

makes your text sound disjointed. The paragraph, not the sentence, is the basic unit of writing.

Master the rules of style, but don't let those rules paralyze you when you sit down to write. Revising while you generate text is like drinking decaffeinated coffee in the early morning: noble idea, wrong time. Your first drafts should sound like they were hastily translated from Icelandic by a nonnative speaker. Writing is part creation and part criticism, part id and part superego: Let the id unleash a discursive screed, and then let the superego evaluate it for correctness and appropriateness. Rejoice in writing your gnarled and impenetrable drafts, just as you rejoice in later stamping out your fuzzy phrases and unwanted words.

CONCLUSIONS

This chapter sought to make you self-conscious about your writing. Many individuals display inaccurate self-assessments of their deficient writing skill levels—or to borrow Zinsser's (2001) simple sentence: "Few people realize how badly they write" (p. 19). Strong, clear writing will make your work stand out from the crowd of shoddy, obtuse, pretentious, and mediocre manuscripts and grant proposals. People respect good writing. Reviewers of grant proposals know that clear writing requires clear thinking; journal editors appreciate a clean description of a good idea. Read some of the books listed in the back of this book, practice the principles of good writing when you generate and revise text, and never write *individuals or such that* again.

Writing Journal Articles

Psychology journals are like the mean jocks and aloof rich girls in every 1980s high school movie—they reject all but the beautiful and persistent. Writing a journal article combines all the elements that deter motivation: The probability of success is low; the likelihood of criticism and rejection is high; and the outcome, even if successful, isn't always rewarding. Doing research is fun; writing about the research is not. Despite this, we must write journal articles because science communicates through its journals. Conferences are great for meeting old friends and seeing what fellow researchers are doing, but conference presentations are neither peer reviewed nor archived. Publication is the natural end point of the process of research.

The field's file cabinets are full of unborn articles. I know many researchers who have a shameful backlog of data; some have unpublished data from the 1980s that they "hope to publish someday." Sure they will. Because psychology venerates journal articles above other forms of publication, the field has good resources



"I wrote another five hundred words. Can I have another cookie?"

© The New Yorker Collection 2001 Mick Stevens from cartoon.bank.com. All Rights Reserved.

that help beginning writers learn how to publish journal articles (e.g., American Psychological Association [APA], 2010; Sternberg, 2000). Most of those resources, however, have failed to address the hard motivational problems involved in writing articles. This chapter gives a practical and personal look at writing journal articles. It provides tips for writing stronger articles and advice for writing in the face of inevitable criticism and failure. The advice in this chapter won't make you love writing articles, but it will help you write more of them with less dread.

PRACTICAL TIPS FOR WRITING AN EMPIRICAL ARTICLE

Writing a journal article is like writing a screenplay for a romantic comedy: You need to learn a formula.

As odd as it sounds, you should be grateful for APA Style. Once you learn what goes where—and what never goes where—you'll find it easy to write journal articles. If you don't own the latest *Publication Manual of the American Psychological Association* (APA, 2010), you should buy it.

Outlining and Prewriting

On my list of maladaptive practices that make writing harder, Not Outlining is pretty high—just above Typing With Scratchy Wool Mittens, just below Training My Dog to Take Dictation. Outlining is writing, not a prelude to “real writing.” Writers who complain about “writer’s block” are writers who don’t outline. After trying to write blindly, they feel frustrated and complain about how hard it is to generate words. No surprise—you can’t write an article if you don’t know what to write. People who write a lot outline a lot. “Clear thinking becomes clear writing,” said Zinsser (2001, p. 9). Get your thoughts in order before you try to communicate them to the world of science.

Writing an outline lets you make early decisions about your paper. How long do you want your paper to be? How much attention do you want to give to past research? Should this paper be a short report or a full-length research article? Most of these decisions are between you and your research, but I encourage you to be concise. After many years of bloated articles crowding the journals, psychology is moving toward

shorter articles. Some prestigious journals publish only short articles (e.g., *Psychological Science*), and many others have recently created short reports sections. Short is good. Think about how you feel when you read journal articles. Do you wish that they would end sooner, or do you wish that the authors would keep their momentum going for another 14 pages? Don't cram everything into one paper. You can write a lot of papers in your career, so you can work an omitted idea into another paper or develop it into a paper of its own.

An inner audience—an image of who will read your paper—will help you with your writing decisions. How thoroughly should you describe competing theories of visual attention? Should you explain a statistical method, or should you assume that most readers will understand it? Other professionals in your area—the professors and graduate students who share your research interests or wish to learn more about the topic—are the biggest part of your audience. Write for this audience. Smaller groups within your audience include undergraduate students, journalists, people working in related fields, and a few eclectic readers (e.g., bloggers and humorists). Many of your readers speak English as a second or third language; keep them in mind when you're tempted to choose trendy, vapid words. To refine your inner audience, make a rough list of the journals that you would want to publish your paper. Journals such as *Journal of Experimental Psychology: General* and *Psychological Science* have broad audiences; other jour-

nals, such as *Visual Cognition* and *Self and Identity*, attract audiences of specialists. When writing for specialists, you can assume that your readers know the field's theories, findings, and methods. And write your paper with a smooth, professional tone. Your goal is to sound like a normal person with something worthwhile to say—don't be too serious or too casual.

The Title and Abstract

Most readers who come across your article will see only the title and abstract, so make them good. A title must balance generality and specificity: Say what your article is about, but don't be so specific that your article sounds technical and tedious. If tempted to write a trendy, topical, or comical title, think about how it will sound in 10 years. Will future researchers get the joke? In the digital age, readers find your article with electronic databases that store and search titles and abstracts. Include all the search keywords in your abstract that you want to yield your article. For my research on self-awareness, for example, I use synonyms like *self-focus*, *self-focused attention*, and *self-consciousness* in the abstract. It seems that nearly everyone writes the title and abstract last, so follow the herd.

Introduction

Your introduction conveys the significance or triviality of your research. Of the parts of your article, the introduction is most likely to be read instead of skimmed

or skipped. As a result, it's the section that writers fear most. Some people warn beginning writers that there's no formula for an introduction (e.g., Kendall, Silk, & Chu, 2000). Nonsense—of course there's a formula. Good writers use a good formula; you'll recognize it.

- Start your introduction with an overview of the article, which should be only one or two paragraphs. In this overview, describe the general problem, question, or theory that motivated the research. The goal of this section is to justify the article's existence, to interest the reader, and to provide a framework that will help the reader understand the rest of the article.
- After your overview, start with a heading that introduces the second part of your introduction. The heading might resemble your title. This second section is the body of the introduction: Here you describe relevant theories, review past research, and discuss in more detail the question that motivated your research. Use headings and subheadings as signposts. If there are two theories, for instance, create a subheading for each one. Keep the second section focused on the problem you described in the first section.
- After the second section, write a heading called *The Present Experiments* or *The Present Research*. Thus far, you have given an overview of your problem (section 1) and reviewed the necessary theories and findings (section 2). By now, the

reader understands your question's context and significance. In this third section, describe your experiments and explain how they answer this question—it might take one to four paragraphs, depending on the level of detail. Conclude this section with the heading that begins your Method section (*Method* or *Study 1*).

This formula introduces the reader to your problem (section 1), reviews theories and research relevant to the problem (section 2), and clearly states how your research will solve the problem (section 3). It leads the reader down a clear path, and it keeps the writer from straying into irrelevant areas. You'll find exceptions to this formula—for short reports, a single section with no headings might suffice—but it will serve you well for most of your papers.

Your introduction should introduce the research, not exhaustively review everything anyone has ever said about your problem. Brief reports may have crisp 2- to 3-page introductions; mammoth manuscripts submitted to journals that indulge windy writers may have 12- to 20-page introductions. When writing normal research articles, keep your introduction under 10 manuscript pages.

Method

Method sections aren't glamorous, but they reveal how carefully you conducted your research (Reis, 2000). A good method section allows another researcher to

replicate your study. Like introductions, method sections follow a formula. Your method section will have several subsections. The first, *Participants* or *Participants and Design*, describes the size and characteristics of the sample and, for experiments, the experimental design. If your study involved equipment—such as physiological equipment, unusual software, response pads, or voice-activated response switches—you'll need a subsection called *Apparatus*. A *Measures* subsection is helpful for research that involved sets of scales, tests, and assessment tools, such as neurocognitive tests, interest inventories, and self-report measures of attitudes or individual differences.

After these subsections, you have the *Procedure* subsection, the heart of your Method section. In this section, describe what you did and said. Reviewers pay close attention to the *Procedure* subsection, and you don't want to look like you're hiding something. Provide a lot of detail about your independent variables and dependent variables. Your rhetorical goal is to connect your procedures with the procedures used in published articles. If your experiment used a manipulation that has been used before, cite representative past experiments, even if the manipulation is well-known. If you invented the manipulation, cite research that used similar manipulations or research that implies that your manipulation is reasonable. If your independent variable involved classifying people into groups (e.g., low and high social anxiety), describe the basis for the classification (cutoff scores, norms, conventions) and

cite past research that used the same classification basis. Connecting your procedures to past research allays concerns about the validity of your methods.

Reviewers want to know how you measured your dependent variables. If your dependent variables are well established, cite articles that developed or used the scales. For professional tests, cite the test manuals as well as recent articles that used the tests. If your dependent variables were ad hoc, such as self-report items that you wrote, list each item and cite a paper that used similar items. For self-report scales, list the scale values—for example, 7-point scales can be 1 to 7, -10 to 6, or -3 to +3—along with any labels that anchored the scale (e.g., 1 = *not at all*, 7 = *extremely*). If your dependent measures were physiological or behavioral, briefly describe past research that supports the construct validity of your measure.

Papers that report a series of studies can save space by reporting variations from the first experiment's methods. If all three experiments used the same apparatus, for instance, you needn't describe the apparatus three times. When describing the later experiments, just say that they used the same equipment.

Results

The *Results* section describes your analyses. Beginning writers feel compelled to report every possible analysis of their data, probably because thesis and dissertation committees want to see such analyses. Journal articles

should be crisp: Report only the results that bear on your problem. Bad Results sections are long lists of numbers and statistical tests; good Results sections create a story (Salovey, 2000). First, start your Results section with analyses that inform the integrity of your study. This section might report the internal consistency of self-report scales, estimates of interrater agreement, analyses of manipulation checks, or the method of data reduction and treatment.

Second, describe your analyses in a logical sequence. There's no one way to do this—it depends on your methods and hypotheses—but try to cast your central findings into bold relief. Salovey (2000) suggested reporting your most interesting and important findings first. When describing results, don't mindlessly report test after test. For each test, remind the reader of your hypothesis, report the statistics, and then discuss what the tests mean. “But discussions of findings are for the general discussion!” protest beginning writers. This is a misunderstanding of what people learned in their undergraduate research methods classes. The results section isn't an exclusive club for numbers only. Don't just report a one-way analysis of variance and say it was significant. Describe your prediction, report the test, and describe what the findings mean. Which group was higher than the other? Was the pattern consistent with your prediction?

Third, use tables and figures to reduce the clutter of numbers that afflicts most results sections. My most common comment as a manuscript reviewer is, “The

authors should present the descriptive statistics in a table.” For experimental designs, make a table that presents the means, standard deviations, and cell sizes. To go the extra mile, include 95% confidence intervals—reviewers will appreciate your openness, and readers will be able to compute their own analyses of your data. For correlational designs, make a table that presents the means, standard deviations, sample sizes, confidence intervals, estimates of internal consistency, and a correlation matrix. With that information, a reader can create and test structural equation models of your data (Kline, 2005). There's no law against presenting data in both a figure and a table: The figure is for readers who want to see the pattern of data, and the table is for readers who want the dirty details.

Discussion

If your paper has several studies, a *Discussion* section follows each Results section. These sections are narrower than the General Discussion. They summarize the study's findings and discuss how the study informs the paper's central problem. Discussions should also address limitations in the experiment, such as unexpected results or problems with the procedure. Consider creating a *Results and Discussion* section if your Discussion section merely summarizes the results.

General Discussion

The General Discussion steps back and looks at your findings in light of other theories and past research.

Start your General Discussion with a brief overview of your problem and your findings: One or two paragraphs will usually be enough. Good General Discussions have little in common—your problem, methods, and research area will dictate what you ought to discuss—except that they are usually short. Think about how you read General Discussions. Do you skim them, skip them, or complain about the author's fruitless discussion of every minor aspect of the research? Try to keep the General Discussion shorter than the introduction. If you like, conclude the General Discussion with a one-paragraph summary of the entire article.

Your undergraduate research-methods teacher told you to end your general discussion with a section on limitations; your thesis committee probably wanted this section, too. Describing limitations is a useful educational exercise, but it's often pointless in an article intended for a professional journal. Some limitations are generic to all research. Yes, it would have been nice to have a larger and more representative sample; yes, it would have been nice to have included even more measures; yes, it's conceivable that a future study that uses different measures with a larger sample will find a different pattern of results. Don't insult your audience—everyone knows that these limitations inhere in all research. Other limitations are generic to an area of research. Cognitive psychologists know that they use contrived computer-based tasks; social psychologists know that they use convenience samples of undergraduates. Specialists know that your research

shares the area's generic limitations. Don't waste time stating the obvious. Instead, devote space to limitations specific to your research. But don't merely raise your study's limitations—raise them and then make a good case for why they aren't as grim as they look.

References

Your *References* section documents the sources that influenced the ideas in your paper. By embedding your work within the field of science, your references say a lot about how you view your research. Be selective—you needn't cite everything you read on the topic, and you should never cite books or articles that you haven't read. Scholars who have read those articles can tell that you cribbed the reference from another source. Although not as glamorous as an introduction or as brawny as a results section, a reference section deserves to be done well. As a reviewer, I see a lot of sloppy reference sections. Lazy writers often commit grievous crimes against APA Style and fail to include references for articles cited in the text. "What's the big deal?" some would say; "They're just references." Your friends down the hall can see your sloppy reference list; the critical, anonymous peer reviewers should see your best work.

Seasoned writers use their references to increase the odds of getting desired reviewers. When editors consider possible reviewers for your paper, they often flip to the references to see whom you cited. I'm not sure if this

trick works, but it probably can't hurt. Also, cite your past work in your new manuscripts. Self-citations strike some writers as shameless self-aggrandizement. I've met writers, invariably beginners, who were reluctant to cite themselves. Citing your past work connects your latest article with your stream of work. If someone is interested enough in your work to read your latest article, he or she would probably be interested in reading your other articles, too. Self-citations make it easy for readers to learn about them.

SUBMITTING YOUR MANUSCRIPT

Your manuscript is ready to be submitted to a journal when it's clear, well-written, and as perfect as possible. If you think "I'll just send it now and clean it up later when I resubmit it," stop thinking and start revising. Only masochists submit rough drafts to journals. Pristine manuscripts grab the attention and respect of reviewers and show the editor that you're a serious professional who can be counted on to do revisions quickly and thoroughly. Before submitting your pristine manuscript, read the instructions to authors posted on the journal's website. Read these directions closely, because journals have different submission guidelines. Most journals accept electronic submissions, either by e-mail or through a web-based submission portal.

Regardless of how you submit your manuscript, you'll need to write a cover letter to the editor. Some

people write a simple, standard letter; others write an extended exegesis on the merits and importance of the manuscript. I asked some friends who have edited major journals about their preferences. They unanimously preferred a simple letter with the essential boilerplate: the name of the manuscript, the author's mailing and electronic addresses, and the standard assurances that the manuscript isn't under review elsewhere and that the data were collected according to the field's ethical standards. One person, an associate editor, noted that he often didn't read the author's cover letter because the submission portal made it hard to retrieve. Another told me that she wanted to be persuaded by the manuscript, not by a letter about the manuscript.

In your cover letter, you can suggest possible reviewers and request that certain people not serve as reviewers. I've heard from editor friends that they're more likely to honor the "do not review" list than the friends and cronies list. Perhaps one of the associate editors at the journal would be perfect for reviewing your manuscript. If you like, you can ask the editor to assign the manuscript to that associate editor. (Although I've made this request several times, my manuscript was never assigned to that person.)

UNDERSTANDING REVIEWS AND RESUBMITTING YOUR MANUSCRIPT

While idly leafing through old issues of *Child Development*, I read an editorial from the early 1970s. The