: A Key to Understanding Work Experiences* (Keyton, 2011):

> For organizations such as AT&T, Cisco, and Red Hat, the culture is technologically grounded. That is, "the organization is not simply a culture that uses a technology; instead, it is a culture whose image, identity, and relationship to its environment are strongly associated with—indeed, dependent upon—the functionality of the technology it produces, services, or sells" (Leonardi & Jackson, 2009, p. 397).

The reference to the authors Leonardi and Jackson is called an in-text citation. If you turned to the references

listed at the back of the text, you would find the publication information, so you could look up the 2009 journal article written by these authors. As the author of the text, I relied on the research of Leonardi and Jackson. As the reader of this passage, you are also a consumer and could verify my interpretation of their work by going to the original source.

Goals of Research

Accumulating knowledge through research is a continuous process. One research study cannot answer all the questions about any one issue or topic. This facet of learning—building on the research of others—is central to any academic discipline. Thus, the primary goal of communication research is to describe communication phenomena as well as discover and explain the relationships among them. Continuing with the example just given, discovery occurred when Leonardi and Jackson conducted qualitative research using three types of data to explore the concept of technological grounding.

These scholars first built a case for their study by drawing on the published research of other scholars. Next, they collected data to be able to analyze each organization's culture before the merger and the organizational culture of the merged organization. Finally, they provided an explanation of how one company's organizational culture prevailed after the two companies merged. Thus, research is the process of discovery and explanation.

The research process, if approached systematically, can have one of four results: It allows the researcher to describe behavior, determine causes of behavior, predict behavior, or explain behavior. *Describing behavior* entails describing outcomes, processes, or ways in which variables (another name for the concepts we study) are related to one another. The following example illustrates a research project that enabled a researcher to describe behavior.

Guthrie and Kunkel (2013) analyzed participants' diary entries to answer the research question, "What are the motives for using deception in long-term romantic relationships?" (p. 145). Across 68 participants who kept diaries about the use of deception with their romantic partners, 332 motives for using deception were identified. From the participants' diary entries, the researchers identified six overarching categories for using deception. These were engaging in relational maintenance (e.g., engaging in deception to avoid a fight), managing face needs (e.g., protecting the partner's feelings), negotiating dialectical tensions (e.g., balancing the need for independence vs. togetherness), establishing relational control (e.g., ensuring that the partner behaves as desired), continuing previous deception (e.g., continuing a lie from the past), and motive unknown (e.g., a participant could not identify their motive for using deception). Guthrie and Kunkel (2013) asked a descriptive question; that is, what motives do people give for deceiving their partner? Their coding and analysis of that coding produced five different types of motives for lying. Thus, their results describe why people use untruthful messages in long-term relationships.

Determining the cause or causes of behavior is of interest to communication scholars because knowing the cause of something allows scholars to later plan interventions or develop training to increase the effectiveness of communication. For example, Cowan and Horan (2021) asked this research question: How and why are ICTs (information and communication technologies) used to initiate, maintain, and dissolve workplace romantic relationships? In interviews, the researchers asked participants to tell their story, and then "asked questions relating to ICT use in the (de)escalation of the relationship. If the relationship had terminated, [the researchers] asked questions about this dissolution including if, how, and why ICT was used" (p. 61). After analyzing the interviewee's responses, they found that "privacy was a predominant concern in both the initiation and maintenance stages" of the relationships, and that "technology was used to end many of these relationships including text messages and SNS because they are asynchronous and help both parties avoid more direct communication" (p. 69).

If researchers can describe communication events and identify their causes, then they can turn to *predicting behavior.* If behaviors are predictable, then we can anticipate what will happen in the future. In turn, this knowledge can help us make better decisions. Working from the principles of self-determination theory, Stephens and Pantoja (2016) wanted to test the prediction that students who participate in an activity for the purpose of experiencing stimulation and having fun are more likely to be those students who use mobile devices in classrooms. Almost 300 students studying a variety of disciplines responded to a survey measuring students' desires to multitask, how actively students

participated in class, and their academic motivation. The researchers used statistics to test the prediction that those students who multitask to increase their understanding, influence others, and provide social support to others in the classroom were more likely to multitask during class. The researchers verified their prediction by testing their hypothesis.

Going beyond describing, determining causes, and predicting, *explaining behavior* means understanding why a behavior occurs. For example, if researchers were able to determine how and why health campaigns work, more effective campaigns would ultimately result in a healthier society that spends less money on health care. But finding such an explanation is difficult and often requires a series of sophisticated research projects. Working from a well-developed and validated theoretical basis is an effective way to develop explanations for communication behavior. For example, Roberto et al. (2003) surveyed 488 junior high students about four aggressive behaviors: watching a fight, telling friends about a fight that is going to happen, insulting others, and fighting. For each of the aggressive behaviors except fighting, the explanatory model provided by the theory of reasoned action (i.e., the best determinant of actual behavior is behavioral intention) explained students' participation in aggressive behaviors. That is, students' attitudes about a behavior created behavioral intention, which, in turn, caused their participation in that behavior.

These four outcomes—description, determination of causes, prediction, and explanation—are closely related. New knowledge in one area will affect how questions are asked and answered in another.

Research and Theory

When researchers discover that one explanation about the relationship between phenomena occurs regularly, a theory can be constructed. Although many definitions exist for the term *theory*, in general, a **theory** is a related set of ideas that explains how or why something happens. In other words, a theory provides a way for thinking about and seeing the world (Deetz, 1992). More formally, a theory is a set of interrelated concepts, definitions, and propositions that presents a systematic view of phenomena. A theory specifies the relationships among the concepts with the objective of explaining and predicting the phenomena being studied (Kerlinger, 1986). As a result, theory helps us understand or make sense of the world around us. Of course, communication theories can help us understand our own communication behaviors as well as the communication behaviors of others (Miller & Nicholson, 1976).

With respect to communication, a theory is one or more propositions about people's communication behavior that enables a communicator to figure out how to communicate with particular individuals or in a given situation. The term *theory*, however, does not have one precise meaning. Rather, different definitions of the term are used because they promote different approaches to research (Craig, 1999; Jensen, 2008). The best research is driven by theory; that is, it validates a theory, further explains a theory, challenges an existing theory, or aids in the creation of theory. Theoretically driven research is built on the results of previous researchers, and it provides a foundation for subsequent researchers. Theory cannot be formulated, tested, and verified in one research study. Rather, theory is developed and tested over time. What we come to know as *the theory* to explain some phenomenon is the result of many research studies and the efforts of many researchers.

Cushman (1998) points out that "human communication is one of the most creative, flexible, and thus anti-theoretic processes in which human beings engage" (p. 9). Why? The complexity of communicating in multiple cultures with multiple, and sometimes conflicting, social goals provides the opportunity for multiple individual interpretations. Moreover, communication occurs in multiple languages with different sets of rules and practices. According to Cushman, this variability is one important reason communication scholars must look for the mechanisms or constructs that are constant regardless of the language used to communicate. Thus, communication researchers use systematic procedures and scientific principles to conduct research about how and why humans communicate as they do.

COMMUNICATION AS A SOCIAL SCIENCE

There are many methods of discovery and explanation, or many ways to view communication problems. Scholars conduct their research from paradigms that provide different explanations and functions for the

role of symbols, messages, and meanings in the process of communication. These paradigms also create differences in what researchers count as data. You have probably explored these different paradigms in courses on communication and rhetorical theory.

Broadly, this book explores the social scientific study of communication for which a wide variety of methods is available. This text will introduce you to both **quantitative methods** (generally speaking, research that relies on numerical measurement) and **qualitative methods** (generally speaking, research in which the researcher observes participants first hand in naturally occurring contexts). Both methods are part of the social science research tradition as practiced in the communication discipline and reported in communication and related-discipline journals and scholarly books. Both quantitative and qualitative methods of research are empirical; that is, both methodologies are based on or are derived from experiences with observable phenomena. This is the critical element of research. Both quantitative and qualitative methodologies can observe and describe human communication. And both can help researchers in explaining or interpreting what was observed.

The study of communication from a social science perspective uses quantitative or qualitative methods to look for patterns of messages or communication behaviors. These patterns can be based on observations or measurements across the experiences of many individuals or on the in-depth observations from one case over time. Either way, the data must be empirical; that is, the data must be able to be verified through observations or experiences.

How does the study of communication as a social science differ from humanistic and critical studies of communication? The study of communication from a rhetorical perspective often focuses on how language is used to persuade in a particular case (e.g., a specific speech by a specific person or other one-time event from which a text can be drawn or developed; a website that represents the views of a specific group of people). In addition to the rhetorical event itself, an analysis would include the historical, cultural, and social contexts surrounding it. Probably the most useful distinction is that rhetoric is planned for a specific goal for a specific audience, whereas the social science study of communication focuses on the interactive moment between and among conversational participants. A rhetorical study is more focused on one case, whereas the social science study of communication looks for patterns across people or situations.

From a critical perspective, the research emphasis is on the hidden assumptions of broad social structures that serve the interests of some people (those in power) more than others. Critical communication scholarship focuses on understanding the domination, inequality, and oppression that can occur through communication practices and structures. For example, what ideological structures in our society control or dominate the dissemination of digital technology? Some critical scholars use qualitative methods in their research, and some of these examples are included in this book. Critical communication research can also be rhetorical.

The definitional boundaries for what constitutes these three perspectives for studying communication (social science, rhetorical, critical) are blurry, and not mutually exclusive. But, broadly speaking, this text focuses on the social scientific methods for conducting communication research.

How does the study of communication differ from the study of other social sciences? Generally, the social sciences are defined as those areas of scientific exploration that focus on the study of human behavior. Psychology, sociology, and political science are other fields in the social sciences. As a social scientist, the communication scholar focuses on symbols used to construct messages, the effects of messages, and their meanings. So, as you read communication research in journal articles and books, and as you design research projects, you should ask yourself, "What characterizes scholarship as communication research?" More specifically, what communicative component (e.g., symbols, messages, or meanings) is being studied? Does the research address social problems as communication problems? Is the research based upon communication theory or contributes to the development of communication theory? How does the research position communication in relationship to our social and cultural lives? (Carbaugh & Buzzanell, 2010).

The social sciences are different from the natural sciences in that the social scientists focus on the study of human behavior. Problems that are significant for study in the social sciences involve several important variables, and untangling the effects of one variable from another is difficult. Moreover, the social sciences recognize that the researcher is a human instrument with biases and subjective interpretations that can

affect the individuals or processes under investigation. Finally, seldom can an entire system of human behavior (e.g., an entire organizational communication system) be observed. Even if it could be, human systems are always subject to new influences; thus, what is being observed is dynamic. As a result of these differences, the study of human behavior is difficult to isolate and control even if the examination is done in the laboratory setting.

One last point is that social science research is contextually and culturally bound. Research is contextualized first by the number and type of people participating and by the type of communication being investigated. Second, research is contextualized by where the investigation occurs—in the lab or in the field. Third, research is contextualized by the culture in which it occurs. Researchers and participants bring cultural norms and values to what they do and how they communicate. All these contextual and cultural factors influence the research investigation, the data produced, and the interpretation of results.

The Scientific Approach

So how do communication researchers incorporate scientific characteristics into the process of conducting research? Generally, research follows procedural traditions that have been tested, validated, confirmed, and accepted by social scientists of many disciplines over time. The research process has five general steps (Kerlinger, 1986). Figure 1.1 illustrates this process.

First, researchers start with a question that interests them. A question may arise from reading the scholarly literature or a communication issue they've seen or heard in the media. Or, a question may arise from their personal experiences or from experiences reported to them by others. In other words, some question, or curiosity, has not been explained or had been explained inadequately.

A question may also be stated as a problem. In either form, the researcher cannot continue the research process without identifying and specifying the question or problem. For example, my own curiosity about why sexual harassment continues to occur in organizations despite clear societal and organizational signals that a perpetrator faces employment, legal, and even financial consequences for sexually harassing another employee caused me to pursue this area in several research projects.

Second, the researcher uses the question or problem to formulate a **hypothesis**, or a tentative, educated guess or proposition about the relationship between two or more variables. Oftentimes, hypotheses take the form of statements such as, "If *x* occurs, then *y* will follow" or "As *x* increases, so will *y*." With respect to our sexual harassment research, we used previous scholarship to help direct our inquiry. One of our hypotheses proposed that participants who identified themselves as targets of sexual harassment would identify more verbal and nonverbal cues as harassment (Keyton & Rhodes, 1997).

If the researcher cannot formulate a tentative proposition after reviewing the existing literature, then a research question is developed. A **research question** asks what the tentative relationship among variables might be or asks about the state or nature of some communication phenomenon. For example, we used the research question "Will there be a relationship between ethical ideology and the ability to accurately distinguish between verbal and nonverbal behaviors that have been shown to be associated with flirting and sexual harassment?" (Keyton & Rhodes, 1997, p. 135). Although numerous studies had been published on both ethical ideology and sexual harassment, no study had explored the relationship between these two issues. Thus, we posed a question to help us determine if a relationship occurred. We could not propose what type of relationship would exist.

In the third step, which is often underemphasized, the researcher uses reason and experience to think through the hypotheses or research questions that are developed. A researcher might ask, "Do the research questions and hypotheses I've generated capture the essence of the problem?" or "Are there other variables that affect the relationship between the two variables I've identified?"

This step of reasoning, or thinking through, may, in fact, change the direction of the research. It may broaden the nature and scope of research, or it may more narrowly focus the researcher's inquiry. By taking this step in refining and formulating the research question or hypothesis, researchers discover the most significant issue that can be addressed given their initial questions or problems. By using the experience we gained in developing sexual harassment training for organizations and by searching the literature, we discovered that one of our proposed hypotheses ("participants who identified themselves as targets of sexual harassment would identify more verbal and nonverbal

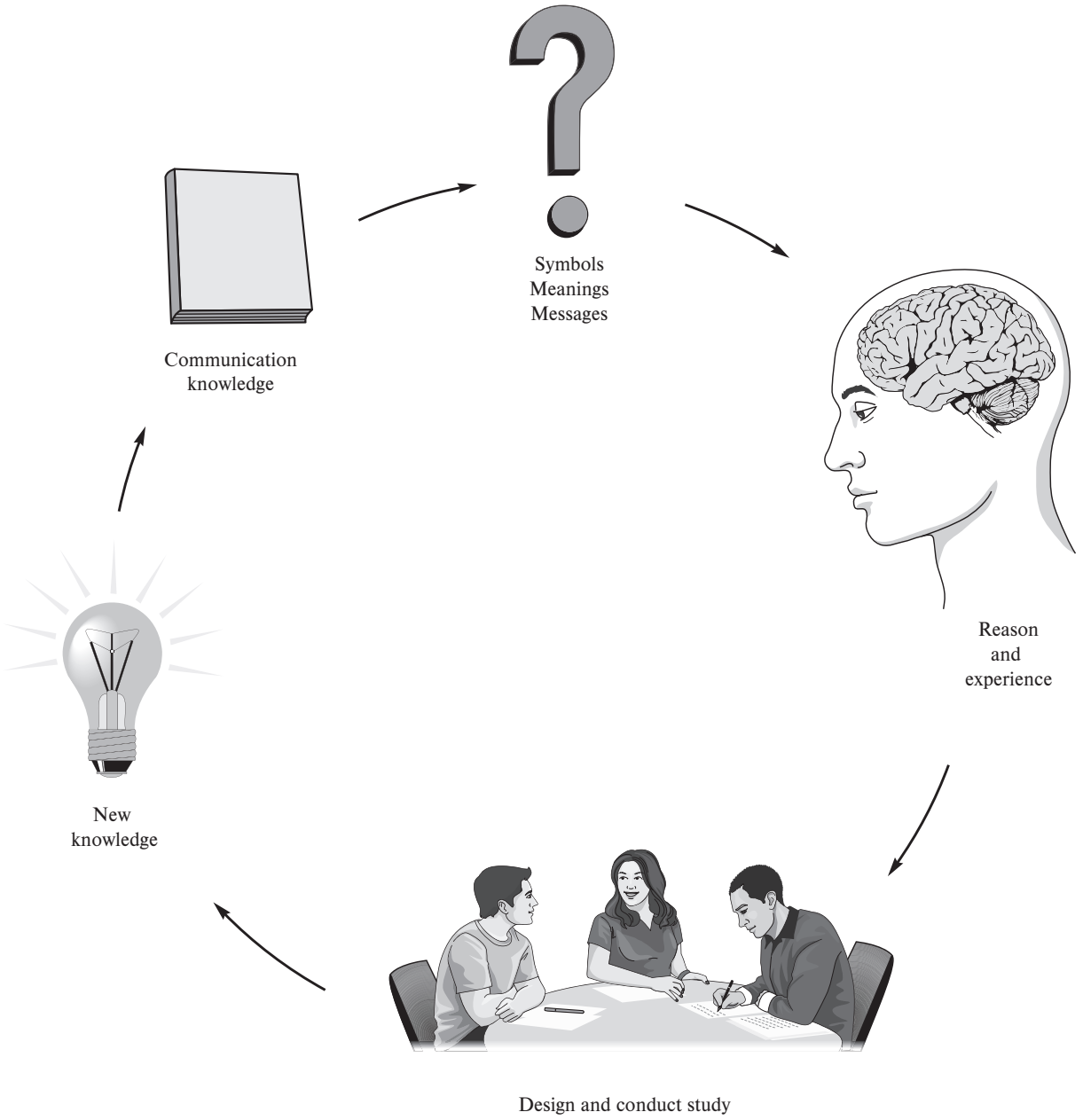

FIGURE 1.1 General Steps of the Scientific Approach

cues as harassment") would not adequately explain why some employees view behaviors as sexual harassment and others do not. In other words, an employee's perceptions of sexual harassment would not simply depend on whether she or he had been sexually harassed. As a result, we tested three other explanations.

Fourth, the researcher designs and conducts the observation, measurement, or experiment. Although each variable or element identified in the research question or hypothesis must be observed or measured, it is actually the relationship between them that is assessed. Fifth, the data are analyzed and interpreted in

reference to the question or hypothesis posed in step 2 and refined in step 3.

Thus, the social scientific approach to communication research starts with a problem, a question, or an idea as the researcher identifies a barrier or gap in knowledge. Then, the research question or hypothesis is formulated. Once developed, the research question or hypothesis is revisited and refined. Only then can the methodology be designed and carried out. The results are interpreted and fed back into our knowledge of the original problem. As a result, the problem is resolved, completely or partially, or new questions arise. Recognize that the five steps described are not necessarily discrete. One step blends into another. Work in one step may require the researcher to go back and revise what was previously completed.

Characteristics of Science

In pursuing these five steps of the research process, researchers can select from a variety of quantitative and qualitative methods. Although individual methods vary in the extent to which they encompass the following 12 characteristics, over time these characteristics have distinguished scholarly research from everyday, or informal, ways of knowing (Andersen, 1989; Bostrom, 2003; Katzer et al., 1978; Kerlinger, 1986). These characteristics are not unique to the study of communication. Rather, scientists of all disciplines have accepted them. Thus, the tradition of science rests with these 12 characteristics:

1. *Scientific research must be based on evidence.* Even experts can disagree. That is why evidence, or data, is paramount to the research process. Further, scientific research is based on the principle of empiricism. This means that careful and systematic observation must occur. What is observed and measured—the data—serves as the evidence researchers use in making their claims.

2. *Scientific research is testable.* This means that the proposition, research question, or hypothesis must be able to be probed or investigated with some qualitative or quantitative methodology. If the proposition cannot be tested or challenged in a research study, only speculations about the validity of the claim can be made.

3. *Researchers must explore all possible explanations in an effort to demonstrate that their proposition cannot be disproved.* If a proposition can be shown to be false, then, logically, it cannot be true, or valid. If the proposition and its explanation hold up over time, scientists come to accept the finding as true or real, until shown otherwise.

4. *The results of a research study are replicable, or repeatable.* Ideally, different researchers in different settings and with different participants should conduct replication studies—studies that repeat the same procedures. The results of any one study could be wrong for many reasons. Repeating the same or a very similar study many times and obtaining the same or very similar results ensures that the finding is real and can be counted on.

5. *For replication to occur, research must be part of the public record.* This is why communication scholars publish their work in academic journals and scholarly books. Scholars typically are not paid for these publications, but their work is supported through their universities and sometimes by government agencies and other funding organizations. As part of the public record, university and college libraries provide access to these journals and books, so you can scrutinize what researchers did and how they did it. Scientific study is available to other researchers and the general public. It is not private, or proprietary, research conducted for the exclusive use of those who paid for the research to be done. Because scientific research is part of the public record, scholars build onto as well as challenge each other's work. All published research includes a section describing the methods by which the data were collected and interpreted. This allows others to evaluate the methods used for potential weaknesses and to replicate the study for further validation.

6. *Because scientific research is part of the public record, it is also self-correcting.* This characteristic means that the scholars who conducted the original study as well as the scholars who replicate or challenge studies are continually improving the methods by which they observe or measure the phenomenon of interest. Improving on the methods is one way to develop a greater understanding and more detailed explanations.

7. *Scientific research relies on measurement and observation.* Researchers can measure your communication apprehension, for example, by asking you to fill out a questionnaire. Or they can observe your apprehension by counting the number of times you lose your place when you are speaking and have to refer to your notes. When something is not directly observable,

researchers develop and rely upon other methods (such as questionnaires) to capture participants' attitudes, perceptions, and beliefs.

8. *Scientific research recognizes the possibility of error and attempts to control it.* When things are measured or observed, we expect that some error will occur. For example, errors occur when a researcher does not see the participant lose her place while speaking because his attention is distracted by loud voices in another room or when a mistake is made in transferring data from the coding sheet to a spreadsheet. Errors can occur in many places in the research process. Quantitative research limits and accounts for error through the use of systematic procedures and statistics. Qualitative research accounts for error by providing detailed description to allow the reader to draw his or her own conclusions and interpretations. Most procedures have been standardized over time and across disciplines. Such formality in procedure acts as a form of control to help the researcher eliminate error, bias, and other explanations for the result found. Despite these control mechanisms, it is impossible to eliminate all bias and error in conducting research. Recognizing that bias and error can occur, researchers must take every precaution in helping to minimize it.

9. *Scientific objectivity requires the researcher to minimize personal bias and distortion.* Despite the passion for their topic and the time devoted to the project, researchers cannot be so committed to their own point of view and expectations that they fail to see other explanations when they appear. In essence, the objectivity of science distinguishes it from conclusions based solely on opinion. Too frequently, objectivity is associated only with quantitative research, and subjectivity is associated only with qualitative research. In reality, all researchers, regardless of method, must demonstrate objectivity in conducting research. Even though qualitative research is more subjective due to the greater intimacy of the researcher–participant relationship, scholars doing this type of research must be able to describe their role in the research process, and this act requires a certain amount of objectivity. Alternatively, statistics must be selected and statistical findings must be interpreted—both subjective decisions. The point here is not to quibble over the alignment of objectivity/subjectivity to quantitative/qualitative method. Rather, it is to introduce the concept of scientific objectivity as practiced by all researchers regardless of which methodology they choose.

10. *Science by its nature rests on an attitude of skepticism.* By their nature, researchers are suspicious; they do not rely on what appears to be obvious or on common sense. Within the social science research tradition, researchers rely on data compiled from quantitative and qualitative methodologies to answer their questions and support their claims. This element of skepticism is what allows, even encourages, researchers to put their assumptions through a process of testing or verification.

11. *Scientific research has an interest in the generalizability of findings, or the extension of the findings to similar situations or to similar people.* In quantitative research, findings have greater external validity if they apply to a range of cases, people, places, or times. In other words, are the results of studies that use traditional college-age students as research participants applicable to nontraditional college-age students? What about teenagers? Or retired adults? All studies have limitations, but by using discipline-accepted procedures, researchers can help strengthen the generalizability of their results. In qualitative research, findings are typically less generalizable because they are more case-specific. However, the generalizability of qualitative results can also be strengthened as a researcher spends greater lengths of time observing research participants.

12. *The final characteristic of science is its* **heuristic** *nature.* This means that research findings lead to more questions. At the conclusion of most journal articles, scholars identify new questions that surface from their findings. The ability of a finding to suggest additional questions or new methods of conducting the research is its heuristic ability. The ultimate objective of science should be to lead scientists to future discoveries and investigations.

Methodological Extremes

This introductory chapter is a good place to also introduce you to a methodological extreme that you should be aware of as you learn about research methodology (Bouma & Atkinson, 1995). A child given a hammer for the first time is likely to run around the house and hammer anything and everything. The child hammers because it is new and novel.

Unfortunately, this same phenomenon can exist when anyone is learning about research methods (see

Cappella, 1977; Janesick, 1994). With each new technique, there is the tendency to believe that this particular method can answer any question. However, think of the method as a tool and recognize that there are appropriate tools for different purposes. To expand the tool metaphor, hammers are good for pounding in nails, but screwdrivers are better for twisting in screws. The point here is that the substantive content of the research question or hypothesis drives the selection of the methodological tool (Hackman, 1992; Janesick, 2000).

Methods are useful or effective only to the degree that they help the researcher answer a specific question or explore a specific hypothesis. Methodological choices are part of the overall research plan. "A good research design is an operational plan that permits the researcher to locate precisely the data that permit the question to be answered" (Riffe et al., 2014, p. 41). So, if you let the method drive the research questions you ask or the hypotheses you test, then your results are more likely to be tied to the method you selected than to represent a valid response to the question or test of the hypothesis. No one research method can answer all questions. Although you will find that you are drawn to some methods more naturally than others, you will develop stronger analytical skills, both as a researcher and as a consumer of research, if you develop skills collecting and interpreting data from a variety of methodological techniques.

WHAT KINDS OF QUESTIONS DO COMMUNICATION SCHOLARS ASK?

Among the variety of questions that can be asked about communication are both important questions and trivial ones (Miller & Nicholson, 1976). How do researchers determine the significance of a question? There are three criteria: theoretical significance, social importance, and personal interest. The first criterion is theoretical significance. Questions that initiate the development of or contribute to the further development of communication theories are significant (Miller & Nicholson, 1976) because they deepen our understanding and explanation of communication behavior. When these questions are posed and answered by research, we gain new knowledge.

Because communication is a social activity, significant questions are those that have a general social importance (Miller & Nicholson, 1976). For example, questions that satisfy this second criterion might be, "What media campaigns would decrease the likelihood that teens try drugs and alcohol?" or "What negotiation strategies work best in resolving intercultural differences in international negotiations?" Finding the answers to questions like these could have a powerful impact on many lives. Questions that drive research do not have to relate to all members of society. But we should ask who would be affected by the answer. If enough people are affected by or could use the answer to the question, then the question has social importance.

The third criterion focuses on which interests or perplexes the researcher (Miller & Nicholson, 1976). Questions that interest me include the following: (1) How do children learn to communicate in groups? (2) Why do some employees persist in sexually harassing other employees given the individual, relational, professional, financial, and legal consequences that are likely to result? (3) To what extent does the relational development among group members affect the task effectiveness of a group? Some of the studies my colleagues and I have conducted in these areas are used as examples in this book.

What questions interest you? They may be questions you have considered in another course or questions that arise from your experiences with others. Your interests may be idiosyncratic, not coinciding with the interests of others. This demonstrates why the first and second criteria of theoretical significance and social importance are valuable and necessary. Keeping these three criteria in mind can help us respond to the "so what?" question. Many times, people read research reports and have difficulty finding any significance or utility for the findings. If your research project has societal significance and is driven by personal interest—and if these issues are described in the research report—then the "so what?" has been answered.

The Nature of the Questions

As you read the communication research literature, you will notice several types of questions (Stacks & Salwen, 2009). The first type, **questions of definition**, provides definitions for phenomena in which we are interested. Whereas you may believe that all definitional issues have been addressed, remember that new communication situations and environments and changing

societal values create new areas to explore and define. As a question of definition, Keyton et al. (2013) asked adults which communication skills they observe or hear in their workplace. In a subsequent study, working adults evaluated how effective they were at using the skills identified in study 1. Interestingly, what the first group of participants identified as the most frequently used communication skills were ones that participants in the second study admitted were not their most effective. These studies addressed definitional questions in that they were designed to, first, identify from an employee's perspective what communication skills are more frequently used and, second, to evaluate how effective employees believed they were in using these skills. Questions of definition, or *what* questions, move the phenomena from the abstract realm into the specific. Rather than guessing which communication skills employees use frequently and how effective they are in using these skills, the research team used online survey methods to answer the question, "What verbal workplace communication behaviors are routinely performed at work?" (p. 156).

After the *what* has been adequately defined, researchers generally turn to questions of relationships or questions of cause and effect. **Questions of relationships** examine if, how, and the degree to which phenomena are related. For example, adults with experience in online dating sites participated in a survey study so that the researchers could discover what information in an online profile influences social attraction. The research question was "How are different levels of selective self-presentation related to social attraction in online dating sites?" As the researchers explained, people engage in selective self-presentation (or the presentation of positive information) to elicit attraction from others. However, when other daters examine such positive profiles, they might interpret too much positive information as misrepresentation or boasting. The researchers manipulated three sections common to most online data profiles: the online dater's self-summary, description of what the online dater is doing with his/her life, and description of what the online dater excels at doing (Wotipka & High, 2016). Results of the study indicated that profiles with lower levels of selective self-presentation are evaluated as having higher levels of social attraction.

By understanding how variables are related, we have a greater understanding of our world and the role of communication behavior in it. Most important, questions of variable relations help the community of communication scholars build and develop theory.

Questions of cause and effect ask and answer if one or more variables is the cause of one or more outcome variables. These types of questions explore *why* one aspect of communication is connected to another. As an example, one research team (Paek et al., 2012) predicted that exposure to a nationwide multimedia campaign directed toward children ages 9 to 13 would influence their attitudes toward physical activity. Children who saw the campaign

> "were more prone" to perceive that they can control their behavior of doing physical activity, that their family and parents think they should engage in physical activity, that their peers consider physical activity to be important and fun, and that physical activity is prevalent among their peers. Also, teens who reported greater exposure to the VERB campaign were more likely to form a favorable attitude toward physical activity. (p. 877)

Thus, the researchers predicted, or demonstrated, that messages in the campaign had positive effects on children's beliefs about physical activity.

Questions of value ask for individuals' subjective evaluations of issues and phenomena. Questions of value examine the aesthetic or normative features of communication, asking, for example, how good, right, or appropriate a communication phenomenon or practice is. Questions of value are inherent in a study that explores how everyday discourse stigmatizes teenagers who are homeless. Harter et al. (2005) interviewed homeless teens, educators, and social service providers. These teens, often called the hidden homeless, try to disguise the fact that they are homeless when talking with others to avoid being stigmatized or labeled. Other interviews revealed that community members are generally unaware of this homeless population and the difficulties the teens encounter trying to continue their education. This study raises the question of how this type of public discourse inhibits conversations that could bring awareness to the problem and help the teens and their families.

Finally, there are **questions of policy**. Communication researchers seldom test policy issues directly, but the results of research studies are often used to recommend a course of action. Roberto et al. (2008) tested a 7-week intervention program designed to prevent pregnancy, STDs, and HIV in adolescents.

TRY THIS!

Evaluating Communication Questions

For each of the questions listed, evaluate your personal interest in the question and the question's social importance. Use the table to capture your evaluations. Rate your personal interest on a scale of 1 to 5, with 1 being "little or no personal interest" and 5 being "high personal interest." Rate social importance on a scale of 1 to 5, with 1 being "little or no social importance" and 5 being "high social importance."

Preliminary Research Question	*Personal Interest*	*Social Importance*
How do adolescents search for health information online? (From Wartella, Rideout, Montague, Beaudoin-Ryan, & Lauricella, 2016)		
What health claims are presented in the tweets [about vaping related illnesses]? (From Damiano & Allen Catellier, 2021)		
What kind of communication strategies do immigrant women entrepreneurs use to negotiate their identities as they interact with others? (From Haseki et al., 2021)		
How will the race of the spokesmen, performance history, and crisis type influence perceived credibility of the spokesmen? (From Ha & Ferguson, 2015)		
Does leader-member exchange status (i.e., in-group vs. out-group) explain employees' communication-mode choices (i.e., e-mail vs. face-to-face) in organizational dissent? (From Turnage & Goodboy, 2016)		
How do college and university student journalists perceive the coverage of women's sports in student newspapers? (From Schmidt, 2015)		

Compare your evaluations with those of other students. How are your evaluations similar or different? What other questions about communication do you believe merit researchers attention?

The intervention included six computer-based activities. Over 300 10th graders at two high schools participated in the study. Students at one high school completed the intervention activities; students at the other high school served as the control group and did not participate in the intervention activities. Students who participated in the intervention program outperformed students in the control group on disease knowledge, condom effectiveness, how to negotiate condom use, and attitudes toward waiting to have sex. The study demonstrated that modest computer-based interventions could be effective. Because this type of intervention can be used to reach a large number of teens, the findings have policy implications for agencies considering how to allocate funds for these types of health-related programs.

As you can see, communication research varies widely in its subject matter. Some research has implications for the development of communication theory, some has more practical application, and some contributes to both theory and practice. But all research starts with a basic question about communication that

needs an answer, and all research uses some form of scientific and systematic research methodology in providing those answers.

SUMMARY

1. Research is asking questions and finding answers.
2. Scholarly research is the discovery of answers to questions through the application of scientific and systematic procedures.
3. Academic research follows accepted norms and procedures that have been adopted by scholars from many disciplines.
4. In the process of scientific discovery and explanation, four outcomes are sought: describing behavior, determining causes of behavior, predicting behavior, and explaining behavior.
5. The best research is that which is driven by theory, validates a theory, further explains a theory, challenges an existing theory, or aids in the creation of theory.
6. As a social science, communication researchers use both quantitative and qualitative methods.
7. The study of communication from a social science perspective looks for patterns across cases and focuses on symbols used to construct messages, messages, the effects of messages, and their meanings.
8. Communication scholars start with an interesting question and then formulate a formal research question or hypothesis.
9. A hypothesis is a tentative, educated guess or proposition about the relationship between two or more variables.
10. A formal research question asks what the tentative relationship among variables might be, or asks about the state or nature of some communication phenomenon.
11. Research is judged to be scientific by 12 characteristics: its empirical nature, its ability to be tested, the extent to which it can be falsified or disproved, the ability to replicate or repeat findings, the public nature of findings, its self-correcting nature, the ability to measure or observe the phenomenon of interest, the ability to minimize error through the control of procedures, its level of objectivity, the skepticism it raises, the generalizability of findings, and its heuristic nature.
12. Questions suitable for communication research are those with theoretical significance, of social importance, and in which the researcher has personal interest.
13. Questions suitable for communication research may be questions of fact, questions of variable relations, questions of value, or questions of policy.

KEY TERMS

empirical
heuristic
hypothesis
proprietary research
qualitative methods
quantitative methods
questions of cause and effect
questions of definition
questions of policy
questions of value
questions of relationships
research
research question
social science research
theory

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