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978-0-521-14482-7 - The Psychologist's Companion: A Guide to Writing Scientific Papers for Students and Researchers, Fifth Edition

Robert J. Sternberg and Karin Sternberg

Excerpt

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# Introduction

Most students and even faculty in psychology receive little or no formal training in how to write psychology papers. Nor do they necessarily learn how to write grant and contract proposals, book proposals, or talks and lectures. Many people believe that writers receive sufficient training in writing through informal channels and thus will acquire the necessary skills on their own. Do students learn the writing techniques for psychology on their own? Our experience reading psychology papers suggests that often they do not. Moreover, this experience is shared by other psychology professors and by professors in other disciplines, as well.

The purpose of this book is to provide the basic information that students and professionals alike need to write and write well in psychology. This information is contained in 17 chapters. Although the intent is that you read the chapters in the order in which they are presented, they are for the most part self-contained and hence can be read in almost any sequence.

Chapter 1 presents and discusses eight common misconceptions that students hold about psychology papers. We have found that many of these misconceptions are reinforced rather than extinguished by conventional academic training. Most students come to believe, for example, that journal articles are and should be autobiographical – that the logical development of ideas in a psychology paper reflects their historical development in the psychologist's head. Accepting this notion as a presupposition, students often believe that authors of journal articles can plan their research and predict their findings well in advance, often down to the last detail. Readers will know better after finishing Chapter 1.

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One can write good papers only when one has good ideas that constitute the basis for the papers. Chapter 2 suggests alternative ways to generate ideas for papers. Because not all ideas are good ideas, the latter part of the chapter provides guidelines to decide which ideas are good ones that should be pursued. Finally, the chapter also gives tips on how to sell one's ideas to others.

Chapter 3 describes ways to conduct literature research in the best manner possible. We describe diverse reference materials, introduce literature research methods and useful databases, and explain how to use the Internet for scientific research and to evaluate the information found online.

Chapters 4 and 5 present the sequence of steps that psychologists follow in writing papers. Chapter 4 deals with literature reviews, and Chapter 5 with experimental research papers. The sequence of steps begins with the decision regarding a topic and ends with the publication of a finished paper. Many writers have only a fuzzy idea of the sequence of steps and of how to present this sequence to readers of psychology papers.

Consider two examples. First, would the procedure by which participants are assigned to treatment groups be described more appropriately in the "Procedure" section or in the "Design" section of a psychology paper? Second, do journal editors encourage or discourage extensive use of tables and figures in articles to clarify the presentation of experimental data? The answer to the first question is "Design"; the answer to the second question is "discourage."

Chapter 6 presents guidelines for writing psychology papers. They are divided into three different subsections, dealing with content, language, and style. The guidelines are ones that many students and even professionals fail to follow. One of the reasons they fail to follow these rules is that they forget what the rules are. The chances are good that you remember learning something about avoiding dangling constructions but that either you don't look for dangling constructions in your writing or you don't even remember exactly what a dangling construction is. Chapter 6 will remind you about dangling constructions and other pitfalls in writing papers.

Chapter 7 contains a list of commonly misused words and describes the proper use of each of these words. The meanings of these words, like the rules of writing, are quickly learned but quickly forgotten early in one's career as a student. For example, probably fewer than 10% of the papers [that/which] are published in psychological

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journals consistently use the relative pronouns *that* and *which* correctly. [While/Although] these papers are certainly publishable, their readability would be enhanced by the proper use of English. Which word belongs in each place where two choices are given within parentheses? In the first sentence, the proper word is *that*; in the second sentence, the proper word is *Although*.

Chapter 8 summarizes the American Psychological Association's (2009) guidelines for writing psychology papers. Regardless of how well you write, you must learn a number of different rules that are specific to the writing of psychology papers. Different disciplines follow different guidelines for writing, and one is expected to learn to write according to the guidelines of the appropriate discipline. Common mistakes occur when writers follow Modern Language Association (MLA) guidelines, which are the ones most students learn in high school. Although these guidelines are appropriate for much writing in the humanities, they typically are not appropriate for writing in psychology. Test yourself. Does one abbreviate *centimeters* as *cm* or as *cm.*? Does one abbreviate *feet* as *ft* or as *ft.*? Does one test 10 subjects or ten subjects? Does one test 8 subjects or eight subjects? The rules of the American Psychological Association lead to answers of "cm," "ft," "10," and "eight." The rules of the Modern Language Association lead to answers of "cm.," "ft.," "ten," and "eight." Learning to write a psychology paper involves learning certain rules that are unique to writing psychology papers.

Chapter 9 provides guidelines for data presentation. It gives rules for presenting data in the form of tables or graphs, as well as guidance on the advantages and drawbacks of different types of presentations. Following these guidelines will aid both your understanding of your data and your ability to communicate them effectively to others.

Chapter 10 deals with the criteria psychologists use to evaluate a particular paper's contribution to knowledge. What characteristics distinguish truly exceptional psychology papers from good ones and good ones from poor ones? Why do some papers continue to have an impact on the field long after other papers have been forgotten? Chapter 10 addresses these questions.

Ethics are of great importance when conducting research and writing scientific papers. Chapter 11 discusses several issues and pitfalls that psychologists may face during their careers and gives advice on how to avoid them.

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Chapter 12 contains practical suggestions for submitting a psychology paper to a professional journal. What considerations enter into the choice of a journal? What happens to a paper once it is submitted? What are the possible courses of action a journal editor can take? You will find out when you read Chapter 12.

You are not done with your paper just because you have finished your first draft. If you intend to write a good paper, what follows are proofreading and revisions. After submission to a journal and even after acceptance of your article, you may have to revise and edit your work. Chapter 13 gives you some tips how to make this process as successful as possible.

Chapters 14–16 are oriented more toward professional and soon-to-be-professional users of this book than toward student users. Chapter 14 contains techniques people can use to increase the chances of their getting funding through a grant or contract. Ultimately, the most important determinant of funding is the set of ideas in the proposal. But many proposals are rejected on grounds that have little or nothing to do with ideas. Competition for grants and contracts is extremely stiff. Therefore, every edge can help. This chapter helps grant writers maximize their chances of winning funding, giving them the edge that may make a difference to the outcome.

Chapter 15 describes the steps a person takes in seeking a book publisher. How do you write a book proposal, and what do you do with the proposal once you are done? Despite the importance to scholars of writing books as well as articles, people tend to know even less about how to find a publisher for a book than they do about how to get an article published. This chapter describes from beginning to end the process of finding a book publisher.

Chapter 16 discusses the writing of effective lectures. Many psychologists end up, sooner or later, teaching. For some, it may be in the form of courses for undergraduate and graduate students. For others, it may be in the form of public lectures. And for still others, it may be in the form of occasional seminars. All of us who have gone through school know how important good lectures are to learning. This chapter will help the reader write and deliver such lectures.

Chapter 17 is a primer on effective writing of articles for psychological journals. It contains tips both on what you should do and what you should not do.

The Appendix contains a sample paper typed according to APA guidelines. The paper is presented as it was typed rather than as it

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would appear in a journal. The paper illustrates many of the principles described in Chapter 8.

As you progress through this book, you will discover that writing for an audience of psychologists requires a unique set of skills. For most students and professionals alike, merely reading and writing psychology papers is an insufficient way to acquire these skills. This book is intended for and dedicated to all of you who want to improve your writing.

# 1 Eight Common Misconceptions About Psychology Papers

Students and inexperienced writers often have misconceptions about the writing process and characteristics of good papers that effectively prevent them from writing as good a paper as they possibly could. Here are eight common misconceptions you should be aware of before you even begin writing:

1. Writing the psychology paper is the most routine, least creative aspect of the scientific enterprise, requiring much time but little imagination.
2. The important thing is what you say, not how you say it.
3. Longer papers are better papers, and more papers are better yet.
4. The main purpose of a psychology paper is the presentation of facts, whether newly established (as in reports of experiments) or well established (as in literature reviews).
5. The distinction between scientific writing, on the one hand, and advertising or propaganda, on the other hand, is that the purpose of scientific writing is to inform, whereas the purpose of advertising or propaganda is to persuade.
6. A good way to gain acceptance of your theory is by refuting someone else's theory.
7. Negative results that fail to support the researcher's hypothesis are every bit as valuable as positive results that do support the researcher's hypothesis.
8. The logical development of ideas in a psychology paper reflects the historical development of ideas in the psychologist's head.

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## 7 Eight Common Misconceptions About Psychology Papers

**Misconception 1.** Writing the psychology paper is the most routine, least creative aspect of the scientific enterprise, requiring much time but little imagination.

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Many students lose interest in their research projects as soon as the time comes to write about them. Their interest is in planning for and making new discoveries, not in communicating their discoveries to others. A widely believed fallacy underlies their attitudes. The fallacy is that the discovery process ends when the communication process begins. Although the major purpose of writing a paper is to communicate your thoughts to others, another important purpose is to help you form and organize your thoughts.

Reporting your findings in writing requires you to commit yourself to those findings and to your interpretation of them, and it opens you to criticism (as well as praise) from others. It is perhaps for this reason as much as any other that many students are reluctant to report their research. But the finality of a written report also serves as a powerful incentive to do your best thinking and to continue thinking as you write your paper. It requires you to tie up loose ends that you might otherwise have left untied. As a result, reporting your findings presents just as much of a challenge as planning the research and analyses that led to those findings.

We have often thought we knew what we wanted to say, only to find that when the time came to say it, we were unable to. The reason for this, we believe, is that in thinking about a topic, we often allow ourselves conceptual gaps that we hardly know exist. When we attempt to communicate our thoughts, however, these gaps become obvious. Organizing and then writing down our thoughts enables us to discover what gaps have yet to be filled.

**Misconception 2.** The important thing is what you say, not how you say it.

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As a college student, the lead author was mystified to find that students who wrote well consistently received better grades on their compositions than did students who wrote poorly. Even in his own compositions, he found that the grades he received seemed less to reflect what he had to say than how he said it. At the time, he was unable to decide whether this pattern in grading resulted from the professors' warped value systems or from their inability to penetrate

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the facade of written prose. Whereas their criteria for grading papers might be appropriate for an English course, these criteria seemed inappropriate for courses in subjects like psychology.

As a college professor, the lead author has at last discovered the secret of the mysterious grading practices. The discovery came about in two stages, each one part of the initiation rites that new college teachers must go through. The first stage occurred when he found himself with a large number of students' papers to read and very little time in which to read them. He was then sincerely grateful to students who wrote well because he could read their papers quickly and understand what they were saying. He did not have the time to puzzle through every cryptic remark in the poorly written papers, however, and he resented the authors' presenting their ideas in a way that did not enable him to understand or evaluate them properly. He also found himself with no desire to reward the authors for this state of affairs. If their ideas were good, they should have taken the time to explain them clearly.

The second stage of discovery occurred when he found himself with just a few seminar papers to read and plenty of time in which to read them. Now, he thought, he could be fair both to students who write well and to those who do not. He was quickly disabused of this notion. He discovered that whereas it is usually easy to distinguish well-presented good ideas from well-presented bad ideas, it is often impossible to distinguish poorly presented good ideas from poorly presented bad ideas. The problem is that the professor's comprehension of what the student says occurs solely through the student's way of saying it. Professors can't read minds better than anyone else. If an idea is presented in a sloppy, disorganized fashion, how is one to know whether this fashion of presentation reflects the quality of the idea or merely the quality of its presentation?

The question is not easily answered. In one case, the lead author had talked to a student beforehand about what that student was going to say, and he expected an outstanding paper on the basis of these conversations. During those conversations, certain details had not been clarified, but the professor expected these details to be clarified in the paper. Instead, the same ideas that had been inadequately explained in the conversations were inadequately explained in the paper, as well. Either the student was unable to clarify these ideas for himself, or he was unable to clarify them for others.



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## 9 Eight Common Misconceptions About Psychology Papers

The outcome for the reader is the same: confusion and disappointment.

A comparable situation exists for researchers. One quickly notices that the best and most well-known psychologists are also among the best writers. Although there are exceptions, they are infrequent: Poorer writers have fewer readers. One reason for this fact is that poorly written articles are usually rejected by journal editors. Although journal editors are willing to make minor editorial changes in the articles they receive, they are usually unwilling to publish or rewrite poorly written articles. Even if a poorly written article is accepted and published, however, psychologists who receive a journal with 5–20 articles in it do not want to spend their limited time reading such an article. It is therefore important that you learn now how to present your ideas in a readable fashion.

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### **Misconception 3. Longer papers are better papers, and more papers are better yet.**

Until his first year of teaching, the lead author believed that longer papers were better papers. Teachers had for years told him and his classmates that they didn't evaluate papers on the basis of length, but he viewed their remarks as a benign ruse designed to discourage length for its own sake. He changed his viewpoint when he started reading students' papers. Evaluating papers on both quality and quantity of ideas, he found little relation between either of these two criteria and the length of students' papers. Sometimes students wrote longer papers because they had more to say; other times they wrote longer papers because it took them several pages to say what could have been said in several sentences. There is nothing wrong with length per se, so long as length is not used as a substitute for tight organization and clear writing.

Rather than writing longer papers, some people have taken the other route of writing more papers. Why say in one paper what can be said in two for twice the credit? This kind of mentality meets the needs of people who count publications but not of those who read publications. An integrated series of related experiments will have more impact if published as a single, tightly knit package than if published as a string of hastily written articles, none of them of much interest in itself.

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**Misconception 4.** The main purpose of a psychology paper is the presentation of facts, whether newly established (as in reports of experiments) or well established (as in literature reviews).

A common misconception among the general public is that the goal of science is the accumulation of facts. This misconception is fostered by popular scientific writing that emphasizes scientific findings, which may be easy to describe, at the expense of explanations of those findings, which may be both diverse and difficult to describe. Diverse explanations, however, are the hallmark of science.

Students in introductory psychology courses are prone to this misconception, and it carries over into their writing. We could cite numerous examples of this carryover, but one in particular comes to mind. We received some years ago a beautifully written paper reviewing the literature on the testing of infant intelligence. This was one case, however, in which flowing prose was insufficient to obtain a high grade. The paper was flawed in two respects. First, the author made no effort to interrelate the various attempts to measure infant intelligence. Each attempt was described as though it had been made in isolation, even though the various attempts to measure infant intelligence have drawn on each other. Second, the evaluative part of the paper consisted of a single sentence in which the author stated that it is still too early to draw final conclusions regarding the relative success of the various infant intelligence tests. This sentence is literally true: It was too early to draw final conclusions. But it will be too early to draw final conclusions as long as new data about the tests continue to be collected. Because data will continue to be collected for the foreseeable future, and because the tests date back to the early part of the 20th century, it now seems appropriate to draw at least tentative conclusions. In writing a psychology paper, you must commit yourself to a point of view, even if you may change your mind later on. If the evidence on an issue is scanty, by all means say so. But draw at least tentative conclusions so that the reader knows how you evaluate what evidence is available.

Your paper should be guided by your ideas and your point of view. Facts are presented in service of ideas: to help elucidate, support, or rewrite these ideas. They provide a test against which the validity of ideas can be measured. You should therefore select the facts that help clarify or test your point of view and omit facts that are irrelevant. In being selective, however, you must not select only