CHAPTER 4

Developing a Research Question, Reviewing the Literature, Exploring Data Sources, and Defining Variables

By now it should be clear that the choice of method depends a lot on the theoretical perspective of the researcher and the type of question being asked. Those who are concerned with the mass media as a causative factor in the acquisition of knowledge or short-term changes in individuals' attitudes, perceptions, behaviors, and opinions are more likely to use experimental methods. Those who are interested in the media's important role in everyday social life and its meaning within a particular cultural context are more likely to choose ethnographic methods. Those who are interested in the interaction of media information with general public opinion will often combine public opinion survey data with data from content analysis. Those who want to understand the mass media's role as a social institution will focus their attention, whatever method they choose, on institutional structure and function—perhaps through a case study of a particular media organization—or on the media content that is itself an outcome of institutional processes. Practical questions about the media are also posed by media managers, educators, advertisers and public relations practitioners, and policy specialists.

None of these perspectives is "wrong" or "right." Mass media research has become an important academic field because of the pervasiveness of the media in modern culture and society. Important studies can be done on many different aspects of the media's various social roles. All of these different questions call for different means to answer them.

A **research question**, whether primarily theoretical or primarily applied, is simply what your research project is designed to explore or answer. Often, the choice of theoretical perspective and preferences about research questions and methods, when not predetermined by particular practical issues, reflect the researcher's training—the ways that he or she has been taught to think about the media—more than anything else. As a student, your understanding of what media research is all about is complicated by the fact that communication researchers have borrowed both theories and methods from fields with widely differing histories and purposes. That is why the first section of this book linked our major social science methods with the fields that developed them.

But these elements of methodological and theoretical diversity are also a great advantage. As a mass communication student, you have the opportunity to develop a better sense of the relationship between theory and method and a deeper understanding of why some methods are chosen over others than students who are taught only how to do experiments, only how to do surveys, or only how to do qualitative studies.

Usually, researchers begin with a general interest in a particular problem. Perhaps it has been unsolved for years, and there's a certain irresistible challenge in it, as with many media effects issues. Perhaps new research on a related issue has suggested a new way to attack an old problem, or the introduction of new technology has changed the media in such a dramatic way that the old conclusions may no longer apply. Perhaps a government agency or private foundation has a special interest in solving a particular problem and makes funds available for research projects in that specific area, such as improving health. Or a manager in a media organization is faced with practical decisions that call for better knowledge of the target population and its response to particular content. In any event, the first step in any research project (after identifying a general direction) is reviewing the academic literature on the issue.

REVIEWING THE ACADEMIC LITERATURE

A review of other researchers' work that has already been published in the academic research literature helps clarify conceptual issues, identify fruitful theories and methods, and rule out "dead ends" that appear to have been

thoroughly investigated already, which is why it is first on the list of essential steps in the research process. Sometimes even experienced researchers may be so excited about a project that they want to complete it first and look at the literature later. This might be all right for someone who already knows about most of the scholarship in a particular area, but it can also be a mistake that can lead to a lot of wasted work. Beginning researchers in particular are urged to first understand what others have already discovered about their question. Where you can, plan to build on the work of others rather than trying to reinvent the wheel at every step.

Whether your project turns into a paper submitted for a research course, a thesis or dissertation, or ultimately a published study, the literature review is almost always the first major section after the introductory paragraphs. So it is not just a first research step but an important piece of the final product. This part of the project report summarizes the findings of all the available, closely related research work that has gone before. It is a crucial tool in identifying gaps in our knowledge and in linking a particular research problem to established theory. Not only is the theory helpful in refining your problem and choosing a method, but it also helps link your study to an ongoing stream of studies that ask and answer related questions—making your work a part of an ongoing public dialogue about questions of interest to a community of scholars.

This book is about methods and does not go into theory in depth, but the two are inseparable. More about the role of theory in research is provided in a later section of this chapter.

Sometimes there seems to be no previously published research on a topic, in which case there are several possible explanations. The topic may be difficult or even impossible to investigate using empirical research methods. In other words, it may be a matter of opinion or policy rather than a researchable question (see more discussion of this below). Or the research question may be truly new—an opportunity for exciting discovery! In this case, you must first determine that other research on the question is not "hiding" somewhere in the library. Because media questions interest researchers in a broad range of academic disciplines outside media studies itself (from political science to engineering and psychology to rhetoric), this search can be unusually challenging. A knowledgeable and sympathetic librarian can help enormously here.

Of course, if your study is about something very specific and quite new, such as a particular Web site format that has just been introduced or a piece of technology that has only recently been developed, your literature review is not going to turn up much. By the time this book is in print, quite a number of studies are likely to have appeared about social networking sites, such as

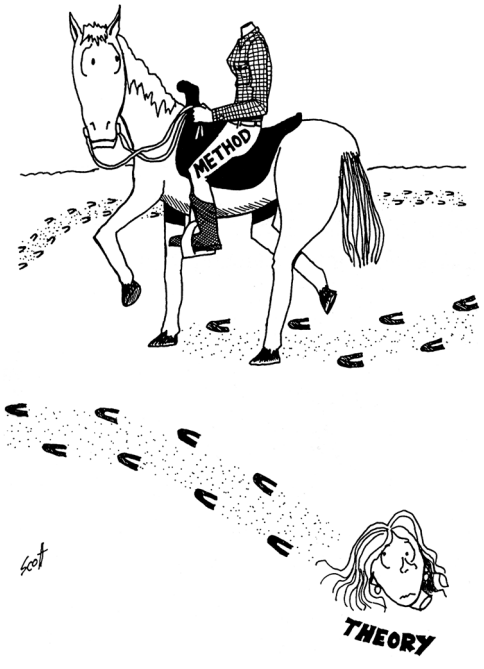

Figure 4.1 Methods without theories are like horsemen without heads. Where does this researcher think she's going?

Facebook or MySpace, but right now (as this is being written), hardly any are available. It usually takes several years for significant studies to be designed, implemented, and published. However, it is also important, even if no published research seems to be available on the specific subject of interest, to identify closely related or analogous studies. What have researchers found out about other Web site formats or earlier but related technologies? Research results that concern earlier related media developments still serve the important purposes of helping clarify theory and suggesting appropriate approaches, by providing some conceptual and practical foundations on which to build.

Modern electronic library indexes have greatly simplified the process of locating appropriate articles and books—but at some risk. Electronic indexes are often incomplete—especially for older material. It may be easy, using these valuable tools, to turn out a bibliography consisting of 100 or even 1,000 references overnight. But what are you going to do with 100 references? You still need to be able to identify which ones are the most important. Those are

the ones in which you should invest the time to read, digest, and summarize to inform your own work and to include in your own research report a bit later.

The first edition of this book contained specific suggestions for electronic guides and indexes to the literature most worth consulting. However, this landscape is changing so quickly that it has become difficult to make recommendations likely to remain unchanged for even a few years. Once again, a knowledgeable librarian is vital. All of the literature indexes in modern academic libraries (and most public libraries as well) use a system of keywords, so be sure to start thinking about which keywords are the best for capturing studies relevant to your project (also see the exercise at the end of this chapter).

Another important and perfectly reasonable strategy for locating relevant material is to look at the citations in a few of what appear to be the most important recent articles on your topic, especially those with well-developed literature reviews of their own. Locate the references that appear to be the most crucial in each case, and continue this process using *their* bibliographies until the question seems to be exhausted. Remember that in this strategy you are working backward, however, so you can miss the most recent and therefore most important work. You cannot rely on this strategy by itself, in other words.

What about using search engines to search on the Internet for the literature? There is no harm in trying, but since you are primarily seeking published academic research, this is unlikely to be the most efficient strategy. You will likely turn up too many things that do not fall into this category, you will almost certainly miss some of the relevant publications that would most help you, and you may have to invest a lot of time in sorting the wheat from the chaff—that is, in determining which items are legitimate academic research and which are not. Librarians tell us that this strategy works best for those who are already familiar with the literature in an area and have a pretty good idea of what publications they are looking for. More information about the nature of academic research publications is contained in the next section.

How do you tell when a review of literature is complete? There's no magic trick, and there certainly is no accepted number of citations that is considered appropriate. But there is an important rule of thumb: In doing a thorough review, you'll eventually find that you keep seeing citations to literature that has already been examined. The key academic sources on a specific question are usually reasonably limited in number and often refer to one another.

Writing the review of literature as a section of your final research report is a major task in itself, but it can also be an exhilarating one. Putting the existing literature together in summary form, showing how it relates to a new

problem (or a new interpretation of an old one), and identifying gaps and opportunities in the existing research record is both demanding and creative. This skill is at the core of scholarship, and it is every bit as difficult as running a complicated statistical analysis properly or designing the perfect survey. Looking at the literature reviews in a few of the important mass media research journals can give you a good idea of the format (which varies considerably from journal to journal) and style typically used.

Most items cited in your literature review will be journal articles. Of course, books and monographs may also be important, and even popular news articles may provide useful background. But the heart and soul of your literature review will be the academic journal article. For more about this, see below.

THE NATURE OF ACADEMIC PUBLISHING

Why do researchers publish their work anyway? The "publish or perish" imperative in modern universities is sometimes misunderstood and is often the subject of debate. It is true that poor-quality research sometimes comes from professors who seem less interested in the research question they are studying than in getting promoted or getting a new grant. Also, the amount of time that professors devote to writing research articles can interfere with the time they have available for teaching. Yet the most productive researchers are sometimes the very best teachers, partly because they have access to the very latest information. The jobs of university professors generally require them to produce new knowledge, not just pass on the old and worn.

The requirement that university professors publish their work in books and periodicals arose for important reasons and has a long history. It is through publishing—making public—research results that the sciences (including the social sciences) are able to build upon previous results and others' thinking, thus producing an accumulated body of knowledge. Results that have been made public can be scrutinized and tested again, using the same or perhaps a slightly different approach, by other researchers who either confirm or call into question the results. Each generation of researchers is not required to start over but can create new work that rests upon—even though it sometimes reverses—the old.

Published research is usually found in **academic journals**. The term generally refers to periodicals that are devoted primarily (often exclusively) to the publication of research results in a particular area. Before being published, each article typically undergoes a **peer-review** process. The journal editor sends the article out for evaluation by other researchers (the author's "peers") who are specialists in the particular subject matter and methods used. To ensure an

objective review, the title page of the manuscript is removed so that reviewers do not know whose work they are looking at. This process is also called a **blind review** because the reviewers are not supposed to know who wrote the article or what institution employs him or her—whether an Ivy League institution or a small state college. (A similar procedure is generally used for conference papers and research grant applications, although grant application reviews may not be blind.)

Reviewers evaluate the strength of the research and recommend to the editor whether to accept or reject the article or, commonly, what revisions would be needed to raise its quality. In this way, they act as the author's silent partners, not just his or her critics. (These days, a lot of this work is done electronically rather than by actually mailing hard copies of manuscripts.) Despite the sincere desire of almost all journal editors to be fair and impartial, the review process also reflects the particular interests and priorities of the journal and its editors. Some publications are more likely to print qualitative work, while others primarily publish quantitative work. Also, each is more interested in studies on some types of research questions than others. The degree of specialization varies but can often be judged by the title (see Box 4.1).

BOX 4.1

Identifying Important Communication Journals

Statistical rankings of journals are an increasingly common tool for judging their quality, although these should be considered only rough indicators. The leading such indicator is probably the Thomson Reuters cross-citation studies (formerly the ISI index). Their communication journal figures for 2007 include a number of publications that are particularly concerned with media or public opinion issues among the top 10: *Public Opinion Quarterly, Journal of Health Communication, Communication Theory, Media Psychology, Science Communication,* and *CyberPsychology & Behavior.* Other top-ranked communication journals, such as *Communication Monographs* and *Communication Research,* regularly include some media studies material along with other types of communication studies articles. These indicators can fluctuate quite a bit from year to year, however.

Another standard is association with a major academic organization in the field. *Journalism & Mass Communication Quarterly* is often considered a leading journal because it is the "flagship" publication of the Association for Education in Journalism and Mass Communication. Similarly, the *Journal of Communication* is associated with the International Communication Association.

Academic journals do not generally make a huge amount of profit, but they must bring in enough revenue to cover their expenses. This means they must consider their readership and strive to present research articles that are likely to be of particular interest to those readers. This tends to encourage and support the existence of communities of scholars with similar interests; in fact, the first academic journals were associated with early scientific societies made up of like-minded researchers. However, it also means that some journals are quite narrow, which can be frustrating to beginning researchers trying to figure out where to send their work—or to understand rejection of what they consider a good paper.

Unlike most commercial print media, academic journals have no formal "query" process in which authors inquire of editors as to their interest in a particular piece. Instead, authors usually make a judgment based on past issues or published guidelines, which are often quite brief, as to where to send their work. However, many journal editors will answer questions about the relevance of a particular manuscript to the journal's interests. Studying the journal itself will also help a great deal.

While no system is perfect, the tried-and-true system of peer review is the best we have. While final publication decisions are up to the journal's editor, he or she generally follows the reviewers' recommendations. The outcome reflects a collective scholarly judgment, not an individual or a commercial one, about the value of the work and its relevance to the area of scholarship the journal serves.

Articles in many of these journals are written in a very dense style that can be quite difficult for the inexperienced researcher to penetrate. Because journal space is at a premium, researchers must write as tersely as possible. Even experienced researchers have trouble writing succinctly yet clearly, which may be one reason why research articles have a reputation for being dull reading. Often providing a minimum of background explanation, they are also written with highly educated and very specialized readers in mind. Try to overlook the style and reach instead for the important information and ideas they offer. And when you find the rare article that is beautifully written as well as offering outstanding scholarship, enjoy!

DEFINING AND REFINING YOUR RESEARCH QUESTION

Before you even begin your literature review, you need some idea of where your project is going—a general topic or at least an area of interest. Reviewing the literature helps identify what other researchers have already

resolved and the gaps in our present knowledge, as well as offering ideas for possible approaches and methods. Once you've chosen a general area of interest—say, the role of soap operas in the lives of your fellow college students, the effectiveness of an interactive Web site providing health information, the change in a public figure's popularity following media disclosure of official impropriety, the media representations of war or crisis in another part of the world, the interaction with sources characteristic of modern television journalism, or readership patterns for a local weekly that wants to beef up its circulation—and once the relevant literature has been identified, located, and digested, the next task is to turn this general interest into a researchable problem, represented by one or more specific research questions.

Broad questions about long-term media trends and effects are usually researchable only if reduced to smaller, more specific ones; decades of research, tempered by judgment, are required to actually answer them, and even then the answers will often not be certain. How has the availability of new media for political advertising changed the political system in modern society? What will the eventual influence of the "information superhighway" on public access to information be? How has growing up with video games changed children's attitudes and behavior? Very large, long-term studies are useful in addressing such questions but unlikely to yield definitive answers. These larger studies generally require teams of researchers and substantial funding—unlikely to be available to beginners. Choose something small and specific that you can manage in the time available, whether a single academic term for a course project or a year or so for a master's degree paper.

Usually, defining a researchable question means narrowing a bigger problem and choosing only one aspect of it for immediate study. Are you interested in how the roles of women, as portrayed in popular mass media, have changed over time? Will you study this in print or on television, in entertainment or news? It is better to focus on a thorough study of one particular medium and program genre (say, sitcom dramas or the local evening news) or publication (say, women's magazines) during a specific time. A good project in this area for a course might even focus on several episodes of a single program or several issues of a single magazine. Keep things simple and manageable. You can always add additional data for comparison later.

Comparing two periods, or two programs or publications, can add depth to a small-scale study if it doesn't complicate things too much. In the example above, the research question is about change. If comparing two eras isn't practical, perhaps your literature review has turned up evidence of what things

were like 20 years ago that you could use as a basis for comparison with your contemporary data.

If you plan to do research involving people (such as experiments, observations, interviews, or surveys) rather than media content, consult with your instructor at the outset of the project to find out how much time it will take to get human subjects (IRB) permissions. The difficulty of this varies greatly from institution to institution; some institutions make it extremely easy to get permission to do these projects for course credit, and others do not. Deciding to study media content eliminates this hurdle. You might also be able to find survey data from a study someone else has done that you can reanalyze for your project, rather than starting from scratch. This may still require IRB permission in some cases, but it should be a much simpler process.

Bear in mind that some extremely interesting media problems are simply not researchable by the methods of social science. This includes legal, ethical, and policy issues on which social science can shed valuable light but that it cannot ultimately resolve. *Should* televisions be allowed in courtrooms, for example, or *should* children's programming be more aggressively regulated? *Should* parents limit their children's access to the Internet, or *should* news organizations reveal the identities of sexual assault victims? Ultimately, these issues of policy are matters of conscience and societal preference; no study can completely answer them. All "should" questions fall into this category. Social science can provide guidance about the likely effects of a particular decision in some cases, but in order to apply the methods of social science, we must change the "should" in these questions to "what would happen if."

Asking—and answering—a researchable question requires both caution and creativity, both focus and clear thinking, and often a willingness to track down obscure resources, persuade others to participate in and support your study, and sometimes even raise money. Still, asking a simple, if small, question that can be researched on a student budget with readily available tools and resources *can be done*—and also can be a lot of fun! A good trick is to write out your research question on a scrap of paper or a 3 × 5 card and put it where it's constantly in view. One characteristic of a good researcher is a broad interest in all kinds of possible research questions and all sorts of available theories and methods. But actually *finishing* a research project also requires focus.

MORE ABOUT THE ROLE OF THEORY

Up to now, theory has been discussed mostly in general terms. Media theory is often taught as a separate course from methods, but it is generally impossible

to produce the very best research without some kind of theoretical idea to guide you. Fortunately, many courses on media and society, even introductory ones, include at least some material about theory. If you have not taken a media theory course, it is especially important that you pay attention to the theories that have been used in the academic literature that you have located on your topic. Refer also to Chapter 2 for an introduction to some basic theoretical ideas contributed by our "foundational" disciplines for methods.

Actually, you probably already know a few theories or at least **theoretical concepts** from other courses or from your reading about media issues. While a theory provides a well-developed explanation that can yield testable hypotheses, a theoretical concept is an abstract idea that can be used to guide research but is not fully developed as a theory. Theoretical concepts can be considered a part of theory and can be almost as useful as complete theories in guiding exploratory or inductive research, even though they do not provide specific hypotheses; however, understanding the distinction between a theory and a theoretical concept can be very helpful to a researcher. Here are some examples.

"Agenda setting" is an example of a theory in media studies. This theory says that when the news media cover an issue, people who read or watch that news will consider the issue more important. Here the cause (media coverage of an issue) is very clearly linked to an effect (people thinking the issue is more important). Many studies have very clearly demonstrated this effect. Agenda setting may be a rather narrow theory, but it is one of our most robust, easily demonstrated explanations for one way that media accounts definitely appear to influence news consumers.

"Framing," on the other hand, is an example of a theoretical concept. This concept captures the idea that in creating a news story or another media product, some elements are inevitably left out, and what is put in is organized in a way that produces a certain impression. Framing undoubtedly contributes to the social construction of reality, discussed in Chapter 2, and some scholars have argued it should be considered a theory. However, framing is really a theoretical concept rather than a fully developed theory because (for example) it does not actually specify which types of frame will produce what impression. Even though framing is best considered a concept and not yet a theory, it is a concept that is providing guidance to quite a number of contemporary studies of media content and its influence. The frames offered by a given body of media content can be studied productively, even though the links between frame and production or frame and impression are not completely understood.

The "uses and gratifications" approach studies what people get out of using the media—what purposes it has and what needs it fills. Sometimes these are not obvious. For example, people may watch television or keep up with the

news in order to have something to talk about the next day or to give the appearance of being knowledgeable and informed. News often fulfills entertainment functions as well as informing us, while entertainment actually imparts a lot of information—for example, information about social norms and expectations. Uses and gratifications research is especially useful for studying new media, which often take over the niche of old media. E-mail has replaced personal letter writing in many cases. For many people, Internet surfing has replaced newspaper reading and sometimes entertainment TV. But is "uses and gratifications" a theoretical concept or a theory? Most scholars would probably argue it is a theoretical concept. It is an excellent tool for descriptive studies of media consumption patterns but proposes little in the way of explanation about *why* people choose to use different media for different purposes.

Often, a fully developed theory will make use of several theoretical concepts. The developers of communication campaigns sometimes use the "theory of planned behavior" (see Azjen, 1991, for details). This complex theory uses several theoretical concepts to explain the complicated links between attitudes and behavior. One of these is the concept of "self-efficacy" (Bandura, 1977), which refers to the extent to which people feel they have control over an outcome. Self-efficacy is one element of the theory of planned behavior. For example, I am more likely to eat less if I think that I can do it and that it will really help me lose weight; if I don't believe this, I am unlikely to bother. However, by itself, self-efficacy is not as good an explanation for decisions as when it is combined with other factors, including what other people seem to want us to do, in the larger theory. Once again, some people might see self-efficacy as a theory—it does suggest one narrow element of cause and effect—but it is not as complete an explanation as the broader theory of planned behavior can provide.

An example of a theoretical concept from the critical tradition is "hegemony," which states that the media tend to promote a single monolithic way of looking at things (we might say they promote a single worldview or belief system; critical theorists would use the term *ideology* here). Hegemony occupies a middle ground between a full-blown theory of media's role in promoting a particular set of beliefs and a theoretical concept. In itself, hegemony does not specify why media act this way or what effects they have. However, set in the context of the critical literature on the media, this concept does seem to provide a broad understanding of the role of media in maintaining power structures within society. Hegemony can also be observed, if not actually tested in a formal way, by examining the range of sources and points of view incorporated into media accounts, so while it does not lead to specific hypotheses

(hegemony does not tell us what causes it to be complete or incomplete in a given situation, for example), it does provide an explanation of one important type of media influence, and it can provide useful guidance for research.

These examples all help make the point that the distinction between a theory and a theoretical concept is not "black and white" but "shades of gray." Scholars might disagree on particular cases. Nevertheless, the distinction is conceptually useful to researchers: It is helpful to understand whether the theory you are using provides an almost complete, or only a partial or tentative, explanation of what is going on or whether it offers a way to only create an organized description but not test a hypothesis. Literally hundreds of theories and theoretical concepts are available in the scholarly literature on media; this section considers only a few common examples.

Theory does not always appear in a separate section in the research report but should be an integral part of the way the problem is set up. Theory helps determine the research question (or questions), will be visible in the literature review, and helps define the hypotheses if the study is deductive rather than inductive.

FINDING RESOURCES AND DATA FOR YOUR PROJECT

You have chosen a general topic and a specific research question, determined what literature is available, thought about what kind of theory is most applicable, and possibly even developed some hypotheses if you have chosen to do a deductive study. Now there is a new group of practical questions to consider. First of all, what resources are available to you for data collection? Many beginning researchers in media studies choose to do content studies; others might reanalyze available opinion data; some might choose to take the extra steps required to gather original data from people or organizations. Although, in an ideal world, your research question would be completely settled, and then you would gather the best data you can to answer it, in practice the logistics of gathering the data often dictate further refinement of the question.

Resources for Media Content

Even though a media content study is probably the most practical for a beginner, you still have to solve the problem of what material to use and where to find it. If you're thinking of doing a magazine study, for example, which magazines will you choose, and for what period? Are copies even available to you?

Not all libraries archive old publications, particularly popular ones, so your study is likely to be limited to what's currently available (recent publications). On the other hand, perhaps your aunt or grandmother has a collection of pre-1950s women's magazines stashed away in her attic. Such things can be valuable resources if your local public or academic library cannot help. (Public libraries sometimes have a wider selection of popular, as opposed to academic, publications—but may have no space to archive them.)

If you decide to study how broadcast content has changed, where will you get data for previous years? The Vanderbilt Television News Archive, with indexes and abstracts in most major university libraries, contains some of this information, although it is largely limited to news and documentary presentations. Some projects can be done using the abstracts alone, but these are an incomplete substitute for copies of the original broadcasts—which are also available but too expensive for most students on a budget.

Some cable or satellite systems broadcast reruns from the early years of TV, although this limits your study to what happens to be currently available. You might choose to focus on current content and rely on your literature review to tell you what things were like in past decades. In this case, be prepared to record the material you want to use so you can examine it closely.

Video or DVD rental businesses have prerecorded episodes from some television shows. Your choices will be limited to what's on their shelves, but perhaps you will find just the ones you want there. Of course, you can also make use of this resource if you decide to study film content. Quite a number of film review compilations should be available for reference in your library in order to help you narrow down your selection to material most relevant to your research question.

Because of the rapid evolution of the Internet as a major source of news, entertainment, and information for a large chunk of the population, various forms of Internet content are popular choices for student research, but this presents logistical difficulties of another kind because of the ephemeral nature of the content. While newspapers and magazines may archive their past stories on their Web sites—extremely convenient for researchers interested in print or Web news—most Internet content appears and disappears rapidly, making its capture for research purposes a challenge. Plan ahead.

Electronic archives that include a wide variety of print news material from both papers and magazines—often global in nature—should be available in your university library. One of the most popular is the LexisNexis database. This type of resource has become increasingly comprehensive and allows ready access to material over a fairly long time range (although the further back the year, the less certain you can be that the collection is complete). Comparative

studies of the news coverage created in different parts of the world are also possible using this type of resource—something that was extraordinarily difficult just 15 or 20 years ago.

Using Data From Existing Studies

Sometimes it is possible to do original research using data that have already been gathered by others. Given the cost and complexity of conducting a major public opinion survey, for example, beginning researchers interested in opinion formation or opinion trends should consider using data that have been gathered by others. Of course, if you use data someone else has gathered, he or she may not have studied the population you are most interested in, and he or she probably did not ask exactly the questions that you would most like to have had answered for your particular research problem. However, on practical grounds, reanalysis is becoming a more common and more broadly accepted alternative.

Depending on your research question, one way to use opinion data in a research study is simply to compile published information from a number of surveys. They can be examined for trends on a given issue. The results can be compared to trends in the amount and type of news coverage the issue has received. This type of research is almost always exploratory rather than hypothesis testing but can nevertheless yield important insights. Big commercial survey firms like Gallup, Roper, and Yankelovich offer some results to the public for free, either through their Web sites or a publication you might find in your library; you can also find newspaper or news magazine articles that incorporate opinion data. Be wary of the source; local newspapers may publish "fun polls" that don't yield good data. However, many larger media organizations do their own polls, sometimes in cooperation with a professional polling firm, and these can be rigorous and reliable. Good advice on evaluating poll data is available from the American Association for Public Opinion Research at http://www.aapor.org.

The Pew Foundation provides funding for a number of different opinion and media use studies; one of the best known is the Pew Internet & American Life Project at http://www.pewinternet.org. Pew and other not-for-profit foundations usually publish their studies for free on the Web, often in user-friendly form. Many colleges and universities belong to the Inter-university Consortium for Political and Social Research at the University of Michigan. The consortium's site at http://www.icpsr.umich.edu has archives of raw data available for reanalysis, as well as links to reports others have written using those data.

ICPSR also sponsors an undergraduate research paper competition for student papers that use data from its archive. If your university is a member, this is an excellent resource, although using the archive is likely to require access to, and knowledge of, sophisticated statistical software packages.

Sometimes it is possible to yield new results by compiling data from previously published experiments. This is called **meta-analysis** and is not always practical for beginners. Many published reports contain only summary statistics and not enough detail to be useful; the raw, unprocessed data may need to be requested from the author, and it may or may not be available or in a form that is ready for use by someone else. However, if you are strongly interested in a research question on which quite a number of studies have already been published, and if you are comfortable with statistical analysis, this is an alternative to think about.

Gathering New Data From People

Gathering new data from people is the alternative most people think of when they consider social science research. The researcher has control of the data collection (whether quantitative or qualitative, whether involving surveys, experiments, interviews, focus groups, or observations) and can collect exactly the data that he or she most wants in light of the research question guiding the study. Two big disadvantages include (a) the necessity to complete extra paperwork and allow extra time for human subjects (IRB) approval if required for class projects at your university and (b) the necessity to recruit volunteers to participate in the research. As you have already learned, getting a truly random sample for a survey is becoming increasingly difficult. Getting volunteers to participate in a focus group or an experiment or getting access to an organization you would like to study through participant observation is not easy either—but if you are motivated, it can often be done.

If your research question involves what people think or feel or how they act, and if you are willing to work through these hurdles, you will have the reward of being able to produce an original study that may add something truly new to our understanding of human social behavior. Most original data collection from people involves some level of compromise, so try not to be discouraged if you cannot get exactly the people you want to participate in your project.

One common alternative is to use your own classmates or other students at your university as study participants. This is easier for faculty who may be able to offer extra-credit incentives or even small cash payments or prizes to participants than it is for student researchers. Also, a student sample of volunteers is

not random or representative of people who are not students. However, perhaps your research question is specifically about student behavior—for example, how is the current generation using portable communication media like text messaging on cell phones or instant messaging programs on wireless-enabled laptops? In this case, using a student sample is ideal (even though it still won't be random because it will consist of volunteers willing to answer your questions or fill out your survey form).

In some cases, you might already work in a media organization, such as a television station, a newspaper, an advertising or public relations agency, or a Web design firm—even a student one—that would be an ideal site for participant observation. The permissions issue here is tricky; you might be required to get the approval of everyone with whom you work. But the rewards could be worth the trouble.

While big surveys are expensive, small local ones you can carry out yourself can be much less expensive yet be worth doing—again, depending on your research question. Since response rates on phone surveys are falling, going back to mail surveys or even door-to-door, in-person surveys might be an option, especially on a small-scale project. Market researchers often approach shoppers with their questions, which makes sense in a study of consumer choices. (Make sure the store or mall involved knows and approves of what you are doing, of course. You'll be on store or mall property.)

In the next chapters, you'll learn more about making and carrying out these important decisions. For now, the important point is that, as you work through and refine your research question, you should be thinking ahead as to what kind of data you might use to answer it and where this might come from. All quantitative studies (and some qualitative studies) make use of **variables**.

DEFINING AND MEASURING VARIABLES

The goal of all quantitative research is to measure something (whether opinions, knowledge or beliefs, attitudes, or media content) as precisely as possible, for purposes of answering a research question and perhaps testing hypotheses. A "variable" is any item whose value varies and that the researcher attempts to count or measure, whether for purposes of description or exploration or to test a formal hypothesis. Theory is generally what dictates which variables should be considered. Variables can have as few as two values; for example, gender is usually recorded as male or female. Or they can have many values; for example, your score on an exam can range

from 0% to 100%. Qualitative studies are not concerned with measurement and do not always use variables; however, some qualitative studies are concerned with identifying elements, such as themes, or descriptive variables, such as the demographic backgrounds of research participants (for example, focus group members).

Variables are usually intended to measure an underlying concept that may be more complex; such a variable is an **index** of the concept. Your score on an exam is supposed to represent your knowledge of the material, but your instructor usually cannot ask you about every item considered in the class, so he or she chooses some items to "stand in for" all of the others as an index of your knowledge. A **scale** is a type of measurement where the intervals between numbers are known to be the same, like length or weight measured by a ruler or household scale.

Up to this point, little has been said in this book about actually measuring variables. Some variables are straightforward. We are all familiar with miles per gallon as a variable describing the underlying fuel efficiency of a car. Worker productivity in an office can be measured in terms of the number of pages keyboarded, forms completed, telephone calls answered, products sold or distributed, or whatever the day-to-day activities of that particular office are. Other variables, such as attitudes, beliefs, or reasons, that may be of great theoretical interest may be much more difficult to conceptualize and to assess or measure. Media researchers are often interested in variables regarding media content, such as themes (which can also be assessed qualitatively), tone, and length.

Sometimes demographic variables, like gender, age, or income, have no special theoretical significance but are collected anyway to make certain that the respondents or subjects in the study are approximately as diverse as the population being studied. For example, if all of the volunteers for an experiment with college students were journalism majors, the results might not apply to those majoring in other fields.

In human subjects studies, it is also common to use demographic variables as **control variables** to rule out the possibility that differences observed in a survey or an experiment are really the result of a hypothesized relationship and not just a chance characteristic of particular groups of people. For example, let's say your hypothesis states that the more video games a high school student plays, the lower his or her standardized test score on reading. Let's also suppose that boys spend more time playing video games, on average, and girls have higher reading scores, on average. We wouldn't know whether it was gender or playing time that was causing this difference. To find out, we might want to look at the relationship between video game playing and reading scores just for boys and just for girls.

Reliability and Validity

Whether collected by means of a survey, an experiment, or a content analysis, quantitative data must be as reliable and valid as possible.

Reliability means that repeating the same procedure would be highly likely to generate nearly the same result. If a survey question is so ambiguous that the same person might answer it differently at different times, or if content analysis uses categories that mean entirely different things to different people, the results lack reliability. Sometimes reliability is explained by analogy to a simple and familiar measurement instrument—a ruler. Using an unreliable measure is like using a ruler that stretches, shrinks, or otherwise changes shape when you're not looking. The results have little meaning.

Validity refers to whether you are measuring the things you think you're measuring—those that interest you on a theoretical level. If you are interested in violence in children's television but measure only the number of screams you hear on the soundtrack, your measurement could be invalid (even if reliable) because some could be screams of excitement, and some violence might be silent. If you use a number of different survey questions to measure the same underlying concept, the answers from individual respondents should be interrelated. Otherwise, it may be that the different questions are measuring different things.

Reliability and validity are extremely important measurement concepts for all quantitative studies; they take many forms, and advanced texts often discuss several different kinds. Although different experts emphasize slightly different aspects of these concepts, all agree that they are critical to meaningful measurement. The more abstract a concept, the more difficult it is to achieve a reliable and valid measure. Social psychologists who are interested in attitudinal research or other complex quantitative studies involving abstract variables often spend large amounts of their effort on measurement issues.

Qualitative studies may also be concerned with reliability and validity but in somewhat different ways. For qualitative researchers, reliability means that an observation is not so unique to the individual researcher that someone else would not see the same thing, and this is sometimes assessed numerically. Validity rests primarily in whether the researcher's descriptions are legitimate ones that adequately capture the nature of a social setting.

Independent and Dependent Variables

In experimental design, the independent variable is a variable whose value determines (partly or completely) the value of a dependent variable. The independent variable can generally be changed or manipulated by the experimenter, whereas the dependent (or outcome) variable cannot. For example, if we want

to see which of three advertising messages is more persuasive in terms of our subjects being willing to buy the advertised product, the message would be the independent variable, and willingness to buy would be the dependent variable. We would probably set up three **treatment groups** of subjects—one that saw message A, one message B, and one message C—and then ask each group how likely its members were to buy. We would also want to have a fourth group, called a **control group**, that didn't see any of the messages for comparison.

Although easiest to understand in the context of an experimental design, where they originated, the concepts of independent and dependent variable also apply in survey research and in content analysis. In survey research, we may ask one group of questions about political affiliation and another about voting intention. Logically, political affiliation would be considered the independent variable, and voting intention the dependent variable, because we would expect the affiliation to influence the intention rather than the other way around. However, in survey work, we cannot rule out that relationships may go in a different direction than we predict. Voters, for example, might change their sense of affiliation if they decide they like the other party's candidate better. Now affiliation has become a dependent variable, and intention is the independent variable.

In content analysis, we might hypothesize (for example) that small-town newspapers are less likely to report controversies involving local government than are big-city papers. Size of community is the independent variable, and frequency with which controversy is reported is the dependent variable. In this situation, however, we could also have a problem with a **confounding variable** that confuses our results. Perhaps big-city governments actually have more controversy than small-town governments, which means that any difference observed might not be due to reporting styles but to external events. In this case, we would have to find some way to "control for" the actual occurrence of controversies. This might turn out to be difficult. Our design may have a built-in limitation that we cannot remove.

Operationalization and Levels of Measurement

Defining a variable in a way that allows it to be measured is called **operationalization**. Sometimes this is fairly straightforward; for example, time spent watching television can be operationalized as the number of minutes per day spent in the same room with a television set that is turned on. Note that even in this simple example, the operationalization is not perfect, however. Someone could be in the room with the TV on and not be watching, but as a practical matter, we might decide to ignore this possibility because of the complexities of measurement it introduces.

Once again, the more abstract the concept, the more challenging the operationalization can become. The term *social presence* is being used in new media studies to indicate the degree to which a person might feel he or she is "really there" in an online environment or "really" connected to other people in the same environment. This has implications for the effectiveness of distance education or marketing strategies that rely on online interaction, for example. But how is a feeling of "social presence" best operationalized? There is no one immediate answer to this question.

When a researcher makes a decision about how to measure a variable, he or she should also consider what **level of measurement** is involved with a particular operationalization. Some "measures," such as gender or the network affiliation of a TV station, are simple categories. Others are true numerical scales that more precisely measure the degree of presence or absence of certain properties, such as personality characteristics or positive versus negative attitudes. More about levels of measurement is presented in a later chapter. However, even in the design stage, it is important to think ahead about this, because the level of measurement determines the types of statistical analysis that can be used with the data.

Important Terms and Concepts

Academic journal
Blind review
Confounding variable
Control group
Control variable
Index
Level of measurement
Meta-analysis
Operationalization
Peer review
Reliability
Research question
Scale
Theoretical concept
Treatment group
Validity
Variable

Exercise

Whether or not your instructor requires you to complete a small-scale research project in this class, reviewing the literature on a research question that interests you will improve your understanding of how theory and

methods are actually used in research. This exercise is designed to get you started, not produce a complete review.

1. Write a tentative research question within the general area of media studies that interests you. It is important to actually write the question down. Be as specific as possible.
2. Using the language of your question, identify at least three keywords that you might use to search library databases for published research articles in the media studies or communication literature.
3. Either online or in person, use these keywords in at least two library databases listed as either "general" or "communications" indexes. How many publications do you turn up?
4. Try the same keywords under at least one library database in another related field, like psychology, sociology, or engineering. How many publications turn up this time?
5. From the three searches, select, locate, and read at least three articles that you believe would definitely help you in refining your research question and designing a study to answer it. Summarize each in your own words in a couple of sentences, stressing the points of intersection with your own ideas.
6. Your instructor may want you to submit a short report, including your research question, keywords, and summaries, for course credit.