

## Chapter 1

# An Introduction to Writing Reviews of Academic Literature

In this book, you will be learning how to write a review of the literature using primary (original) sources of information in the social and behavioral sciences. By far, the most common primary sources are reports of empirical research published in academic journals. This chapter begins with a brief overview of this type of source. It is followed by brief descriptions of four other types of literature found in journals: theoretical articles, review articles, anecdotal reports, and reports on professional practices and standards. This is followed by a brief discussion of the writing process you will be using as you write your review. This discussion also serves as an overview of the rest of the book, which was designed as a guide for students who are new to the specialized requirements of writing a literature review in the social and behavioral sciences.

### **An Introduction to Reviewing Primary Sources**

#### *Why Focus on Empirical Research Reports?*

The focus of this book is on *original* reports of research found in academic journals. They are *original* because they are the first published accounts of the research. As such, they are *primary sources* of information, providing detailed reports on the methodology used in the research and detailed descriptions and discussions of the findings. In contrast, research summaries reported in textbooks, popular magazines, and newspapers as well as on television and radio are usually *secondary sources*, which often provide only global descriptions of results with few details on the methodology used to obtain them. As scholars, you will want to emphasize primary sources when you review the literature on a particular topic. In fact, your instructor may require you to cite these sources exclusively in your written reviews of literature.

Journals in the social and behavioral sciences abound with original reports of *empirical research*. The term *empirical* refers to *observation* while the term *empirical research* refers to *systematic observation*. Research is systematic because researchers plan in advance whom to observe, for what characteristics to observe, how to observe, and so on. While such research is the foundation of any science, one could reasonably argue that all empirical research is inherently flawed and, hence, the results obtained with research should be interpreted with caution. For example, listed below are three major problematic issues that arise in almost all empirical studies and the problems they pose for students who review them.

- *Issue 1: Sampling.* Most researchers study only a sample and infer that the results apply to some larger group (often called the population). Furthermore, most use samples with some kind of bias that makes them unrepresentative of the populations of interest.<sup>1</sup> For instance, suppose a professor conducted research using only students in his or her introductory psychology class or suppose a researcher mailed a questionnaire and obtained only a 40% return. Clearly, these samples might not be representative of the populations of interest.

Problem: A reviewer needs to consider sampling bias, if there is any, in interpreting the results of a study. Deciding how much trust to put in the results of a study based on a biased sample is a highly subjective judgment.

- *Issue 2: Measurement.* Almost all instruments used for measurement in empirical research should be presumed to be flawed to some extent. For example, suppose a researcher uses a self-report questionnaire to measure the incidence of marijuana use on a campus. Even if respondents are assured that their responses are confidential and anonymous, some might not want to reveal their illegal behavior. On the other hand, others might be tempted to brag about doing something illegal even if they seldom or never do it. So what are the alternatives? One is to conduct personal interviews, but this measurement technique also calls for revelation of an illegal activity. Another alternative is a covert observation, but this technique might be unethical. On the other hand, if the observation is not covert, participants might change their behavior because they know they are being observed. As you can see, there is no perfect solution.

Problem: A reviewer needs to consider the possibilities for error in measurement. Ask yourself whether the method of measurement seems sound. Did the researcher use more than one method of measurement? If so, do the various methods yield consistent results?

- *Issue 3: Problem identification.* Researchers usually examine only a piece of a problem—often just a very small piece. Here is an example: Suppose a researcher wants to study the use of rewards in the classroom and its effects on creativity. At first, this sounds manageable as a research problem until one considers that there are many kinds of rewards—many kinds and levels of praise, many types of prized objects that might be given, and so on. Another issue is that there are many different ways in which creativity can be expressed. For example, creativity is expressed differently in the visual arts, in dance, and in music. Additional forms of creativity can be expressed in the

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<sup>1</sup> If you have taken a course in research methods or statistics, you know that random sampling (like drawing names out of a hat) is preferred over biased sampling. Note, however, that random sampling introduces chance errors, which can be assessed with inferential statistics, a topic that is beyond the scope of this book.

physical sciences, in oral expression, written communication, and so on. No researcher has the resources to examine all of these. Instead, he or she will probably have to select one or two types of rewards and one or two manifestations of creativity and examine them in a limited number of classrooms.

**Problem:** A reviewer needs to synthesize the various research reports on narrowly defined problems in a given area, looking for consistencies and discrepancies from report to report while keeping in mind that each researcher defined his or her problem in a somewhat different way from the others. Due to the fact that empirical research provides only approximations and degrees of evidence on research problems that are necessarily limited in scope, creating a synthesis is like trying to put together a jigsaw puzzle, knowing in advance that most of the pieces are missing and that many of the available pieces are not fully formed.

Considering the three issues presented above, you might be tempted to conclude that reviewing original reports of empirical research is difficult. Undoubtedly, it sometimes is. However, if you pick a topic of interest to you and thoroughly read the research on that topic, you will soon become immersed in a fascinating project. On the vast majority of topics in the social and behavioral sciences, there are at least minor disagreements about the interpretation of the available research data and, often, major disagreements. Hence, you may soon find yourself acting like a juror, deliberating about which researchers seem to have the most cohesive and logical arguments, which ones have the strongest evidence and so on.

You might also incorrectly conclude that only students who have intensively studied research methods and statistics can make sense of original research reports. While such a background undoubtedly is helpful, this book was written with the assumption that any intelligent, careful reader can make sense out of a body of empirical research if he or she reads carefully and extensively on the topic selected for review. Authors of reports of original research do not just present statistics in isolation. Instead, they usually provide definitions of basic concepts, discuss their theoretical orientations, describe their reasoning for approaching their research in the way they did, and offer interpretations moderated by discussions of the limitations of their methodology. In fact, it is common for these writers to provide separate sections, usually near the end of their reports, in which they pause to discuss the methodological limitations of their studies and the implications of the limitations for interpreting their results. In other words, a skilled author of a report on original empirical research will guide you through the material even if you do not understand all the research jargon and statistics.

**One final consideration:** It is essential that you carefully and thoroughly read all the research articles that you cite. Reading only the brief abstracts (summaries) at the beginning of such articles may mislead you because of the lack

of detail and, therefore, cause you to mislead the readers of your literature review. Thus, it is your ethical responsibility to read each cited reference in its entirety.

### *Another Kind of Primary Source: Theoretical Articles*

Not every journal article is a report of original research. In fact, some articles are written for the explicit purpose of evaluating an existing theory or to propose a new one. Remember, a *theory* is a general explanation of why variables work together, how they are related to each other, and especially, how they influence each other. As a unifying construct, a theory helps to explain how seemingly unrelated empirical observations tie together and make sense. Here is a brief example:

Weiss (1975) proposed a *relational theory of loneliness*. Among other things, this theory distinguishes between *emotional loneliness* (utter loneliness created by the lack of a close emotional attachment to another person) and *social loneliness* (feelings of isolation and loneliness created by the absence of a close social network). This theory has important implications for many areas of social and behavioral research. For example, if the theory is correct, it would predict that someone who is in bereavement due to the death of a spouse with whom they had a close emotional attachment will experience utter loneliness that cannot be moderated through mere social support.<sup>2</sup>

Notice two things about the example given above. First, the prediction based on the theory runs counter to this common sense notion: that those who are lonely due to the loss of a significant other will feel less lonely with the social support of family and friends. The theory suggests that this notion is only partially true at best. Specifically, it suggests that family and friends will be able to lessen only *social loneliness* but be ineffective in lessening the more deeply felt and potentially devastating *emotional loneliness*. Note that it is not uncommon for a theory to lead to predictions that run counter to common sense. In fact, this is a hallmark of theories that make important contributions to understanding human affairs and our physical world.

Second, Weiss' theory can be tested with empirical research. A researcher can study those who have lost significant others, asking them about how lonely they feel and the types and strength of support they receive. To be useful, a theory should be testable with empirical methods, which helps the scientific community determine the extent of its validity.

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<sup>2</sup> This example is based on material in Stroebe, W., Stroebe, M., Abakoumkin, G., & Schut, H. (1996). The role of loneliness and social support in adjustment to loss: A test of attachment versus Stress Theory. *Journal of Personality and Social Psychology*, 70, 1241-1249. Also, see Weiss, R.S. (1975). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.

Your job in reviewing literature will be made easier if you identify the major theories that apply to your topic of interest. Writers of empirical research reports often identify underlying theories and discuss whether their results are consistent with them. Following up on the leads they give you in their references to the theoretical literature will provide you with a framework for thinking about the bits and pieces of evidence you find in various reports about specific, usually narrow, research projects that are published in academic journals. In fact, you might choose to build your literature review around one or more theories.

It is important to note that a literature review that contributes to a better understanding of one or more theories has the potential to make an important contribution to the writer's field because theories often have broad implications for many areas of concern in human affairs.

### *Literature Review Articles*

Journals often carry literature review articles,<sup>3</sup> that is, articles that review the literature on a specific topic—much like the literature review that you will be writing while using this book. Most journals that publish review articles set a relatively high standard for accepting such articles. Not only should they be well-written analytical narratives that bring readers up to date on what is known about a given topic, but they should also provide fresh insights that advance knowledge. These insights may take many forms. Some major ones are: resolving conflicts among studies that previously seemed to contradict each other, identifying new ways to interpret research results on a topic, and laying out a path for future research that has the potential to advance the field significantly. As a result, going through the steps of preparing a literature review is not an easy way to get published in a journal. In fact, when you begin reviewing the literature on a topic, there is no guarantee that you will arrive at the level of insight that will pass the scrutiny of a journal's editorial board. However, if you follow the guidelines outlined in this book, which emphasize analyzing literature (casting a critical eye on it; pulling it apart, sometimes into pieces and bits; and putting them back together in a new form), you stand a better chance than the average academic writer of producing a review suitable for publication.

It is worth noting that sometimes students are discouraged when they find that their topic has recently been reviewed in an academic journal. They may feel that if it was already reviewed, they should select a different topic. This is not necessarily a wise decision. Instead, these students usually should feel fortunate to have the advantage of someone else's labor and insights—someone that can be cited, someone on whose work they can build or with whom they can agree or disagree. Writing is an individual process, so two people reviewing the same body

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<sup>3</sup> Some journals also carry book reviews, test reviews, and reviews of other products and services. These will not be considered in this book. Hence, the term "review article" in this book refers only to a *literature* review article.

of literature are likely to produce distinctly different, but potentially equally worthy reviews.<sup>4</sup>

### *Anecdotal Reports*

As you review the literature on a specific topic, you may encounter articles that are built on anecdotal accounts of personal experiences. An anecdote is a description of an experience that happened to be noticed (as opposed to an observation that is based on research, in which there was considerable planning regarding whom and what to observe as well as when to observe a particular phenomenon in order to gather the best information). Anecdotal accounts are most common in journals aimed at practicing professionals such as clinical psychologists, social workers, and teachers. For example, a teacher might write a journal article describing his or her experiences with a severely underachieving student who bloomed academically while in his or her classroom. Other teachers may find this interesting and worth reading as a source of potential ideas, but as a contribution to science, such anecdotes are seriously deficient. Without control and comparison, we do not know to what extent this teacher has contributed to the student's progress, if at all. Perhaps the student would have bloomed without the teacher's efforts because of improved conditions at home or because of a prescription drug for hyperactivity prescribed by a physician without the teacher's knowledge. Given these limitations, anecdotal reports should be used very sparingly in literature reviews, and when they are cited, they should be clearly labeled as being anecdotal.

### *Reports on Professional Practices and Standards*

Some journals aimed at practicing professionals publish reports on practices and standards such as newly adopted curriculum standards for mathematics instruction in a state, or proposed legislation to allow clinical psychologists to prescribe prescription drugs. When these types of issues are relevant to a topic being reviewed, they often merit discussion in a literature review.

## **The Writing Process**

Now that we have considered the major types of materials you will be reviewing (reports of empirical research, theoretical articles, literature review articles, articles based on anecdotal evidence, and reports on professional practices and standards), we will briefly consider the process you will follow in this book.

An important, and often overlooked, distinction is made in this book between *conducting* a literature review (i.e., locating literature, reading it, and

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<sup>4</sup> Keep in mind that empirical knowledge is an ever-evolving process—not a set of facts. Nothing is proven by empirical research; rather, we use research to arrive at varying degrees of confidence. Thus, researchers may differ in their *interpretations* even if they review the same literature.

mentally analyzing it) and *writing* a literature review. Needless to say, one needs to first locate, read, and analyze literature before a review can be written. Furthermore, writing a literature review involves a series of steps. In the field of composition and rhetoric, these steps collectively are referred to as the writing process. They include planning, organizing, drafting, editing, and redrafting. More specifically, the process involves defining a topic and selecting the literature for review (planning); analyzing, synthesizing, and evaluating the articles being reviewed (organizing); writing a first draft of the review (drafting); checking the draft for completeness, cohesion, and correctness (editing); and rewriting the draft (redrafting). The process is much like the one you may have followed in your freshman English class when you were asked to write an analytical essay. The organization of this book follows these steps in the writing process.

### *Writing for a Specific Purpose*

The first order of business is to consider your reasons for writing a literature review. Reviews of empirical research can serve several purposes. They can constitute the essence of a research paper in a class, which can vary in length and complexity depending on the professor's criteria for the paper. In a journal article, the literature review is often brief and to the point, usually focusing on providing the rationale for specific research questions. In contrast, the literature review in a thesis or dissertation is usually meant to establish that the writer has a thorough command of the literature on the topic being studied. Obviously, these different purposes will result in literature reviews that vary in length and style. Chapter 2, *Considerations in Writing Reviews for Specific Purposes*, describes the differences in these three kinds of reviews.

### *Planning to Write*

The first two tasks in planning to write a review of empirical research are defining the topic and locating relevant research articles. These steps are interrelated—the topic you specify will determine the specific literature you identify, and oftentimes the results of your literature search will guide you in defining the topic. Sometimes your instructor will assign a specific topic for a term paper; other times, the choice will be left up to you. The process of defining the topic is the first step covered in Chapter 3, *Selecting a Topic and Identifying Literature for Review*.

The remainder of Chapter 3 deals with the process of *selecting relevant journal articles*. Research libraries are not what they used to be. While searching the library's stacks may prove fruitful for you, it can be a hit-or-miss experience because a library's holdings will vary greatly depending on resources, availability, and even vandalism. A better option is to search the available databases and World Wide Web resources. Reference librarians can help you get started, or you can sign up for a workshop on how to use new electronic resources. This book is

designed to teach you some of the basic steps involved in searching databases. However, keep in mind that each database has its own unique features. It is beyond the scope of this book to describe these differences in detail.

Once you have located an adequate collection of articles concerning your topic, you should read and analyze them. This step is called the *analysis*—this involves reading an article and taking notes. In other words, as you read, you separate the author's prose into its parts or elements. Because you will be analyzing a number of articles, you will need to prepare a systematic collection of notes. Part of the analysis process is sifting the elements on which you made notes, retaining the pertinent ones, and discarding those you do not need. This step is the subject of Chapter 4, *General Guidelines for Analyzing Literature*.

It is sometimes necessary to read and analyze the literature from a more specialized perspective. For example, if your literature review is part of a research study you are planning to conduct, either in preparing to write a thesis or dissertation or in writing an article intended for publication in a journal, you will want to pay special attention to Chapter 5, *Analyzing Literature from the Viewpoint of a Researcher*, which provides a brief overview of more technical issues.

### *Organizing Your Notes and Your Thoughts*

Having followed the above steps, you should begin creating a synthesis, which involves putting the parts from your notes back together into a new whole. Think of it like this: Each of the articles you have read constitutes its own whole; in your research notes, you have written down parts or elements from each article; now, you should put these notes back together in the form of a new organizational framework. Once you have created the new framework, you should evaluate the contents. In other words, you now need to describe your evaluation of the quality and importance of the research you have cited. These steps are covered in Chapter 6, *Synthesizing Literature Prior to Writing a Review*.

### *Drafting, Editing, and Redrafting*

Next, you should write your first draft. Based on your audience, you should decide whether you will write in a formal or less formal *voice*. An effective writer is aware of the reader's expectations. A term paper written for a professor who is knowledgeable in a particular field is different from a literature review in a thesis, which may be read by readers who are curious, but not necessarily knowledgeable, about a topic. A literature review in a thesis is different from a literature review in an article intended for publication in a journal or in a paper for a class. You should also identify the major subtopics and determine the patterns that have emerged from your notes, such as trends, similarities, contrasts, and generalizations. These steps are covered in Chapter 7, *Guidelines for Writing a First Draft*.



Next, you should make sure that your argument is clear, logical, and well supported, and that your draft is free of errors. Chapter 8, *Guidelines for Developing a Coherent Essay*, will help you make sure that your argument makes sense to you and your reader. Chapter 9, *Guidelines on Style, Mechanics, and Language Usage*, describes the first steps in making sure that your review is free of errors.

The final two chapters of the book coincide with the last two steps in the writing process: editing and redrafting. These steps are iterative, that is, they are meant to be repeated. It is not uncommon for a professional writer to rewrite five or more drafts, each time producing a refined new draft. Chapter 10, *Incorporating Feedback and Refining the First Draft*, provides guidelines on how to approach this stage in the writing process. Finally, Chapter 11, *Comprehensive Self-editing Checklist for Refining the Final Draft*, gives a detailed checklist for use in editing your own manuscript for style and correctness. Formal academic writing requires that you prepare a manuscript as free of errors as possible, and this checklist will help you accomplish this goal.

## Activities for Chapter 1

1. Locate an original report of empirical research in your field, read it, and respond to the following questions. (How to locate journal articles on specific topics is covered in considerable detail later in this book. At this point, simply locate one in your general field of study. Your reference librarian or instructor can help you identify specific journals in your field that are available in your college library. Scan the tables of contents for a research article on a topic of interest and make a photocopy to bring to class with your answers.) Note that your instructor may want to assign a particular article for this activity.
  - A. Are there any obvious sampling problems? Explain. (Do not just read the section under the subheading "sample" because researchers sometimes provide additional information about the sample throughout their reports, especially in the introduction where they might point out how their sample is different from those used by other researchers or near the end where they might discuss the limitations of the sample in relation to the results.)
  - B. Are there any obvious measurement problems? Explain.

- C. Has the researcher examined only a narrowly defined problem? Is it too narrow? Explain.
  - D. Did you notice any other flaws? Explain.
  - E. Overall, do you think that the research makes an important contribution to advancing knowledge? Explain.
2. Read Review Article A in the Supplementary Readings section at the end of this book and respond to the following questions. (Note that you will want to read this review again after you have learned more about the process of writing a literature review. The questions below ask only for your first, general impressions. Later, you will be able to critique it in more detail.)
- A. Have the reviewers clearly identified the topic of the review? Have they indicated its delimitations (e.g., Is it limited to a certain period of time? Does it deal with only certain aspects of the problem?)
  - B. Have the reviewers written a cohesive essay that guides you through the literature from subtopic to subtopic? Explain.
  - C. Have the reviewers *interpreted* the literature (as opposed to merely summarizing it)? Explain.
  - D. Overall, do you think the reviewers make an important contribution to knowledge? Explain.

## Chapter 2

# Considerations in Writing Reviews for Specific Purposes

Although the guidelines given in this book apply to any literature review, you will want to vary your approach to the writing task depending on your purpose for writing your review. This chapter focuses on the three most common purposes for writing a critical review of research and the audience for each type: writing a literature review as a term paper for a class, as a chapter for a thesis or dissertation, and as part of an introduction to a journal article.

### **Writing a Literature Review as a Term Paper for a Class**

Writing a literature review as a term paper assignment for a class can be somewhat frustrating because the task involves (a) selecting a topic in a field that may be new to you, (b) identifying and locating an appropriate number of research articles using databases and journals that you may not be familiar with, and (c) writing and editing a well-developed essay, all in about two to three months. To compound matters, most instructors will expect you to prepare your review of literature on your own outside of class with minimal guidance from them. Still, they expect that your literature review will be thoroughly researched and well written. This book will help you accomplish this.

With these difficulties in mind, it is necessary for you to plan your term paper project carefully. First, you should make sure you understand the assignment and know as much as possible about your instructor's expectations near the beginning of the semester. Thus, you should not hesitate to raise questions in class regarding the assignment. Keep in mind that if something is not clear to you, it may be unclear to other students who will benefit by hearing the answers to your questions.<sup>1</sup> Second, you will have to pace yourself as you undertake the writing process. Make sure that you allow sufficient time to follow the steps outlined in this book, including selecting a topic, reading and evaluating the relevant research articles, synthesizing and organizing your notes, writing, revising, and redrafting your paper, and editing it for correctness and adherence to

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<sup>1</sup> Idiosyncratic questions that other students may not find of interest generally should be raised with the instructor outside of class, perhaps during office hours. Examples are: You are planning to go to graduate school and want to write a more extensive paper than required by the professor. You have written a literature review for a previous class and would prefer to expand on it rather than write a new review.

the required style manual. It is helpful to map out the weeks of your school term and lay out a timeline. The following is a suggested timeline for a 15-week semester.

### Example 2.1

- Stage 1. Preliminary library search and selection of topic  
*Complete by the end of Week 3*
- Stage 2. Reading list and preliminary paper outline  
*Complete by the end of Week 6*
- Stage 3. First draft of paper  
*Complete by the end of Week 12*
- Stage 4. Revised final draft of paper  
*Complete by the end of Week 15*

Individual instructors' expectations regarding length of a written review and the number of references cited may vary widely. For term papers written for introductory survey courses, instructors may require only a short review—perhaps as short as a few double-spaced, typewritten pages with a minimum of five to ten references. For such a review, you will need to be highly selective in identifying and citing references—usually selecting those that are the most important and/or most current. For upper-division courses, instructors may require longer reviews with more references. Finally, for graduate-level classes in your academic major, your instructor may place no restrictions on length or number of references, expecting you to review as many research reports as needed to write a comprehensive literature review on your topic.

Given the limited time frame for writing a term paper, your topic should usually be kept narrow. Look for an area that is well defined, especially if you are new to a field. A good way to select a topic is to examine the subheadings within the chapters in your textbook. For example, an educational psychology textbook might have a chapter on creativity with subsections on definitions of creativity, the measurement of creativity, and fostering creativity in the classroom. As an example, suppose you are especially interested in fostering creativity in the classroom. Reading this section, you might find that your textbook author mentions that there is some controversy on the effects of competition on promoting creativity (i.e., can teachers foster creativity by offering rewards for its expression?). This sounds like a fairly narrow topic that you might start with as a tentative topic. As you search for journal articles on this topic,<sup>2</sup> you may find that

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<sup>2</sup> Searching electronic databases with an emphasis on how to narrow the search is discussed in detail in the next chapter.

there are more articles on it than you need for the term project assignment. If so, you can narrow the topic further by specifying that your review will deal with competition and creativity only in (a) elementary school samples and (b) the fine arts.

If you are not given a choice of topics and are assigned a topic by your instructor, begin your search for literature as soon as possible and report to him or her any difficulties you encounter such as finding that there is too little research on the assigned topic (perhaps the topic can be broadened or your instructor can point you to additional sources your search did not identify) or there is too much research (perhaps the topic can be narrowed or your instructor can help you identify other delimiters such as reviewing only recent articles).

One of the consequences of having a short time frame for preparing a term paper is that opportunities for feedback on your early drafts will be limited, so you will be responsible for doing much of the editing yourself. When you lay out your timeline, try to leave time to consult with your instructor about your first draft, even if this has to be done during an office visit. It sometimes helps students to be able to see an example of an acceptable term paper written by a student in a previous term. Many instructors will permit you to review sample papers. Finally, you should use the self-editing guide at the end of this book to help you eliminate some common problems before you turn in your paper.

### **Writing a Literature Review Chapter for a Thesis or Dissertation**

The review chapter for a thesis or dissertation is the most complex of the literature review types covered in this book because you will be expected to prepare the initial literature review as part of your research proposal, well before you begin your actual research. Conducting a literature review is one of the steps you will follow in the process of defining the research questions for your study, so you will probably have to redefine your topic and revise your research questions several times along the way.

Students writing a literature review chapter frequently ask, "How many articles must I read?" In addition, they ask, "How long should I make the review?" Students often are frustrated when they hear that there are no preset minimums either on the number of research articles to review or on the length of a review chapter.

You should establish two main goals for your literature review. First, attempt to provide a *comprehensive* and *up-to-date* review of the topic. Second, try to demonstrate that you have a thorough command of the field you are studying. Keep in mind that the literature review will provide the basic rationale for your research, and the extent to which you accomplish these goals will contribute in

large measure to how well your project will be received. Note that these goals reflect the seriousness of the task you have undertaken, which is to contribute to the body of knowledge in your field. Several traditions that have evolved through the years reflect how seriously academic departments view the writing of a thesis or dissertation. They include the defense of the research proposal, the defense of the finished thesis or dissertation, and the careful scrutiny given the final document by the university's librarian prior to its acceptance as a permanent addition to the library's holdings.

Some students procrastinate when it comes to writing a literature review chapter. After all, there are no set timelines. Therefore, it is important for you to set deadlines for yourself. Some students find it useful to plan an informal timeline in collaboration with the committee chair, perhaps by setting deadlines for completing the various steps involved in the overall process. The guidelines described in this book will be helpful in this regard. You should adopt a regular pattern of consulting with the professors on your committee to ensure that you remain focused and on track.

Finally, the level of accuracy expected in a thesis or dissertation project is quite high. This will require that you edit your writing to a level that far exceeds what may be expected in a term paper assignment. Not only must your writing conform to the particular style manual used in your field, but it should also be free of mechanical errors. The guidelines in Chapter 9 and the self-editing guide in Chapter 11 will help you accomplish this. Make sure that you allow enough time to set your draft aside for at least a few days prior to editing your writing and expect to use the self-editing guide several times before you give your adviser a draft of the review.

### **Writing a Literature Review for a Journal Article**

The literature review section of a journal article is the most straightforward of the three types of reviews covered in this book. Literature reviews in journal articles are shorter and more focused because their major purpose is to provide the background and rationale for specific and often very narrow research projects.

On the other hand, these reviews will undergo a level of scrutiny that may exceed even that which your thesis or dissertation review underwent. Article submissions for refereed journals are routinely evaluated by two or three of the leading scholars in your area of research. This means that your article should not only reflect the current state of research in your topic, but it should also be error free. Here again, the self-editing checklist from Chapter 11 should be carefully applied.

Frequently, an author will write a journal article a year or more after the research was conducted. This often happens when students decide to write article-length versions of their thesis or dissertation research. If this applies to you, search through the latest issues of the journals in your field to make sure that your literature review cites the very latest work published on your topic.

Although there is some variation among journals, the literature review in a journal article is usually expected to be combined with the introduction, that is, the introduction to the research is an essay that introduces readers to both the topic and purpose of the research while providing an overview of the relevant literature. Therefore, the emphasis of the review should be on establishing the scientific context in which a particular study was conducted and how it contributes to the field. In other words, it should help demonstrate the rationale for the original research reported in the article. As such, it is typically much more narrow and focused than a literature review chapter for a thesis or dissertation.

## Activities for Chapter 2

1. What is your purpose for writing a literature review?
  - A. As a term paper for a class.
  - B. As a chapter for a thesis or dissertation.
  - C. As part of the introduction to a journal article.
  - D. Other: \_\_\_\_\_
2. If you are writing a literature review as a term paper, has your instructor assigned you a specific topic to review? If yes, write the topic here. Also write any questions you need to ask your instructor.
3. If you are writing a literature review as a term paper and your instructor has not assigned you a specific topic, briefly describe two or three possible topics here. (If you are at a loss, examine your textbook for ideas.)
4. If you are writing a literature review for a thesis or dissertation, write the topic here.

5. If you are writing a literature review for a thesis or dissertation, what is your timeline for completing the first draft? Share your timeline with your instructor for feedback.
  
6. If you are writing a literature review for a thesis or dissertation, read the literature review chapters in at least three of the theses or dissertations approved by your committee chair. These are normally housed in the university library. Then, interview your committee chair to clarify the expectations. Make notes here on what you learned about what is expected in such a chapter.
  
7. If you are writing a literature review for a journal article, name your research purpose or hypothesis. After you have read the literature on your topic, revise your purpose or hypothesis, if necessary, in light of the literature. (Remember that a research purpose or hypothesis should flow directly and logically from the literature reviewed.)



## Chapter 3

# Selecting a Topic and Identifying Literature for Review

“Where should I begin?” This may be the most commonly asked question by students preparing to write a literature review. While there is no easy answer, this chapter was designed to illustrate the process for getting started used by many professional writers and researchers. Keep in mind that writing is an individual process, so the procedures described here are intended to be used as a road map rather than as a prescription. By working through this chapter, you will be able to develop two important products that will help you begin writing an effective literature review—a written description of your topic and a working draft of your reading list.

Obviously, the first step in any kind of academic writing is to decide what you will write about, but the specific path you follow in working through this step will vary depending on your purpose for writing a literature review. The previous chapter described the three most common reasons for writing literature reviews.

In any of these types of literature reviews, you usually should narrowly define your topic. Example 3.0 presents a topic that is much too general. In fact, it is the title of a survey course taught at many major universities and represents an extensive body of literature.

### **Example 3.0**

General Topic: Child Language Acquisition

Obviously, the topic in Example 3.0 will have to be narrowed down considerably before it can be used effectively to produce a manageable literature review. The steps that follow will guide you through a process that will result in better alternatives to this example.

### **✓ Step 1: Search an appropriate database.**

Before you select a database and search it, you need to select at least a general topic. Let's suppose you select this topic: Child Language Acquisition, which is general and will yield more references than you can possibly use, as you will see below. Nevertheless, it is usually all right to start with a general topic, see how much literature there is on it, and then narrow the topic to a more manageable one, a process that you will learn about in this chapter.

A general search using the topic in Example 3.0 will yield many thousands of records. Therefore, you should specify a set of parameters that will give you a focused result. For example, you can limit your search to journal articles, which is recommended; or you can specify a limited range of publication dates, perhaps going back three to five years, which is also recommended. A sample search conducted in the Educational Resource Information Center (ERIC) database using the general topic in Example 3.0 yielded the results in Example 3.1.1, presented in the order of the steps followed.

### Example 3.1.1

Step	Number of Records
Search with descriptor "language acquisition":	13,826
Limit search to journal articles AND to publication dates of 1995-present:	787
Further limit the search to "child language":	107

Note that for each article that is identified by the database, you will be given an abstract and a list of *descriptors*. These are the terms and phrases that describe the article's contents. Most databases compile descriptors in a *thesaurus*,<sup>1</sup> which is a kind of glossary or wordbook containing the major subject-matter terms used in a given field of study. For example, the descriptors "child language" and "language acquisition" are among thousands of descriptors found in the ERIC thesaurus. In the search of a database, the connectors "AND" and "OR" will produce vastly different results. For example, "language acquisition" AND "child language" will produce fewer references than "language acquisition" OR "child language" because the former selects entries that have both descriptors present whereas the latter selects entries that contain at least one of the two descriptors. See Appendix A for a brief explanation of how to use such connectors when searching electronic databases.

Appendix B contains the 107 records obtained by using the procedures described here. Note that the ERIC database was used in this example because its holdings are comprehensive and encompass several disciplines with an emphasis on education. Other databases, such as PsycINFO, which is oriented toward psychology, would produce results that focus on other disciplines. More specific recommendations for conducting a search using your library's on-line databases are discussed in the next section. For now, let us assume that Appendix B represents our first look at the available literature for this topic.<sup>2</sup>

<sup>1</sup> If the database you are using has a thesaurus, you can either review it on-line or you can consult a printed version in the reference section of your library.

<sup>2</sup> You should note that the records in Appendix B are reproduced here exactly as they were given by ERIC, and that this is not an acceptable format for a finished reference list or bibliography. Consult the appropriate style manual in your subject area for guidance in recasting it in an acceptable form.

✓ **Step 2: Shorten your list to a manageable size.**

Although Appendix B is comprehensive, it is too broad for use in a typical literature review. It includes articles written by developmental psychologists, theoretical linguists, second-language researchers, anthropologists, and educators, among others. It is unlikely that a single course in Child Language Acquisition will encompass all these areas. Therefore, you should *determine which of these articles pertain to your major field of study* and eliminate those that do not. If the remaining list still appears too broad, *consider reclassifying the amended list*. For example, a linguistics major will find that roughly one-third of the entries in Appendix B deal with children's acquisition of specific language features. On further examination, you can distinguish between articles that deal with grammatical categories—such as verbs, plurals, and sentences—and articles that deal with the sound system—such as vowels, consonants, and stress—either of which will reduce your list considerably. Third, if the title of an article is difficult to classify, *consider whether the journal in which it appeared is of interest to researchers in your field*. You can often determine this by simply considering the title of the journal. For example, the journal titled *Studies in Second Language Acquisition* (see reference number 74 in Appendix B) probably carries articles of interest to a different group of professionals than the journal titled *Journal of Speech and Hearing Research* (see reference number 97). Likewise, examining the titles of the articles will give you a strong indication of the fields with which the references are most closely allied.

Example 3.2.1 presents seven possible revised topics based on the sample ERIC search. In this example, the revised topics illustrate the reclassification of Appendix B according to major areas of study that can be discerned from a review of the titles of the articles. Note that these major areas correspond to some of the academic departments which may offer courses in child language acquisition—linguistics, psychology, education, child development, and language disorders. Depending on the specific nature of your course and on the academic department in which it is offered, you can now narrow your topic area by selecting one of the topics in Example 3.2.1. These classifications are given merely to illustrate the process. In fact, Appendix B can be reclassified into numerous other categories.

**Example 3.2.1**

*Possible Topic Areas, with Reference Numbers from Appendix B, Sample ERIC Search:*

Role of Parents in Child Language Acquisition

*Sample reference numbers:* 23, 30, 34, 42, 64, 69, 70, 83, 84, 88, 89, 100

Language Acquisition in Deaf Children

*Sample reference numbers:* 6, 30, 42, 46, 50, 51, 88, 106

Children's Acquisition of Grammatical Categories

*Sample reference numbers:* 6, 11, 12, 13, 14, 15, 16, 17, 19, 24, 26, 27, 28, 33, 35, 37, 38, 39, 41, 43, 44, 45, 48, 55, 56, 58, 65, 69, 72, 74, 76, 78, 81, 90, 95, 96, 98, 102, 103, 105

Children's Acquisition of the Sound System

*Sample reference numbers:* 2, 6, 10, 21, 25, 36, 46, 66, 67, 68, 73, 97

Children's Acquisition of Lexical Items (Words)

*Sample reference numbers:* 1, 3, 5, 19, 20, 31, 38, 53, 56, 62, 63, 64, 80, 82, 83, 84, 86, 94, 97, 104

Relation between Children's Cognitive and Language Development

*Sample reference numbers:* 8, 9, 32, 40, 47, 61, 77

Second Language Acquisition

*Sample reference numbers:* 13, 18, 22, 29, 49, 54, 57, 59, 60, 70, 71, 72, 74, 75, 82, 83, 94, 99

✓ **Step 3: Write the first draft of your topic statement.**

Now that you have narrowed your search results, you can reexamine the more focused list of articles you have generated and choose a more specific topic for your literature review. It is premature for you to decide on a final topic. This can come only after you have read some of the articles you have located. However, the first draft of your topic statement should attempt to name the area you will investigate. Think of this statement as a descriptive phrase rather than as a paper or chapter title. Example 3.3.1 presents two topic statements, one for a literature review in the area of linguistics, and the other in psychology. Note that these first drafts are still very general. The remaining steps in this chapter will help you narrow down your topic statement.

**Example 3.3.1**

*Linguistics:*

Children's acquisition of features of language

*Psychology:*

The development of language and thought in children

✓ **Step 4: Familiarize yourself with on-line databases.**

All university libraries now subscribe to on-line electronic databases. The manual searches of the past have given way to computerized searches. Therefore, it is essential that you familiarize yourself with your campus library's computer resources. If you are new to on-line databases, you should attend a workshop or class to learn how to use these services, and pick up and carefully read all the handouts concerning your university's database resources. As noted earlier, this

book will show you only how to approach databases in general—not the specific features of any of them.

### ✓ Step 5: Identify the relevant databases in your field of study.

Every academic field has developed its own database services that are used by its students and scholars. Early in your search, you should identify the databases specific to your field of study. In addition to the information you receive in the library, you should ask your adviser or instructor about the preferred databases in your major. You can then find out where they are available and whether they can be accessed from your home or dormitory.

Table 1 illustrates the range of database resources available through the California State University, Los Angeles (CSU, Los Angeles) library, as an example. This list is by no means exhaustive; in fact, larger research libraries will have many more research services than are listed in this table. If you are a student at a small university, it is recommended that you investigate whether your university's library maintains cooperative arrangements with larger institutions in your area.

*Table 1* Summary of Selected Library Databases

Database	Subject Areas	Database Statistics
Basic Biosis	Life Science	300,000 records from 350 journals 1994-present, updated monthly
CINAHL	Nursing, Allied Health, Biomedical and Consumer Health	352,000 records from 900 journals 1982-present, updated quarterly
Dissertation Abstracts	Complete range of academic subjects	1,566,000 records 1861-present, updated monthly
ERIC	Education and related fields	956,000 records from journals, books, theses, and unpublished reports 1966-present, updated monthly
LLBA	Linguistics and Language Behavior Abstracts	250,000 records from journals, books, dissertations, book reviews, and other media 1973-present, updated quarterly
Medline	Nursing, Public Health, Pharmacy, Sports Medicine, Psychiatry, Dentistry, and Veterinary Medicine	9,305,000 records, including articles from 3,500 journals published internationally 1985-present, updated monthly
MLA	Literature, Language, Linguistics, and Folklore	1,308,000 records from 4,000 US and international journals 1963-present, updated monthly

*Continued on next page.*

Table 1 Continued

NCJRS	Corrections, Drugs & Crime, Juvenile Justice, Law Enforcement, Statistics, and Victims	140,000 records, including journal articles, government documents, and unpublished reports 1970-present, updated periodically
PAIS International	Social Sciences, emphasis on contemporary social, economic, and political issues, and on public policy	451,000 records from journals 1972-present, updated monthly
PsycINFO	Psychology and related fields	1,249,000 records from 1,300 journals 1887-present, updated monthly
Social Sciences Abstracts	Sociology, Psychology, Anthropology, Geography, Economics, Political Science, and Law	562,000 records from 400 journals 1983-present, updated monthly
Social Work Abstracts	Social Work and related fields	30,000 records from journals 1977-present, updated quarterly
Sociological Abstracts	Sociology, Social Work, and other social sciences	519,000 records from 3,000 journals 1963-present, updated bimonthly
Sport Discus	Sports Medicine, Physical Education, Exercise, Physiology, Biomechanics, Psychology, Training, Coaching, and Nutrition	344,000 records 1970-present, updated quarterly

### ✓ Step 6: Familiarize yourself with the organization of the database.

The on-line databases described in Table 1 contain abstracts of several kinds of documents, including journal articles, books, conference presentations, project reports, and government documents. As you know from Chapter 1, this book focuses on reviewing articles in academic journals. For each of the thousands of journal articles in these databases, there is a single *record* with specific information about the article. In other words, each item on the list of titles you derive from your search of a database will be linked to an expanded description organized according to a set of categories of information. For instance, each of these records contains a number of *fields*, which include the article's title, author, source journal, publication date, abstract, and list of descriptors (terms and phrases that describe the article's contents). You can narrow the scope of a search by manipulating one or more of these fields. Publication date, source journal, and author are often used to narrow a search, but the most common method of searching a database is by specifying one or more descriptors. This method is covered next.

✓ **Step 7: Begin with a general descriptor; then limit the output.**

Unless you have had previous knowledge of a particular topic, you should begin a search with a general descriptor from the database's thesaurus. If a thesaurus is not available, use a label or phrase that describes the topic you are investigating. If this procedure results in too many references, you can then limit the search by adding additional descriptors using *and*. For example, if you search for "social" *and* "phobia," you will get only articles that mention *both* of these terms. Here is an example: Searching the major database in psychology, PsycINFO, from 1995 to present yields 770 documents (mainly journal articles) relating to "phobia." A search for "social" *and* "phobia" for the same time period yields 441 documents. Finally, a search for "children," *and* "social," *and* "phobia" yields only 40 documents.

Another effective technique for limiting the number of documents retrieved from an electronic database is to limit the search to descriptors that appear in only the title and/or abstract (summary of the article), restrictions that are permitted in PsycINFO and some other databases. Using these restrictions will help to eliminate articles in which the descriptor is mentioned only in passing in the body of the article since an article dealing primarily with phobias would almost certainly mention the term in one of these important places. (Note that in an unrestricted search, the contents of entire documents are searched.) A search of PsycINFO restricting the search for "phobia" in only the titles and abstracts from 1995 to the present yields a total of 322 documents, which is substantially less than the 770 retrieved in an unrestricted search. With the restriction that "phobia" appear in *both* the title and abstract, 294 articles were obtained.

✓ **Step 8: Use "on topic" records to refine the search.**

As pointed out, the database's thesaurus is a good source of the key subject-matter terms used in that discipline, but another good source of more specific descriptors is a record from a previous search you conducted on a topic. In other words, once you find a record that deals specifically with your area of interest, you should review that record's descriptors for clues on how to further refine your search.

✓ **Step 9: Redefine your topic more narrowly.**

Selecting a reasonably narrow topic is essential if you are to defend your selection of a topic and write an effective review on it. Topics that are too broad will stretch your limits of energy and time—especially if you are writing a review for a term project in a class that lasts only one semester. A review of a topic that is too broad very likely will lead to a review that is superficial, jumps from area to area within the topic, and fails to demonstrate to your reader that you have

thoroughly mastered the literature on the topic. Thus, at this point, you should consider redefining your topic more narrowly.

Example 3.9.1 presents a topic that is problematic for at least two reasons. First, it is much too broadly defined. Even though the writer has limited the review to English-speaking children as old as four years, it would be difficult to eliminate very many entries from Appendix B, leaving the writer with many more references than are needed. Second, this topic lacks a specific focus. Apparently, the writer has chosen to consider studies of children acquiring both the sound and the grammatical systems. If so, the finished review will either be a book-length manuscript (or two) or a superficial treatment of the literature.

**Example 3.9.1**

*A topic that is too broad for most purposes:*

This paper deals with child language acquisition. I will review the literature that deals with how children learn to speak in a naturalistic setting, starting with the earliest sounds and progressing to fully formed sentences. I will limit myself to English-speaking children, aged zero to four years.

Example 3.9.2 is an improved version of the topic. Note that this writer has narrowed the focus of the review to a specific part of language. The writer has stated clearly that the review has two main goals—to catalog the range of verbal features that have been studied and to describe what is known about the route children follow in acquiring them. Even though it is very likely that this topic will be modified several more times, based on the careful reading of the studies found, it is sufficiently focused to provide the writer with a reasonable first cut of the studies in Appendix B.

**Example 3.9.2**

*An improved topic description:*

This paper describes what is known about how children acquire the ability to describe time and to make references to time, including the use of verbs and other features contained in the verb phrase. I will attempt, first, to describe the range of verb phrase features that have been studied, and second, to describe the path children follow as they develop greater linguistic competence with reference to time.

**✓ Step 10: Start with the most current, and work backwards.**

The most effective way to begin a search in a field that is new to you is to start with the most current articles. If you judge a current article to be relevant to your topic, the article's reference list or bibliography will provide useful clues about how to pursue your review of the literature. In Appendix B, for example, a good strategy would be to review articles from the first two or three pages (all of



which are recent because the search was restricted to documents from 1995 to the present)<sup>3</sup>, photocopy the reference lists from the actual articles in the library, compare those lists against the contents of Appendix B, and make strategic decisions about rounding out your reading list. Keep in mind two important criteria for developing your reading list: (a) the reading list should represent the extent of knowledge about the topic and (b) it should provide a proper context for your own investigation.

### ✓ Step 11: Search for theoretical articles on your topic.

As you learned in Chapter 1, theoretical articles that relate directly to your topic should be included in your literature review. However, a typical search of the literature in the social and behavioral sciences will yield primarily original reports of empirical research because these types of documents dominate academic journals. If you have difficulty locating theoretical articles on your topic, include “theory” as one of your descriptors. A search of the PsycINFO database using the descriptors “social” and “phobia” and “theory” yielded 11 documents, including the one in Example 3.11.1, which would clearly be useful for someone planning to write in this area.

#### **Example 3.11.1**

*An article obtained by using the term “theory” in the search:*

Herbert, J. D. (1995). An overview of the current status of social phobia. *Applied and Preventive Psychology*, 4, 39–51. [The abstract begins: Reviews the literature on social phobia and provides a general accounting of the disorder. Social phobia is defined and *theories* (emphasis added) about its etiology are presented, including....]

Notice that this article also presents a review of literature, which relates to the next step.

It is also important to keep in mind that writers of empirical research reports will often discuss the relationship of various theories to their work and provide references to the theoretical literature. You should follow up these leads by looking up the references.

### ✓ Step 12: Look for “review” articles.

A corollary to the search technique described in the previous step is to use the descriptor “review” as a means of locating review articles. Previously published review articles are very useful in planning a new literature review

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<sup>3</sup> Note that the sample literature search in Appendix B was restricted to a three-year period primarily for space constraints. As a rule, you are advised to restrict your search to a five-year period to establish currency.

because they are helpful in identifying the breadth and scope of the literature in a field of study. They usually will include a much more comprehensive reference list than is typical in a research article.

Note that some journals only publish literature reviews, some emphasize original reports of empirical research but occasionally will publish literature review articles by leading researchers in a field who seek to describe the “state of the art” in a particular topic, and others have editorial policies against publishing reviews. If you know the names of journals in your field that publish reviews, you might specify their names in a database search.<sup>4</sup> Because this will restrict your search to just those journals, this should be a separate search from your main one.

A search of PsycINFO using “substance abuse,” and “treatment,” and “review” as descriptors identified two potentially useful review articles on the treatment of substance abusers. These are shown in Example 3.12.1.

### Example 3.12.1

*Two articles obtained by using “review” in the search:*

Crits-Christoph, P., & Siqueland, J. (1996). Psychosocial treatment for drug abuse: Selected review and recommendations for national health care. *Archives of General Psychiatry*, 53, 749–756. [The abstract begins: Reviews of selected research articles relevant to the psychosocial treatment of substance abuse (excluding alcohol abuse)....]

Weinber, N. Z. et al. (1998). Adolescent substance abuse: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37, 252–261. [The abstract begins: Reviews and synthesizes the scientific literature on adolescent substance abuse since publication of G. W. Bailey’s (1989) review on substance abuse in youth. The present review covers natural history, ...treatment, and prevention....]

Notice that the Weinber et al. (1998) review article leads to an earlier review by Bailey (1989), which would certainly be of interest.

### ✓ Step 13: Identify the landmark or classic studies.

Finally, it is important to identify the landmark studies on your topic. Unfortunately, some students believe that this is an optional nicety. However, without at least a passing knowledge of landmark studies, you will not understand the present context for your chosen topic. If you are writing a thesis or dissertation, in which fairly exhaustive reviews are expected, a failure to reference the landmark studies might be regarded as a serious, if not fatal, flaw.

<sup>4</sup> In psychology, for example, *Psychological Bulletin* is an important journal devoted to literature reviews. A premier review journal in education is *Review of Educational Research*.

It is not always easy to identify landmark studies at the very beginning of a literature search. Some review articles will note the landmark studies explicitly, and occasionally the author of an original report of empirical research will point them out as was done in Example 3.13.1.

**Example 3.13.1<sup>5</sup>**

*Excerpt from a research article that identifies a landmark study:*

For example, in a study which has now become a *classic* (emphasis added), Weitz (1972) administered a questionnaire assessing White-Black racial attitudes to a university population. For many of her subjects... (p. 2172)

While reading the articles you selected, you often will notice that certain authors' names are mentioned over and over. For example, if you read extensively on how social factors affect learning, you will probably find that Albert Bandura's social learning theory is cited by numerous authors of research articles. At this point, you would want to search the database again using Bandura's first and last name as one of the descriptors for two reasons: (1) to locate material he has written on his theory (keep in mind that you want it from the *original source* and not just someone else's paraphrase) and (2) to try to locate any early studies that he may have conducted that led him to the theory or that he originally presented to lend credence to the theory. Keep in mind that people who present theories very often conduct research and publish it in support of their theories. Their early studies that helped establish their theories are the ones that are most likely to be considered "landmark" or "classic." Note that when you conduct such a search of the database, you should *not* restrict the search to only articles published in recent years. Searching all years of the PsycINFO database restricting the search to articles with the name "Albert Bandura" as the author of the article, *and* "social" in the title of the article, and "learning" in all fields, yields relevant documents, including this early one:

**Example 3.13.2**

*An early study by a leading researcher and theoritian:*

Bandura, A. (1969). Social learning of moral judgments. *Journal of Personality and Social Psychology*, 11, 275-279.

Finally, consult the textbook for your course. Textbook authors often briefly trace the history of thought on important topics and may well mention what they believe to be the classic studies.

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<sup>5</sup> Page, S. (1997). An unobtrusive measure of racial behavior in a university cafeteria. *The Journal of Applied Social Psychology*, 27, 2172-2176.

## Activities for Chapter 3

1. First, become familiar with the electronic databases in your field (ERIC, PsycINFO, etc.). You can do so either by attending a workshop in your university library or by reading the documentation and practicing on your own. Note that many libraries now allow you to search their databases on-line from your home, but you will probably need to use a university computer account to do so. Once you are familiar with the databases, select one to complete the following steps.
2. If your instructor has assigned a term paper on a specific topic, search the database using a simple phrase that describes this topic. If you are working on your own, select an area that interests you, and search the database using a simple phrase that describes your area of interest.
  - How many sources did the search produce?
3. Retrieve two or three records from your search, and locate the lists of descriptors. Compare the three lists and note the areas of commonality as well as difference.
  - Write down the exact wording of three descriptors that relate to your intended topic. You should choose descriptors that reflect your own personal interest in the topic.
  - Compared to the simple phrase you used when you started, do you think these descriptors are more specific or more general? Why?
4. Now, use the descriptors you just located to modify the search.
  - First, modify the search to select more records.
  - Then, modify the search to select fewer records.
  - If you used the connector AND, did it result in more or fewer sources? Why do you think this happened?
  - If you used the connector OR, did it result in more or fewer sources? Why do you think this happened?
5. If necessary, narrow the search further until you have between 100-200 sources, and print out the search results.
  - Carefully scan the printed list to identify several possible subcategories.
  - Compare the new categories to your original topic.
  - Redefine your topic more narrowly, and identify the articles that pertain to your new topic. Prepare a typed list of these articles.