Master the art of APA-style writing with this newly updated and accessible resource

The newly and thoroughly revised Third Edition of *Effective Writing in Psychology: Papers, Posters, and Presentations* offers compelling and comprehensive guidance to readers who want to create powerful and persuasive prose in a rigorous, scientific, and APA-compliant framework. Distinguished academics and authors Bernard and Agatha Beins walk readers through the foundational and advanced topics they must grasp to generate convincing and credible APA-stye writing.

The book combines an accessible and approachable guide to effective writing with the most current best practices from the 7th edition of the American Psychological Association's publication manual. New writers and experienced authors alike will benefit from *Effective Writing in Psychology's* descriptions of the most frequently used and important aspects of APA-style writing.

The authors minimize their use of technical jargon and include explanations of how to create effective posters, deliver high-quality oral presentations, and publish electronically. The book also includes:

- An up-to-date presentation of ethical, inclusive writing and proper use of modern pronouns
- Step-by-step guidance on the use of APA formatting in scholarly papers
- Explanations of how to create effective posters for poster sessions
- Descriptions of how to organize convincing and credible oral presentations that leave listeners and conference attendees impressed and edified
- The basics of creating and formatting electronic documents for publication on the web

Effective Writing in Psychology: Papers, Posters, and Presentations is an invaluable resource for psychology and social, and behavioral science students at any level. It also belongs on the bookshelves of practicing psychology professionals, researchers, and academics who would like to brush up on their technical writing abilities.

Bernard C. Beins is Professor of Psychology at Ithaca College. He has received the Charles L. Brewer Distinguished Teaching Award from the American Psychological Foundation. He was President of the Society for the Teaching of Psychology, the Eastern Psychological Association, and the New England Psychological Association. He is a Fellow of the American Psychological Association, the Association for Psychological Science, the New England Psychological Association, and the Eastern Psychological Association.

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Beins & Beins

Effective Writing in Psychology

THIRD EDITION

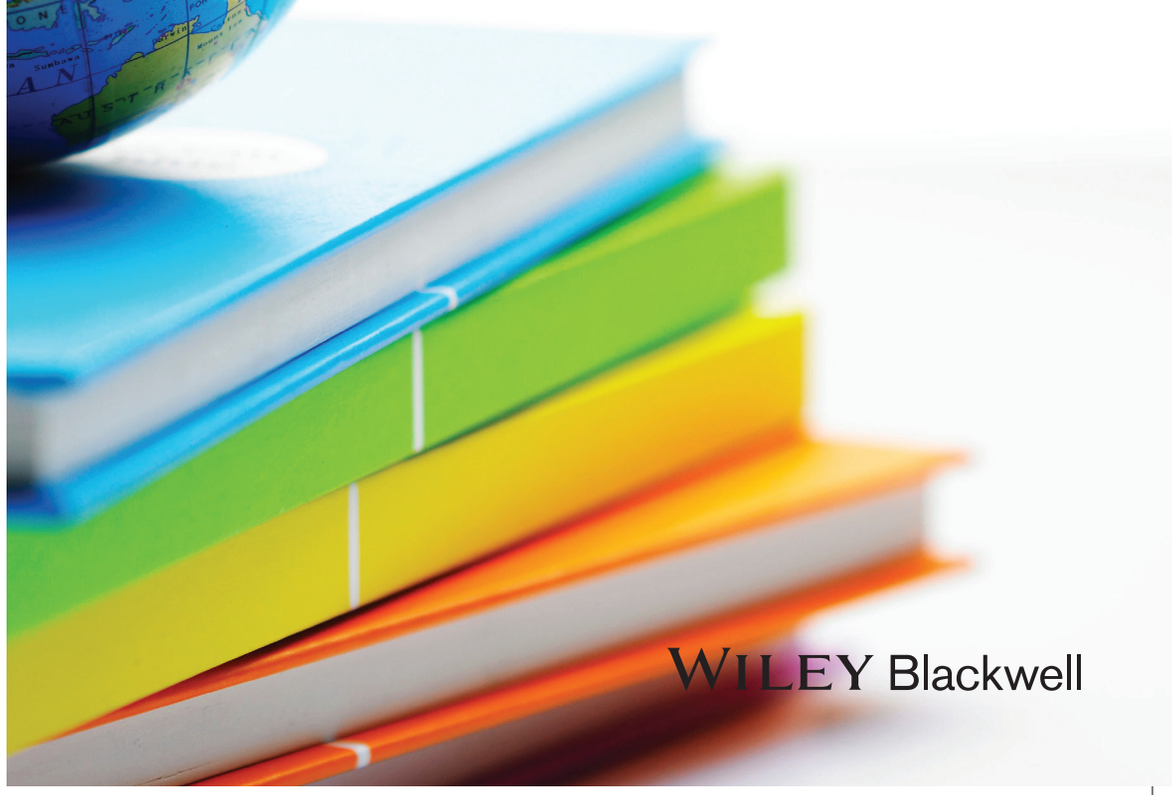
WILEY Blackwell

Effective Writing in Psychology

Papers, Posters, and Presentations

THIRD EDITION

Bernard C. Beins
and Agatha M. Beins



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Effective Writing in Psychology

Effective Writing in Psychology

Papers, Posters, and Presentations

Third Edition

Bernard C. Beins and Agatha M. Beins

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To Linda, Simon, Jenny, Evie, and Julian, our wonderful family that makes everything special

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Preface to the Third Edition

A writing project is never really complete. We just decide that we are through with it or encounter a deadline. Anybody who has embarked on writing projects knows that there is always more to say; and, in retrospect, we invariably think of how it could have been better.

This book is no different. After the first edition, we spotted places where we thought we could have been clearer, our prose could have been crisper, and we could include new information. When we finished revising the book for the second edition, we tried to remedy the flaws that we saw in the first. (It's probably the case that nobody else saw a particular need to change things, but we did.)

For this edition, we again tried to improve the book. There are some topics that we thought were clearly in need of amendment. For example, how we describe certain groups of people has changed since the second edition; and because university library websites have changed, some of the guidance about searching for resources now seem obsolete. Revisions such as these are designed to ensure that our book continues to be a useful resource for your writing.

In addition, the American Psychological Association (APA) developed the seventh edition of its publication manual, necessitating significant revisions of the chapters on APA style. Some of the guidelines from previous versions of the manual represented an era when an editor may have had stacks of paper manuscripts that could become mixed up if not properly labeled. With electronic communication, some of those guidelines became irrelevant. This edition of our writing book presents the formatting that is

most relevant to papers you are likely to write, but the full style manual contains much more information, and we encourage you to use it as a resource if you have a question or encounter a situation not covered in this book. We have tried to eliminate elements that you probably won't need to know about, which we hope should make it easy to find the information in the book that you need at any point in your writing.

We also found certain spots where, once again, we thought we could strengthen our writing and have tried to remedy those concerns. But as we noted at the beginning of this preface, the project is never really complete. We will undoubtedly spot aspects of this edition that, in retrospect, we would change. Nevertheless, we are confident that the book will provide you with the tools you need to produce high-quality writing.

In creating this work, collaborating as a father/daughter team has once again been pure delight. It is rare to be able to combine the personal and the professional so wonderfully.

Finally, as with the earlier editions, the final product would not be complete without the work of the professionals at Wiley-Blackwell, including Darren Lalonde, Monica Rogers, and Rajalakshmi Nadarajan.

Preface to the Second Edition

A writing project is never done. If you are thoughtful about your writing, you will always spot elements in your prose that you think could have been better. Thus writing a book like this one leads to a process, not a product. So, when we wrote the first edition of *Effective Writing in Psychology*, we recognized that it would be a helpful book with an interesting approach to writing. But there were also a few places where we wondered if we could have made our point more effectively or written more clearly.

So with this edition of *Effective Writing* we have had the opportunity to do it again, only better. Happily, we think that there were only a few instances in the first edition that needed clarification, expansion, or rewording. But we tried to take care of them to make the book even stronger. We hope you benefit from the changes we made.

In addition, as with any evolving domain, the technical aspects of writing in APA style have changed since the first edition of *Effective Writing* appeared. So we have adapted the sections on writing in APA style to conform to the sixth edition of the *Publication Manual of the American Psychological Association*. Many changes to the publication manual are minor, so you will be able to learn and implement them easily. It has been as delightful working on this edition as it was on the first edition of *Effective Writing*. A father-daughter collaboration is a joy. Our work together constantly reminded us of our mutual respect at the personal and professional levels.

As always, though, a project like this does not happen by accident. It requires collaborative efforts on the part of many people. We are grateful to the professionals at Wiley-Blackwell for their help, in particular Matt Bennett, Nicole Benevenia, and Julia Kirk.

Preface to the First Edition

Mark Twain recognized the importance of effective writing skills when he said, "The difference between the right word and the nearly right word is the same as that between lightning and the lightning bug." We wrote this book to help writers generate their own version of lightning when they write papers, create posters, or develop presentations in psychology.

As we have taught courses in writing and in psychology (one of us for over a third of a century), we have become very aware how important it is for students and researchers to develop solid communication skills. No matter what type of professional work you undertake, it will be critical for you to convey your ideas well.

As you write and communicate in psychology, you will face challenges that some other types of writers do not. Writing in psychology involves two separate components. One concerns the ability to create clear and crisp prose that people want to read. The second relates to the ability to convey a compelling message in technical and scientific language. All too often, scientific writers understand their concepts exceedingly well, but they fail to present a message that readers can understand, appreciate, or even want to read. Here this book enters the picture. We present suggestions and guidelines that will help you create interesting papers and cogently delivered oral presentations that will capture the attention of others.

This book will help writers at all levels of experience and skill. Some components of the book are oriented toward effective writing and give tips that are relevant for communicating with many different readerships. Other components provide direction for successful use of writing in APA style. By

using both of these aspects of the book, first-time and experienced writers can be comfortable knowing that their words will have an impact and that their work will be recognized as of professional quality.

We have worked to make this book both accessible and useful. At the same time, we have made it rigorous because writing should be as clear and precise as it is interesting.

Organization of This Book

The book begins with an overview of different kinds of writing and what makes writing for psychology different. In addition, we introduce some of the principles for developing credible arguments and effective communication, whether you are writing, speaking, or creating graphic presentations. We also introduce APA style, which is common in many of the behavioral and social sciences.

The book details guidelines on developing your own ideas and conducting Internet and library research to integrate them with issues that others have already addressed. The next focus of the book involves organizing your thoughts and beginning the process of writing and revising.

Following the chapters on effective communication strategies, we offer guidance on the technical aspects of writing a paper in APA style. In Chapters 10 through 15, you will learn how to use APA style accurately and effectively. If you have not already discovered that APA style involves detail after detail, you will learn it here. But we explain those details in ways that will permit you to follow them as you need to.

We also recognize that not all scientific communication occurs through papers. Consequently, in the last section of this book, we offer strategies for creating poster presentations, giving oral presentations, developing Internet presentations, and writing proposals for institutional review boards.

Finally, we have included a sample APA-style paper to help you write and format your own work. One of the unique features of the sample paper is that it contains annotated errors that writers frequently make. Seeing a paper that illustrates errors that you might make often helps your writing more than seeing flawless papers. If you don't know that you made a mistake, it is hard to know that you need to correct it.

Features

We provide features in this book that we hope will make the process of writing more effective and efficient. First, we tell you not only what constitutes good writing, but why. As a result, you should be able to generalize the points beyond the specific examples we use. Furthermore, the examples in the book come from published research, which gives you a good sense of how effective writers convey their ideas.

Second, we use many tables and figures that illustrate specific guidance in many areas that pose problems for writers. Rather than simply listing formatting details, we have tried to bring them to life in ways that you will be using them.

Finally, as we noted above, we include examples of the types of errors students and researchers actually make. You can learn from the mistakes of others. The sample paper in the appendix includes stylistic and formatting errors that commonly occur so that you can see what to avoid.

Acknowledgments

A book is the product of its authors, but it also takes its final shape because of the contributions of others. For this book, we have benefited from the help of Linda Beins, a librarian extraordinaire with extensive insights into finding and developing information. We were also fortunate to have the keen eyes and intellect of Stephen F. Davis, Kenneth D. Keith, and Suzanne Baker, who provided us with feedback on early versions of the chapters.

Finally, we are grateful for the consistent help of Chris Cardone, executive editor, and Sarah Coleman, development project manager, two of Wiley-Blackwell's astute staff who have made this project as seamless as it could have possibly been.

1

Writing Professionally

Write what matters. If you don't care about what you're writing, neither will your readers.

Judy Reeves

I'm not a very good writer, but I'm an excellent rewriter.

James Michener

When you write about psychology or any of the other sciences, you are telling a story about people. Scientists are people, complete with individual personalities, likes and dislikes, and ordinary human qualities. The way they are affects what they do and how they do it. As such, "science writing is not so much about science, but about people—human problems and their solutions, curiosity and discovery" (Holland, 2007). In this book, you will learn how to convey your thoughts on the important problems and solutions in psychology.

Introduction to Writing in Psychology

It would be hard to overstate how important it is to write effectively. Writing constitutes one of the "3 Rs" of a basic education: reading, writing, and 'rithmetic. In the world of business, success is dependent, in part, on effective writing. For high-level positions, "writing is a 'threshold skill' for both

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employment and promotion" (College Board, 2004, p. 3). In one survey, many companies noted that writing was important in hiring. One respondent asserted that, "in most cases, writing ability could be your ticket in … or it could be your ticket out" (College Board, 2004, p. 3). Potential employees who do not write well are unlikely to be hired and, if they are, are unlikely to be promoted.

Graduate school admission may also depend on writing effectiveness. Graduate programs routinely request essays as part of the application process. This writing is "often used to make final selections of students with similar GPAs and standardized test scores. If you are on the borderline of being accepted and the admissions committee could go either way, a sterling essay can increase your chances of success considerably" (American Psychological Association [APA], 2007).

The type of writing that you learn in psychology provides the same skills that will help advance your career. You develop clarity and logic in your ideas, along with a style that will engage the reader. If you create such prose, you will attract the attention of possible employers and graduate school admissions committees, and you will effectively present your ideas in psychology.

Most people find psychology interesting and are eager to learn more about it. But they do not want to fight through dull and meaningless writing. As writers, our biggest hurdle involves turning complex, technical concepts into prose that others can appreciate.

Writing successfully is not easy. It requires knowledge of the topic we are addressing; judicious selection of the best words, phrases, and sentences; and editing and revising what we have composed. If there were a magical formula that we could use to generate good prose, everybody would succeed in communicating even complex and hard-to-understand ideas. If you have read the work of scientists, though, you will have discovered that, much of the time, scientific writing is dense and impenetrable. Many writers hide interesting concepts inside packages of dull prose.

On the other hand, people sometimes produce lively prose that may not convey the message accurately. Engaging, but deceptive, prose is no better (and may be worse) than accurate, incomprehensible writing.

Fortunately, there is the desirable middle ground that Sigmund Freud and Williams James occupied, where prose was stimulating, not sleep inducing. Those of us who do not initially fall into this category can learn to communicate effectively. The purpose of this book is to help you find the path to better communication. If you are motivated, you can work on the skills you need to get your point across meaningfully and accurately.

How Does Professional Writing Differ From Other Kinds of Writing?

If you are trying to write like a psychologist, your style will be unlike much of the writing that you have done in the past. When psychologists write professionally, they usually attempt to convey specific information with a great deal of precision, minimizing ambiguity and the possibility of misunderstanding. The adage to say what you mean and mean what you say is highly appropriate for technical writing. You want your reader to understand the points you believe are important, and you want the reader to know exactly what you intend to say.

In other forms of writing, the emphasis may be on crafting artistic prose. The writer attempts to impress the reader with both content and style. The words that Shakespeare wrote for Macbeth illustrate the point. Macbeth lamented that life "is a tale told by an idiot, full of sound and fury, signifying nothing." These poetic words convey Macbeth's despair. However, Shakespeare's style would not be appropriate for a scientist because the style of science is to be straightforward and unambiguous so the reader does not have to puzzle through the words to find meaning in them.

Psychologists often receive training in how to write objective, scientific papers. Unfortunately, the writing style is often "bloodless" (Josselson & Lieblich, 1996, p. 651), meaning that it is not particularly engaging. Sommer (2006) has encouraged psychologists to learn to write with color and style for lay audiences without sacrificing accuracy. But he also implied that the writing style in academic journals need not be dreary.

In scientific writing, we focus on the content of the message. The point is not to impress the reader with the prose, but to render the prose invisible while making the content foremost. This type of writing can be as difficult to do well as literary writing because you need to be concise without omitting important information; you need to choose your words carefully so they engage the reader without obscuring your point; you need to say enough to let your reader understand your message without being repetitive.

Another difference among the various types of writing is that, when we write scientifically or technically, we generally rely on a vocabulary specific to the topic at hand. Professionals understand this wording, but others are not likely to be as conversant with the terminology. This is one of the reasons that scientific writing has the reputation of being incomprehensible—you need to know the jargon. (The concepts are also complex and may be hard to understand, which does not help.) Actually, technical terms are helpful

because they let us communicate complex ideas clearly in a few words, although if you do not know the meanings of the words, the prose is meaningless or, at best, difficult.

Using APA Style

A further difference between scientific or technical writing and less formal writing is that, in science, authors typically follow a specific format in preparing reports. In psychology, for instance, authors use guidelines that appear in the *Publication Manual of the American Psychological Association* (American Psychological Association [APA], 2020), commonly just called APA Style. (Some other disciplines, such as sociology, education, and nursing, also use APA style.) Research reports usually include six sections, as described in Table 1.1.

Most of the time, if a writer submits to a journal editor a manuscript that deviates from an expected style, the editor is not likely to reject the manuscript as unsuitable for publication. Instead, editors work with authors so that the final version of the manuscript is consistent with APA style (Brewer,

Table 1.1 *Typical Sections in an APA-Style Research Report*

Section of the report	*What the section contains*
Title page	The title of the paper, the names of authors, and the affiliations of the authors
Abstract	A brief overview of the entire project of about 150–250 words
Introduction	The background and logic of the study, including previous research that led to this project
Method	Minute details of how the study proceeded, including descriptions of participants, apparatus, and materials, and what researchers and participants actually did during the study
Results	A detailed statement of the statistics and other results of the study
Discussion	What the results tell us about thought and behavior
Reference	Where to find the work cited in the paper that relates to the present study

Scherzer, Van Raalte, Petitpas, & Andersen, 2001). However, editors have commented that deviations from APA style often accompany problems with the content of a manuscript. So if you create a manuscript that fails to follow appropriate style, a reader who is familiar with (and used to) APA style may assume that you paid as little attention to your ideas as you did to the way you expressed them. In the workplace, employers have expressed similar sentiments, that poor writing reflects poor thought (College Board, 2004).

According to the research of Brewer et al. (2001) on the use and the importance of APA style, writers are likely to depart from APA style in their presentation of research results and in citing references. So you should pay particular attention to these facets of your writing. If you write a paper in APA style that does not involve empirical research and data analysis, APA style can still apply. The structure of your paper is likely to have elements in common with the Introduction, Discussion, and Reference sections of a research paper, which we discuss in later chapters. Once you learn the basics of APA style, writing an effective paper might be easier than you anticipated because you will have a good sense of what belongs in a paper and where it goes.

As you write for a professional audience, keep in mind that readers are willing to be convinced with persuasive arguments, but you have to convince them. Scientific writing entails presenting a series of logical arguments that follow from one another. At the end, your good logic is going to make a believer out of your reader. If we are going to accept the process of science, it means that when a writer offers a logical argument that is supported by good data, we should be willing to accept that argument.

Making a Credible Argument

The difference between scientific writing and other writing has to do with the nature of how psychologists attempt to persuade readers. In everyday life, if you want you to change somebody's mind about something, there are several ways of doing it. One is to appeal to authority. That is, by quoting an expert (i.e., an authority), you can often convince people to believe you. After all, experts know more than others in their field of expertise. Unfortunately, experts can be wrong.

You can also appeal to what "everybody" knows is true; some things are so obvious, they must be true. Unfortunately (again), there are some things that everybody knows to be true that simply aren't true.

You can also appeal to others' emotions. Politicians and advertisers do this all the time. Unfortunately (again), conclusions based on emotional appeals can make a person feel good about a decision that, ultimately, proves to be troublesome. Furthermore, such conclusions are often not very stable (Petty & Cacioppo, 1986).

We should not simply believe the experts (even though they are probably right more than they are wrong in their areas of expertise). They should have to convince us with logical arguments. We should not simply trust our senses (even though a lot of what we feel to be true has some validity). We should not simply believe in what makes us feel good or reject what makes us feel bad; it should have logical validity.

When trying to convince your reader of your arguments, you should engage the reader in critical evaluation of your ideas. Research has revealed that persuasion based on logic and on attention to important details leads to greater and longer-term acceptance of an argument. This is the type of persuasion that you should strive for in your writing.

Different Types of Communication

If you want to communicate with your audience, you need to know what your audience expects. Depending on whether you are writing, speaking, or presenting visually, your approach will differ somewhat, even if the underlying message is the same.

Written Communication

If you are writing a formal, APA-style research report, as you would for publication in a journal, your reader will expect a structured presentation with considerable detail. The advantage of such a written presentation is that your reader can go back and review the background you cite, review your methodology to make sure it is sound, evaluate your results to judge if they are appropriate, and see if your conclusions are justified from your results and if they relate to the ideas you presented in your introduction. A written document is a permanent document that the reader can go back to at will.

Professionals (including professors) expect the writing to be free from colloquial or informal expressions and to be entirely grammatical. You should choose your words carefully because they are lasting expressions of your ideas.

Oral Communication

In contrast, if you are delivering that same research in an oral presentation, you cannot possibly pack the same level of detail and expect your audience to understand your ideas. Working memory is limited to between three and seven chunks of information. So if you are talking to people in an audience, it does not make sense to introduce as many ideas as you would in writing; your audience cannot go back to review what you have already said. They are forced to listen to your ideas in the present and can keep track of perhaps five ideas.

In an oral presentation, you should limit yourself to three or four main points you want your listeners to remember. You can introduce minor points to help reinforce the major ideas, but your audience will have a hard time keeping the details in memory. Professional speakers suggest that you tell your audience what you are going to say, then say it, and finally tell them what you just told them. There is something to this philosophy, although in a research presentation, you should not be quite so simplistic. You should establish the framework of your presentation and repeat critical points when appropriate. Still, in the short period of time allotted to oral presentations, usually 10–15 minutes, you are limited in the amount of information you can convey, just as the audience is limited in its ability to comprehend your ideas.

Poster Presentations

Yet another medium of expression is visual. Increasingly, research conferences are relying on poster presentations for reporting research findings. In this form of communication, you present all your information in a small display that might be about 4 ft × 6 ft (i.e., 1.3 m × 2 m) in size. The dimensions vary from one conference to another, but the amount of space always seems to be smaller than you would want.

One of the worst things you can do is to fill the poster with text. Nobody wants to fight through a poster with endless strings of sentences. The viewer is typically interested in your main points. The use of tables, figures, bulleted points, and other eye-catching features is a good idea in a poster. During such a presentation, the author of the poster is typically present, so if viewers want to know more details than are available on the poster, they can simply ask.

So, for a poster, you should present the main points with as little text as you can get away with. Visual elements are often a more meaningful way to make your points accessible. The result is often more information than in an oral

presentation, but less than in a complete APA-style research report. It helps that the researcher is present to clear up any misconceptions that arise because not all the information is available on the poster. Furthermore, if you are presenting a poster, you can create a handout that resembles an APA-style manuscript. In this way, interested people can get the gist of your research and can ask you any questions that come to mind right away. Then they can take your written handout and attend later to the level of detail they desire.

Internet Publishing

A relatively new option for communicating your ideas is through the internet. Web presentations combine various features of traditional manuscripts and of visual displays, but there are some additional elements that foster effective communication. A web-based presentation allows easy use of visual elements that are often too costly to include in printed manuscripts. In addition, you can use hyperlinks with your text to refer the reader to related web material or to references.

A simple web page is fairly easy to create if all you need is to present text, figures, or pictures, and hyperlinked text. It is helpful to know the code for the language of the web, HTML (HyperText Markup Language), but with the authoring software on the market, knowing HTML is not absolutely necessary. Fortunately, it is fairly easy to learn. You can even save word-processed documents in HTML format, although generating a well-formatted web page from a word processor can be tricky.

Effective Communication

A professor named Denis Dutton held a bad writing contest for a few years. The sentence that motivated him to begin the contest appears below; it was about an attempt at educational reform. The prose, which was not intended to be bad, was absolutely incomprehensible. (You should not feel bad if you don't understand it.)

> [It] would delegitimate the decisive, if spontaneous, disclosure of the complicity of liberal American institutions of higher learning with the state's brutal conduct of the war in Vietnam and the consequent call for opening the university to meet the demands by hitherto marginalized constituencies of American society for enfranchisement. (Dutton, 1999)

This book is an attempt to prevent you from writing such incomprehensible prose.

No matter what you choose as your medium of presentation, there are some characteristics of good communication to remember. First, you should establish your theme and organize your thoughts around it. Developing an outline or an idea map (as illustrated in Chapter 2) can be very helpful. To create either requires that you know what you want to say. It is tempting sometimes to start writing without a coherent idea of your message. If you operate this way, your writing may meander toward irrelevant topics.

Second, if you want to communicate effectively, you should make sure that your grammar is flawless and that your selection of words is judicious. When your writing is technically competent, your reader will not be distracted from your message by having to figure out what you mean. You also need to go back to your work to edit and revise it. It helps to re-read your work when it is not fresh in your own mind; sometimes you can spot problems that were not initially apparent. In addition, your writing may benefit if you ask somebody to read your work and explain to you what is unclear. Mark Twain recognized the importance of revising one's work: "The time to begin writing an article is when you have finished it to your satisfaction. By that time, you begin to clearly and logically perceive what it is you really want to say" (Writing, n.d.).

Finally, it is important to remember that even lengthy manuscripts begin with a single sentence. In order to maximize the effectiveness of your writing, you should set up a schedule and a process. B. F. Skinner is a good example; he was an early bird, so he arose and did his writing for a few hours in the morning, a practice that he continued right up until his death.

How to Begin

Find a place where you can concentrate free of distraction, at a time when you are clear-headed. If you are a night owl, that may be the best time for you to write; if you are an early-morning lark, that would be a good time. In either case, you should establish a routine. Writing does not happen until you do it. And when you develop your routine, remember to positively reinforce yourself. Identify a goal for your writing session and reward yourself when you reach it. So you might decide to explore and write about a given topic for 30 minutes. After 30 minutes, you should reward yourself with a break.

You may need to shape your behavior first, though, so you might need to start with a shorter work period, gradually extending it until you identify the longest period of time during which you can write effectively. Psychologists have identified a phenomenon called *post-reinforcement pause*. It refers to a period of time after a reinforcement when the animal (including the human animal) stops working toward another reinforcement (Felton & Lyon, 1966). You should make sure that your post-reinforcement pauses are not too lengthy.

By developing good writing habits, you will have taken the first step toward successful communicating. The task is often not easy, but the results are eminently satisfying.

In the next chapters, we will explore how you can develop your ideas, connect them to what others have already written, and express them in a style that reflects a sophisticated knowledge of psychology. In the end, you will have an impact on your audience when you write and when you speak about psychology.

Part I

Organizing and Developing Your Ideas and Writing

2

Formulating Your Ideas

It is not the answer that enlightens, but the question.

Eugene Ionesco

Somewhere, something incredible is waiting to be known.

Carl Sagan

Identifying Your Focal Question

You have a paper due in two weeks but have not started doing research. Perhaps you have not yet decided what to write about. Where do you begin? How do you move from assignment instructions to article databases and to your argument? The purpose of this chapter is to offer guidance and guidelines for developing a research paper topic and thesis. We offer suggestions to help you identify a topic, use sources to narrow the topic, and develop your thesis in a way that reflects academic standards.

When you start a psychology writing assignment, you might already have a specific question you want to answer or a specific set of studies to evaluate. However, if you need to generate your own idea, how do you choose an appropriate topic with an appropriate focus? First, examine the writing project parameters closely. What is the purpose of the project? What objectives do you need to achieve? Who is your audience? After reflecting on these questions, you can go about narrowing your scope and

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developing a question through *pre-research* and *preliminary research* before turning to *focused research*.

Pre-research refers to research you do before you have a focal question or even a general topic for your writing project. Preliminary research comprises activities that help you narrow your focus once you have a general idea and give you background information on your topic. *Journal of Comparative Psychology*, Wikipedia, https://www.childstats.gov, and *The New York Times* can all be useful sources for preliminary research. Perhaps you will be watching the evening news on TV, sitting in class, reading a billboard sign, or overhearing a conversation when an interesting question strikes you. Because an idea that initially does not seem feasible might end up being the subject of an innovative thesis statement, we suggest that you initially cast as broad a net as possible and that you do some preliminary research before you commit to or discard a topic. Once you identify a viable focus for your writing project through pre-research and preliminary research, the next step is focused research, or the work involved in reading and evaluating sources that you plan to incorporate into your paper.

Although these three types of research seem distinct, the differences between them blur during the research and writing process. You will probably move back and forth between pre-research and preliminary research as you identify and narrow your focus. Furthermore, you may not use all the sources you find through focused research in developing and supporting your argument and may have to return to the library or article databases to find additional sources. Table 2.1 outlines distinctions between these three kinds of research to give you a better sense of their purpose.

In the preliminary research stage, you start establishing your *focus* and considering the *academic value* of your research questions and claims. The focus is the scope of your paper and is shaped by the assignment guidelines, how broadly can you explore the topic, and your intended audience. Each of these aspects will affect how you approach your writing. For example, the focus of a paper about communication between identical twins will be different for a 10-page and a 20-page paper; if you are writing about the topic for an encyclopedia, a class project, or *The American Journal of Psychology*; or if you are reporting your own original research or analyzing others' research.

Furthermore, you want to pick research questions that are not so broad that you end up with too much information to sort through, and you do not want your topic to be so narrow that you cannot find enough information. Think about the difference between the following two focal questions: (a) What is the best strategy for students who are trying to learn material for a test? and (b) Do students learn more by studying in a single, long session or

Table 2.1 *Different Kinds of Research*

Kind of research	*Purpose*	*Activities*
Pre-research	• To help choose a paper topic	• Brainstorming lists of possible topics
	• To give you general information about potential topics	• Skimming through popular and scholarly sources to determine if there has been enough research related to a potential research topic
		• Slowly narrowing your focus to one or a few research questions about one topic
Preliminary research	• To gather a broad range of information about a particular topic	• Choosing the questions that seem the most viable as research topics
	• To determine what research questions have and have not been asked	• Reading through scholarly sources to familiarize yourself with other research related to these topics
	• To narrow your focus and start formulating a thesis	• A combination of skimming sources and reading them more closely
		• Taking notes as you read sources
Focused research	• To give you in-depth knowledge about a particular research topic	• Reading scholarly sources that you plan on using in your paper and evaluating the sources' strengths and limitations
	• To help you develop and support your thesis statement	• Reading sources closely and taking notes on the ideas in that source
	• To find sources that offer a variety of perspectives on your topic	• Keeping track of citation information for each source

in a series of shorter sessions? The first question might be useful when you are starting your pre-research because it is broad; however, because it is so broad it will be very difficult for you to answer thoroughly and meaningfully, even in an article-length paper. Instead, you could use question (a) to guide your pre-research to form a question more similar to question (b).

In order to assess the academic value of a research topic, consider your audience and why they would or should be interested in your topic. When you write an academic paper, you are taking part in an ongoing conversation among psychologists, and part of your job as a writer is to convince these psychologists that your contribution to the discussion is meaningful and important. Therefore, whether you are writing about your own original research or building on others' research, if you approach your topic in a new way or offer a thoughtful critique of existing scholarship, you can strengthen the academic value of your writing.

Locating Relevant Sources

During your pre-research phase, two sources that may be useful are the texts you have read in a class and the instructor teaching the class. Look through the syllabus for a topic that interests you. Unless the instructor has specifically identified a source as unreliable or a topic as off-limits, these articles and textbooks could offer a number of possible paper topics. Additionally, your instructor is presumably knowledgeable about the topics covered in the class, so she or he can help you brainstorm research topics or questions. Although you probably will not cite these sources in your paper, both can be useful in the pre-research stage, when you are still deciding which topic to explore.

During the process of choosing a topic, you might also rely on both scholarly and popular sources. Popular sources, such as newspapers, magazines, and many websites, provide brief overviews of scientific research. Journalists write for a lay audience, so they present information in a way that is easy to understand, and you can probably identify the article's main points without trouble. These sources often have sections on science and health, so you can skim through several different issues to find out what research is newsworthy. You can also find nonacademic resources specifically related to psychology, such as those listed in Table 2.2.

Professional organizations such as the American Psychological Association, the Association for Psychological Science, and Society for Community Research and Action often have "Resource" pages within their websites, making them another useful place for pre-research and preliminary research.

If a publication is not open access, you might find it through public and university libraries, either in hard copy or through internet databases such as LexisNexis. EBSCO, and Academic Search Premier. Through databases

Table 2.2 *Nonacademic Sources of Information Related to Psychology*

Source	*URL*	*Publisher*
Monitor on Psychology	https://www.apa.org/monitor	American Psychological Association
APS Observer	https://www.psychologicalscience.org/observer	Association for Psychological Science
The Psychologist	https://thepsychologist.bps.org.uk	British Psychological Society
Scientific American Mind	https://www.scientificamerican.com/mind	Springer Nature

you can plug in keywords (such as "abnormal psychology" or "subliminal advertising") or names of researchers and then skim through the results to see if any articles interest you.

Remember, though, that popular sources that are not directly associated with professional organizations tend to focus on controversy and may ignore important information if it is not sensational, so you need to verify through scholarly sources any ideas you find in popular sources. This verification will also help you weed out studies that are pseudoscience or that fail to meet the standards of academic scholarship. (See Chapter 3 for more information about finding and evaluating sources.)

Furthermore, be aware that popular sources frequently relay very current information, and journalists and websites may report on scientific work before the researchers have published an article in an academic journal. You might not be able to find an academic study referred to in an article or online, but one characteristic of academic scholarship is that it builds on previous research and writing. Consequently, if you come across an interesting study a popular source, you will most likely be able to find other research on this topic in academic journals.

Even with the range of sources you consult for pre-research, you might continue to have trouble thinking of topics or finding resources on a specific topic. Libraries can offer additional assistance in two ways. First, most libraries have one or more reference librarians, and some libraries make it possible for you to call or email questions to their librarians. Librarians are there to assist patrons, so don't hesitate to contact one for help with your research.

Additionally, university libraries generally have links to internet resources by topic or subject. If you do a Google search for "libguide" (standing for "library guide"), you will see such resources from different institutions. For example, within the Rutgers University Library website, there is a subject research guide at the following URL: http://libguides.rutgers.edu/index.php. If you click on the topic "Psychology/Behavioral Sciences," you will be led to a series of tabs for items such as citation indexes, electronic journals, psychology organizations, and career and professional resources. For some of the links, only Rutgers students have access; however, other links are open to the general public, and if you are affiliated with a university, that university's library resources should be available to you. Other publicly available links, like the Open Directory Project (http://odp.org), lead you to an array of resources on a variety of topics, including psychology (listed under the "Science" heading).

Preliminary research can lead you to popular sources, but it is also ideal for identifying a number of potentially relevant scholarly texts. Scholarly texts are those written by academics for other academics in that field. Thus, an encyclopedia entry on schizophrenia, because it is written for a general audience, is not a scholarly source, even though it may contain accurate information. The scholarly sources you want to find are those that either report the results of original research or that develop an argument based on others' academic research. Generally, you will find these sources in academic, or peer-reviewed, journals.

We recommend using your university library website when you start searching for scholarly sources. For many libraries, the default search bar—often found on the home page—covers everything you might be able to access: books, articles, DVDs, theses and dissertations, and perhaps archival collections. Limiting your search to the library catalog and article databases such as PsycINFO and Academic Search Complete/EBSCOhost are most likely to direct you to scholarly sources. The library catalog will offer results in print form: books located in the stacks, reference books, and occasionally government publications.

There are too many journals being published for convenient listing in the library catalog. You can find titles and descriptions of specific journal articles through databases that libraries subscribe to. You can search through a database based on a variety of parameters: keywords, subject headings or descriptors, author's name, article title, and journal title. (See Chapter 4 for more information about research techniques.)

Through this pre-research, you can develop a list of sources that might become part of your own paper. As you transition from preliminary research (the research to help you develop a research question or hypothesis once

you've chosen a topic) to focused research (research for sources you will likely use as support), you will add to and revise this list. In the next two chapters we offer more detailed information about library and internet research, so please consult those chapters as you look for credible sources.

Recognizing Multiple Viewpoints

A writing project requires that you divide your time between doing research, pre-writing, writing, adjusting your focus, and developing a thesis statement. Each part is important and is integrated with the other parts. That is, your thesis statement will reflect your focus; your thesis statement and focus should be informed by the work other psychologists have conducted, which you find through research; and, of course, your research, focus, and thesis end up shaping what you write. Furthermore, as we have been emphasizing, this process is not linear. Because of the complexity of academic research topics, rarely will scholars move from research to writing and then not conduct any more research, and rarely will the first version of a thesis statement be identical to the thesis statement in a final draft.

Academic research topics are complex on several levels, and this complexity will shape how you write your paper as well as how you evaluate your sources. Because almost any focal question you pose will have more than one answer, you need to identify different responses and evaluate their strengths and limitations. This evaluation involves analyzing the author's hypothesis, data, conclusions, and discussion sections because, for example, differences in the interpretation of results and the development of experiments can produce multiple perspectives about the same focal question. Although statistics might appear to represent research results in a straightforward manner, numbers can be manipulated or incorrectly interpreted, as Chapter 8 shows. Furthermore, two scholars might interpret the same statistics in different ways, both of which could be logically sound. As writers have noted (e.g., Best, 2001, 2004), statistics are not simply objective facts; they are the results of decisions authors have made during the research process.

Rather than interpreting results differently, some psychologists might start their research with fundamentally different assumptions about an issue. For example, clinical psychologists may have a general consensus that a combination of pharmaceuticals and therapy is most effective for treating attention deficit hyperactivity disorder (ADHD), but there are different kinds of pharmaceuticals and different kinds of therapy, as well as different combinations of the two. The assumptions that inform an experiment about

treating ADHD will affect the results. Thus, as you read sources, pay attention to the way the authors set up their research and test their hypotheses as well as to how they interpret their results.

Despite the professional disagreements that psychologists (and scholars in all disciplines) might have, most researchers realize that a variety of perspectives is what allows scholarship to thrive. This dialogue is one that scholars engage each time they present a paper or poster at a conference, publish an article or book, or write a paper. They are taking part in a larger conversation about an issue, using disciplinary conventions to produce a credible argument that might enlighten others.

Another factor to consider in research relates to psychology as a discipline. Animals—including humans—are complicated. Thus, psychologists who try to explain nonhuman animal behavior rarely find that there is one simple cause or that every instance of that behavior has the same cause. Behaviors have multiple causes, and what causes a behavior in one circumstance might not have that same effect in another.

To prevent oversimplifying both human and nonhuman behavior, psychologists place quite narrow parameters around their conclusions, emphasizing that the results apply only to a specific population or that the results are valid only under certain conditions. Through these qualifications, psychologists are recognizing the difficulties of developing and supporting an argument. Consequently, when you read sources, pay attention to the boundaries of the research (its focus, or what it includes and excludes) and the researcher's conclusions. Even slight variations in the constraints of different experiments can produce different results and conclusions.

Ethical Writing

Academic integrity is a concept that guides ethical writing and more broadly addresses cheating, plagiarism, and even denying others access to scholarly resources. In this section we offer examples and tips to help you avoid plagiarism but suggest you read your university's policy on academic integrity because, whether intentional or unintentional, plagiarism is a very serious infraction. By plagiarism, we mean the use or representation of someone else's idea or language as your own, which can include:

- summarizing someone else's idea without giving that person credit;
- using someone else's language without giving that person credit;

- using someone else's language without quotation marks, even if you give that person credit for the idea;
- taking work that someone else wrote (whether published or not) and presenting it as your own.

Scholars do not consider it plagiarism if you present information that is common knowledge without a citation. That is, if you offer information that you expect an average person would know, such as the temperature at which water freezes or who the fifth United States president is, then you can include that information without needing to cite any sources. However, the margins of common knowledge are not always clear. For example, if your audience is other psychologists, what is considered common knowledge might be different than if your audience is a group of sociologists. Whereas psychologists tend to know that John Watson was central in explaining human behavior through conditioning, sociologists might be less familiar with that knowledge, so it would make sense to include a specific reference to Watson's work if your readers are not psychologists.

Here we hope to offer resources and practices to eliminate the chance that you might unintentionally plagiarize, and we hope this book provides you with resources and tools so that you do not even consider plagiarizing intentionally. You might forget to cite a source when you are writing your paper, or you might have taken notes but forgotten to write down which source those notes are from. Regardless of your intentions, the first example is plagiarism and the second could become plagiarism. Consequently, academic integrity starts when you are in the preliminary research phase and continues through the research and writing process.

To clarify what is considered plagiarism, we offer an excerpt from a scholarly source and a paragraph that attempts to paraphrase the scholarly source (this example is inspired by a University of Kent's psychology department web page at www.kent.ac.uk/ai/students/whatisplagiarism.html). In Figure 2.1 we outline the mistakes in the paraphrased version and then offer a way to rewrite it, which is described in Figure 2.2.

Scholarly Excerpt

According to self-determination theory (Deci & Ryan, 1985, 1991), individuals who perform an activity out of choice and pleasure regulate their behavior in a self-determined manner. In contrast, individuals who participate in different activities out of internal and/or external pressures regulate

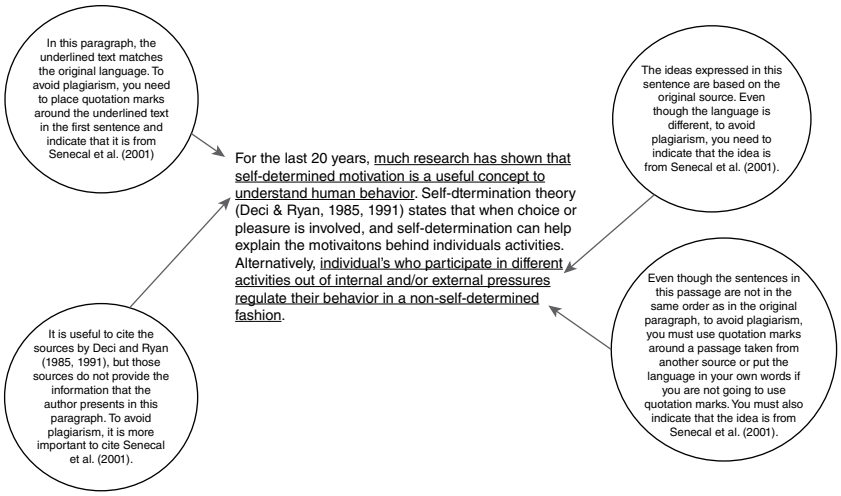

Figure 2.1 Examples of plagiarism.

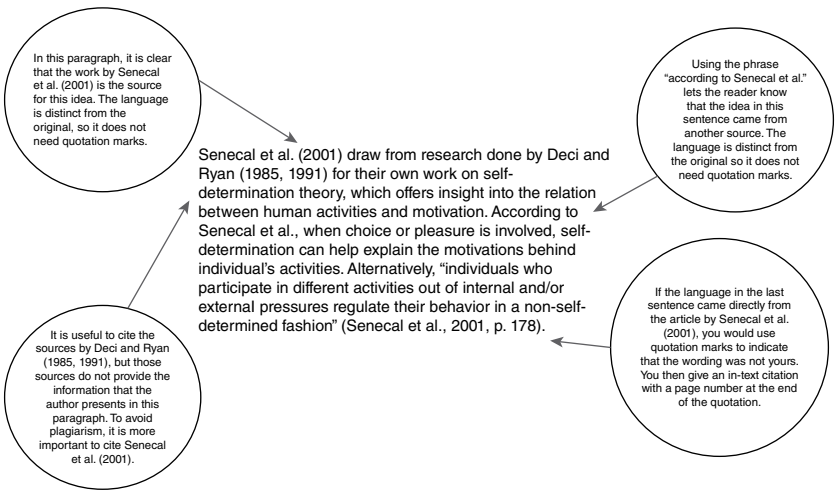

Figure 2.2 Revision that avoids plagiarism.

their behavior in a non-self-determined fashion. Throughout the past two decades, much research has shown that self-determined motivation is a useful concept to understand human behavior (Senécal, Vallerand, & Guay, 2001, p. 177).

Attempted Paraphrase

For the last 30 years, much research has shown that self-determined motivation is a useful concept to understand human behavior. Self-determination theory (Deci & Ryan, 1985, 1991) states that, when choice or pleasure is involved, self-determination can help explain the motivations behind individuals' activities. Alternatively, some individuals participate in different activities because of internal and/or external pressures, so they regulate their behavior in a non-self-determined fashion.

Paraphrase Rewrite

Senécal et al. (2001) draw from research done by Deci and Ryan (1985, 1991) for their own work on self-determination theory, which offers insight into the relationship between human activities and motivation. According to Senecal et al., when choice or pleasure is involved, self-determination can help explain the motivations behind individuals' activities. Alternatively, "individuals who participate in different activities out of internal and/or external pressures regulate their behavior in a non-self-determined fashion" (Senécal et al., 2001, p. 178).

This example is relatively straightforward and addresses situations commonly encountered in academic research and writing, and in many cases, it is clear how to avoid plagiarism. Nevertheless, there will probably be moments when you are unsure whether you need to cite something or how to cite it. For example, you might not know if your audience considers something to be common knowledge, or you might wonder if your paraphrase is different enough from the original text. When this happens, just ask someone. Your instructor and university librarians will be familiar with the practices that ensure academic integrity in research and writing, so use them as resources.

We encourage you to become familiar with what is and isn't plagiarism not only because it is a form of dishonesty but also because including citations and references can strengthen your work. For example, if you are proposing that people who were spanked as children are more likely to spank their own children, drawing from other psychologists' credible, scholarly research that points to the same conclusion will increase the validity of your stance.

Referencing perspectives that contradict your stance can benefit your work, too. Showing your audience that you are aware of and have evaluated research that presents arguments or conclusions that differ from yours indicates that you have explored multiple perspectives and still consider yours to

be the strongest. So, revisiting the spanking example from the previous paragraph, if you were to make an argument about spanking, you could cite studies that do not find a connection between being spanked as a child and then spanking one's own children. Addressing counterarguments may persuade someone who previously disagreed with your stance to reconsider, so through this strategy you might convince more readers of the credibility of your argument. (See Chapter 9 for more information about counterarguments.)

Regardless of the research stage, each time you take notes, you want to be able to connect those notes to a specific source. There are different systems you can use to do this, so find the one that works best for you. For some people, recording a source's complete citation information and then writing notes keeps everything in one place and makes it less likely that either the citation or the notes will be lost or separated. Almost all library catalogs and search engines allow you to email or print citations, and through some article databases you can email or print out entire articles. However, should you email or print citations, you then need to figure out how to connect the citations with your notes about that source. If you will be using a number of sources, programs such as EndNote, Zotero, and RefWorks (which are all reference management software) can help you record your sources and connect them to your notes.

What we want to emphasize, though, is the importance of keeping track of your sources at the initial research phases and throughout your writing project. There are few things as frustrating as knowing you've summarized, paraphrased, or quoted a source but not knowing which source it is, which causes you to spend time reading through articles or even revisiting the library to get a source you had already returned. Therefore, practices that support academic integrity not only may prevent plagiarism—intentional or unintentional—they may also be more efficient in the long run.

3

Assessing Your Sources

In all affairs it's a healthy thing now and then to hang a question mark on the things you have long taken for granted.

Bertrand Arthur William Russell

The most erroneous stories are those we think we know best—and therefore never scrutinize or question.

Stephen Jay Gould

Imagine that you have been diagnosed with an illness and need treatment. How do you find out what treatment is the best for your condition? Would you be more likely to trust a doctor or medical student? How would you assess advice from someone who was diagnosed with and recovered from the same illness? Would you choose a drug regimen based on a television advertisement or an internet pop-up ad?

Although writing a paper generally is not a matter of health or sickness, there may be some parallels between your decision about treating an illness and using a source in your paper. Consider the following questions: Where does the information come from? Who is telling you the information, and what kind of credibility does the source have? Where would you look to find out more? The purpose of this chapter is to give you some tools for addressing these questions by evaluating the sources you encounter. This process involves determining not only the credibility of the source but also what biases or assumptions shape the information in a credible source. Credibility,

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therefore, is the central concept of this chapter because it can be a useful yardstick for evaluating sources, for the greater your sources' credibility, the more confident you can be in the information they contain. In an academic paper, credible sources also strengthen your own credibility as a writer.

The Difference Between Primary, Secondary, and Tertiary Literature

Before going into the specificities of popular and scholarly sources, we first distinguish between primary, secondary, and tertiary literature. Each category has distinguishing characteristics that you can use to determine the type of source you've found, but some sources may appear to fit within different categories. Therefore, it is best to conduct a holistic assessment of a book or article. For example, rather than looking only at the author of an article, the journal in which it appears, or the date of publication, consider the range of different criteria we outline in this chapter.

That is, when a researcher works with human participants through experiments or interviews, when they study nonhuman animals, or when they use archival material (e.g., letters, films, literature, popular cultural artifacts), the publication will constitute primary literature. These kinds of publications will introduce the research, describe the methodologies used, present the research results, analyze and interpret the results, and include references to the sources that shaped the research.

Secondary sources are those that are based on primary literature. Scholars often write articles that analyze experiments and research that they themselves have not conducted; such publications are often described as review articles. Although it is a secondary publication, these authors still may be making original contributions to their field. By putting a set of sources or studies in conversation with each other or by examining data through a different theoretical framework, they are offering an analysis of other authors' analyses, which can help readers understand primary literature in a new way.

Tertiary literature will most often not be scholarly, although it may be credible and written by a researcher. These types of sources consist of summaries of primary and secondary literature, so their purpose is to describe information and ideas written by others and not to present a thesis that an author develops and supports with their own research. Encyclopedias, Wikipedia, dictionaries, and textbooks are all examples of tertiary publications.

The Difference Between Popular and Scholarly Sources

When writing academic papers, regardless of your topic, you must use scholarly sources to support your argument. Popular sources address a general audience, so they present fewer details and less technical material about the research. Because they provide a less thorough picture of the research than a scholarly article does, for professionals, popular articles are less credible than scholarly ones. It is important that you draw on credible and rigorous—and thus scholarly—sources in academic writing, so we offer the following criteria to distinguish between popular and scholarly sources. Each subsection starts with questions that you can ask when evaluating a source.

Who Is the Author? Is the Author an Academic or Professional Who Is Writing about Research That She or He Conducted? How Many Authors Are Listed?

Academic researchers are most often the authors of scholarly sources, and their intention is to convey the results of their research. If the text is primary literature, the authors are reporting the results of their original experiments. In scientific disciplines, because several researchers may work on an experiment, scholarly articles often have more than one author. Popular sources more commonly have one author, and for some articles no author is listed, so the absence of an author's name is a good sign that you have a popular source. When a popular source does list an author, the author's academic and professional background is frequently in journalism, so the person who writes an article in *Newsweek* about sibling rivalry will most likely be a journalist, not a psychologist who does behavioral research. However, the authors of an article about sibling rivalry in *The British Journal of Developmental Psychology* will be the people who actually conducted the research. It is important to keep in mind that academic researchers may also write popular articles, so you need to consider more than just an author's credentials when assessing your sources.

Who Is the Audience? Does the Reader Require Technical Knowledge to Understand the Information in the Source?

The authors and readers of scholarly sources tend to be academics and expect that their peers will read them, so someone who has not studied the field being written about would probably not understand much of the content of these sources. An article about the same topic that appears in a popular source

will be written differently because it is aiming at a lay audience. For this reason, authors of popular sources use language that is accessible to those who are not experts in the field. Of course, people who are academics or professionals might read popular sources, but the reverse is improbable: those untrained in a specific field are unlikely to read that field's scholarly sources.

In What Kind of Journal Did Your Source Appear? What Kind of Editorial Process Did the Source Go Through Before Being Published?

In general, scholarly publications have been peer reviewed and are published in an academic journal (if an article) or by an academic press (if a book). In this system, editors rely on reviewers who are knowledgeable in the author's academic area to assess the merit of manuscripts that are submitted for publication. Peer reviewers read the submissions at various stages in the publication process, often offering comments, asking questions, and making suggestions to ensure that the final publication contains sound and accurate research results. Reviewers may even recommend that the investigators conduct more research to strengthen their conclusions. To increase the chance that your research will lead you to scholarly sources, you can use databases like PsycINFO and Academic Search Premier (EBSCOhost), which catalog and allow you to limit your search results to peer-reviewed publications.

In contrast, editors of popular publications want a general audience to be able to understand what they publish, so they will make sure that jargon is omitted or carefully explained. Although they also go through fact-checking procedures, they will most likely not be able to evaluate the researchers' accuracy or credibility because they are not familiar with the subject written about or the conventions of the field. Therefore, using popular sources to support your thesis may actually weaken the credibility of your paper, rather than strengthen it.

What Additional Features Does the Source Have?

Scholarly publications may also include an abstract, tables and/or charts that display research results, sections dividing the article (such as "Method" and "Results"), and a listing of works cited. Scholarly articles are also likely to be longer than popular articles and to appear in journals that are published less frequently than popular ones, although though this is not always the case. Some scholarly articles and books follow other academic styles (e.g., MLA or Chicago style) that may use footnotes or endnotes for the citations, so the lack of a "Works Cited" section does not necessarily indicate that something is not scholarly.

Some scholars in the humanities rely heavily on popular sources for their scholarly work, such as the article "Girl Power's Last Chance? Tavi Gevinson, Feminism, and Popular Media Culture" (Keller, 2015). It focuses on a magazine created by an online fashion blogger, so it draws heavily on nonscholarly sources, but the author uses these sources as texts to be analyzed critically rather than as authoritative voices that lend credibility to the argument.

Evaluating Sources

Whether a source is popular, scholarly, primary, secondary, tertiary, or in the gray area between categories, it is vital that you consider the credibility of the information presented, specifically in relation to your research project. Many popular sources report scientific studies, and their reporting might be factually accurate but incomplete. Additionally, scientific studies, while likely to be credible, will be shaped by the authors' biases and assumptions. Thus, we encourage you to read all sources critically, even those that appear in academic journals and books. In the following sections, we outline some guidelines for evaluating sources you might encounter.

Much of the popular press is a for-profit industry. Magazines and newspapers exist to make money. To a great extent, this objective shapes editors' decisions about what to include, what to exclude, and how to present what they publish. For this reason, there are popular print publications that focus on specific issues (such as *Sports Illustrated* and *Rolling Stone*) to increase sales. Additionally, publications target specific audiences. So, although the *National Review* and *Mother Jones* cover similar issues, the former generally targets a more conservative audience and the latter a more liberal one. Because of differing audiences, then, articles about the same topic might offer slightly different information or reveal different biases.

A for-profit status also affects the way authors present information in an article. Editors want to catch the attention of readers, so they will place the most sensational or provocative information in the headline or first paragraph. This structure is called pyramid writing, and journalists use it because they know that most people won't read to the end of the article. If 100% of readers read the headline, about 70% will read the introductory paragraph, and only 50% will read through to the fourth paragraph (O'Connor, 2002, p. 117). Therefore, qualifications that some results do not reinforce a certain conclusion, or that more research is needed to confirm a hypothesis, may receive only brief mention and appear at the end of the article.

Because of the desire to provoke readers and sell more issues, popular sources can sometimes publish pseudoscience. What is *pseudoscience*? Etymologically, the word means "fake science"; however, it is not subject to a simple or easy definition. For example, you cannot merely state that real science is neutral and objective whereas pseudoscience is biased and subjective. Nor can you argue that real science always follows the scientific method, but that pseudoscience is sloppy. And you also cannot argue that pseudoscience results from a specific political agenda, and real science is separate from politics. So, what makes some studies "fake" and others "real"?

There are some guidelines you can use to determine whether a study is pseudoscience. In pseudoscience, as with science, you want to evaluate the content of a study and the publication in which the study appears. If you can determine that the study is published in a scholarly source, it is less likely to be pseudoscience.

A working knowledge of logical fallacies can also be useful for separating science from pseudoscience. The phrase *logical fallacy* describes a position that is logically untenable. If a writer uses unsound thinking to support a hypothesis, it can lead to an invalid conclusion. There are a number of different logical fallacies, but in Table 3.1 we describe only those more relevant to identifying pseudoscience. You can find a more detailed exploration of logical fallacies at: http://www.fallacyfiles.org.

The presence of a logical fallacy does not necessarily invalidate all the work done in a study; however, fallacies are warning signs that there might be other weaknesses in the research. Additional items to look for when evaluating a source's credibility are unexplained or unacknowledged contradictions, persuasion with creative or strong language rather than valid evidence, the presence of jargon that other scientists do not use, and the lack of reliable sources that support the hypothesis and conclusion.

For scholarly examinations of pseudoscience, see Pigliucci (2010), Leahy (1983), Lilenfeld, Lohr, and Morier (2001), Still and Dryden (2004), Olatunji, Parker, and Lohr (2005/2006). There are also websites that explore various kinds of pseudoscience. Some examples are:

- https://surface.syr.edu/suscholar/vol4/iss1/2
- http://www.quackwatch.org/01QuackeryRelatedTopics/pseudo.html
- http://www.softpanorama.org/Skeptics/index.shtml
- https://www.scientificamerican.com/article/what-is-pseudoscience
- https://www.thegreatcoursesdaily.com/what-is-pseudoscience-learning-to-objectively-evaluate-science

Table 3.1 *Logical Fallacies*

Fallacy	*How It works*	*Example*
Emotionally loaded terms	Appeals to a reader's emotions without using logic or other support to back up the argument	If you really cared about children, you would vote for the pro-life candidate.
Bandwagon fallacy	Argues that, because everyone else thinks or acts a certain way, the reader should as well	The candidate won with a huge majority of votes, so she must be very qualified.
Faulty cause and effect	Sets up a cause–effect relation without evidence that the two events are causally related	As more homes have televisions, literacy rates have decreased; therefore, an increase in televisions causes a decrease in literacy rates.
Either/or reasoning (also a black and white fallacy or false dichotomy)	Presents a situation as having only two alternatives	Either aggression levels are biologically determined or they are caused by environmental factors.
Hasty generalization	Develops a conclusion or rule based on only an individual case or a few cases	This study shows that college students scored well on the test; therefore all 18- to 21-year-olds would score well.

Evaluating Internet Sources

For a paper about serial killers, the following four sources are relevant:

1. Wikipedia has an entry on serial killing at http://en.wikipedia.org/wiki/Serial_killer.
2. Through Google Scholar you can find an article titled "Predicting serial killers' home base using a decision support system" by David Canter, Toby Coffey, Malcolm Huntley and Christopher Missen in *Journal of Quantitative Criminology*.
3. Through PsycINFO you can find "Critical characteristics of male serial murderers" by William B. Arndt, Tammy Hietpas, and Juhu Kim in *American Journal of Criminal Justice*.

4. A Yahoo search with the key words "serial killer psychology" connected you to a page on the Crime Museum's website: https://www.crimemuseum.org/crime-library/serial-killers.

Which source(s) will be useful and credible for an academic paper on serial killers? Which source(s) would increase your reader's confidence in your ideas? Use the following points to assess the sources.

- Using sources written by psychologists for psychologists may strengthen the credibility of your paper.
- Using sources that appear in an academic publication may strengthen the credibility of your paper.
- Using sources that are NOT written by psychologists for psychologists may indicate to your reader that you were too lazy to look for scholarly sources.
- Even if it contains accurate information, using a source that is not peer reviewed and does not have references does not meet standards of academic writing and may weaken the credibility of your paper.

Anyone with access to a computer, time, and the ability to make a web page can place information on a personal website, so you want to be particularly alert when you encounter online content that is not part of an already established academic journal. However, do keep in mind that many academic journals are open access and make their content available as freely as that on a personal web site (see https://doaj.org for a list of peer-reviewed open-access journals), and you can often find citation information and abstracts for scholarly sources online.

In general, the five areas you want to consider when getting information from websites are accuracy, authority, objectivity/advocacy, currency, and coverage. We briefly explain these categories in Table 3.2 and illustrate how they can be used to determine the validity of online information.

For some websites, an organization or sponsor claims authorship, rather than a single author. In this case, you want to ask the same questions you would of a single author. If it is not possible to determine who sponsors the site, you can try truncating the URL (the web address) by deleting the part of the address to the right of the leftmost single backslash and then hit "enter." For example, http://www.pharmtech.com/virus-spread-threatens-pharmaceutical-supplies-and-clinical-research takes you to an article about the impact of the coronavirus (COVID-19) on access to pharmaceutical

Table 3.2 *Evaluating Internet Sources*

Evaluation category	*Questions to ask*
Accuracy	Can you verify any of the information from your own experience, and does the information seem consistent with other sources you have found? Are there references or links indicating the source(s) of the information? Are you able to access the references cited, either through the library or through the internet, and do those sources seem credible? Does the website conform to standards of academic writing and grammar?
Authority	Who is taking credit for the information on the site? Is there an author listed? If an author is not listed, why? What credentials does the author have that make him or her qualified to write about this topic? Are you able to contact the author or find out other background information?
Objectivity or Advocacy	What kind of website is this (e.g., entertainment, business, reference, news, advocacy, or personal), or what is the site's purpose? What is the site's domain (e.g., .com, .gov, .edu, .org, .net, .mil, or a country code such as .uk)? How might the site's purpose affect the kind of information it includes or excludes? Does the site present different perspectives?
Currency	When was the information put on the website, and when was it originally written? What is the copyright date, and when was the page was last updated? Do hyperlinks on the site take you to active web pages?
Coverage	Does the author present information in a fair and comprehensive manner? What kind of tone does the author use? Whose perspectives and voices are included and excluded? Are perspectives other than the author's acknowledged and addressed? How does the author treat ideas that conform to or differ from the author's perspective? What kinds of outside support does the author use?

products more generally. Truncating the URL to the left-most single backslash will give you http://www.pharmtech.com, which is a website aimed at people within pharmaceutical industries. Knowing this information gives you important context for assessing the credibility of any content within that site.

For example, take the following address, which leads you to a site with information about evaluating websites: https://lib.nmu.edu/help/resource-guides/subject-guide/evaluating-internet-sources. Truncating it to the left-most single backslash will give you the URL https://lib.nmu.edu, which is the library's home page for Northern Michigan University. Knowing that this is an educational site, rather than a commercial or personal one, gives you information that can help determine the purpose of the information on the page.

Determining the source and purpose of the information you find on the site can highlight some of the possible biases or assumptions that shape the information. Each of the following URLs contains information about ADHD, but each has a different purpose, as Table 3.3 indicates. To practice evaluating websites, apply the criteria outlined in Table 3.2 to the following links:

- https://www.farrin.com/dangerous-drugs/Ritalin-lawyer-north-carolina-legal-help is a page for a law firm;
- http://www.pbs.org/wgbh/pages/frontline/shows/medicating/drugs is part of a public television series about medicating children;
- https://www.team-adhd.com/adhd-treatment is part of the website for a pharmaceutical company;
- http://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd/index.shtml is part of the National Institute of Mental Health's website.

Knowing the purpose of a site's existence can point to the possible biases or assumptions that shape its content. For example, the third URL does not contain a company's name, but a pharmaceutical corporation sponsors the site. Although the company ultimately wants to sell pharmaceuticals, the information is not necessarily inaccurate; however, it could mean that some facts are highlighted whereas others are deemphasized. Knowing this will help you ascertain the credibility and accuracy of the information on the site.

Asking the questions we have offered in this chapter—both for popular and scholarly sources and for websites—will help you identify biases or assumptions in the information presented. You might also find some ideas or perspectives that have been left out or with which you disagree. Noting these limitations will not only help you determine the kind of source you have found, it will also give you insight into the credibility and validity of the author's (or authors') argument. However, remember that

Table 3.3 *Web Pages, Advocacy, and Coverage for ADHD*

URL	https://www.farrin.com/dangerous-drugs/Ritalin-lawyer-north-carolina-legal-help
Host/author	James Scott Farrin, a law firm
Site's purpose	This site is a marketing tool to recruit potential clients for the law firm, which is a for-profit business.
Possible limitations of the site	This site offers information about attention deficit hyperactivity disorder (ADHD), specifically about the dangerous side effects of drugs used to treat ADHD. Although the medical information on this site might be accurate, because the site does not provide information about the benefits of pharmaceuticals used to treat ADHD or about nonpharmaceutical treatment, the coverage is weakened. Therefore, any arguments you make about treating ADHD should draw information from sources that are independent of this website.
URL	http://www.pbs.org/wgbh/pages/frontline/shows/medicating/drugs
Host/author	The Public Broadcasting Service (PBS), a nonprofit media project
Site's purpose	PBS is an educational resource without corporate affiliations. It advertises itself as a resource that "serves the American public with programming and services of the highest quality, using media to educate, inspire, entertain and express a diversity of perspectives" (PBS, 2018).
Possible limitations of the site	The information on this page has been put together through *Frontline*, a public affairs series that PBS sponsors. This site is an informative one, and because it is not affiliated with an organization that has a specific political or business agenda, it should offer a variety of information, representing different perspectives about treating ADHD. However, PBS is a popular source with a lay audience. Although it references scientific studies and interviews scientists, it does not present the studies themselves. Furthermore, PBS relies on monetary support from viewers, so, like a newspaper or magazine, it may foreground more sensational or controversial information. Therefore, any arguments you make about treating ADHD should draw from scholarly sources as well, and you want to make sure you read any articles mentioned on this site in their entirety.

(*continued*)

Table 3.3 (*cont'd*)

URL	https://www.team-adhd.com/adhd-treatment/
Host/author	Supernus Pharmaceuticals Corporation
Site's purpose	The purpose of this site is to inform care givers about their options for treating a child with ADHD. Because the company is a for-profit company that manufactures and sells pharmaceuticals, one purpose of this site is to present pharmaceuticals as an attractive option for treating ADHD.
Possible limitations of the site	Because Supernus ultimately wants to sell pharmaceuticals, it is more likely to include information that shows the benefits of drugs for children diagnosed with ADHD. This site also offers information about therapy and behavioral management as treatment options; and it cites a number of scholarly sources, which increases the strength of its coverage. However, because it is a popular source that targets lay people and is sponsored by a company that wants to sell the product it describes, any arguments you make about treating ADHD should draw from scholarly sources as well.
URL	http://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd/index.shtml
Host/author	The National Institute of Mental Health (NIMH), which is a part of the National Institutes of Health (NIH)
Site's purpose	The NIMH website states that the mission of NIMH is "to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure" (National Institute of Mental Health [NIMH], 2011). The purpose of the NIMH website is to provide information related to mental health issues.
Possible limitations of the site	This site has links to a wide variety of information, and its informative purpose indicates that, like the PBS site, you would find useful coverage of different perspectives about ADHD. Additionally, the site links to resources such as scholarly publications—although the publications are not part of the NIMH site—which strengthens the site's credibility. Nevertheless, the information is directed to a lay audience, so this site alone would not provide sufficient evidence to support a scholarly argument.