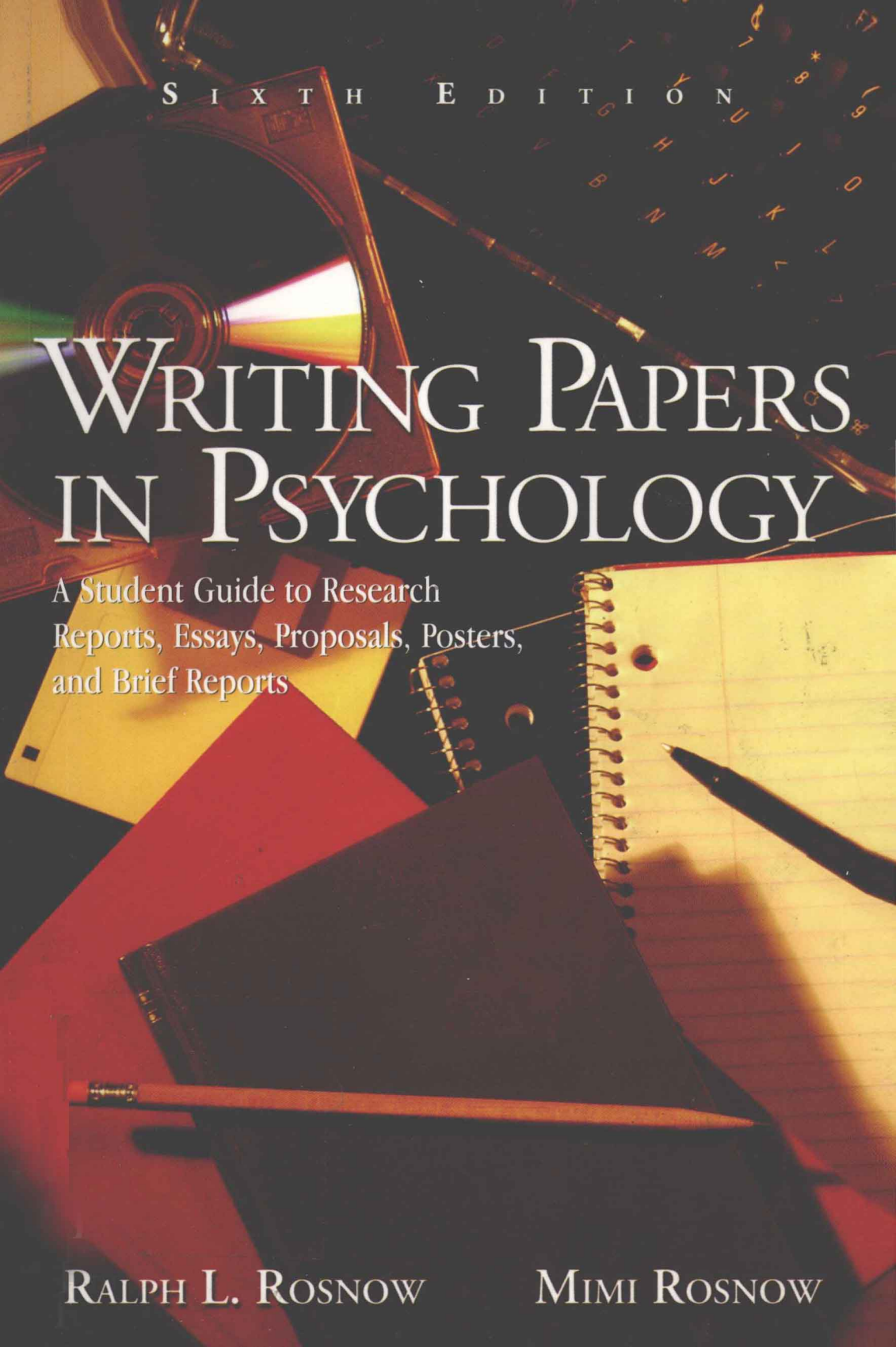
SIXTH EDITION
WRITING PAPERS IN PSYCHOLOGY
A Student Guide to Research Reports, Essays, Proposals, Posters, and Brief Reports
RALPH L. ROSNOW
MIMI ROSNOW

Writing Papers in Psychology

A STUDENT GUIDE TO RESEARCH REPORTS, ESSAYS, PROPOSALS, POSTERS, AND BRIEF REPORTS

Ralph L. Rosnow *and* **Mimi Rosnow**

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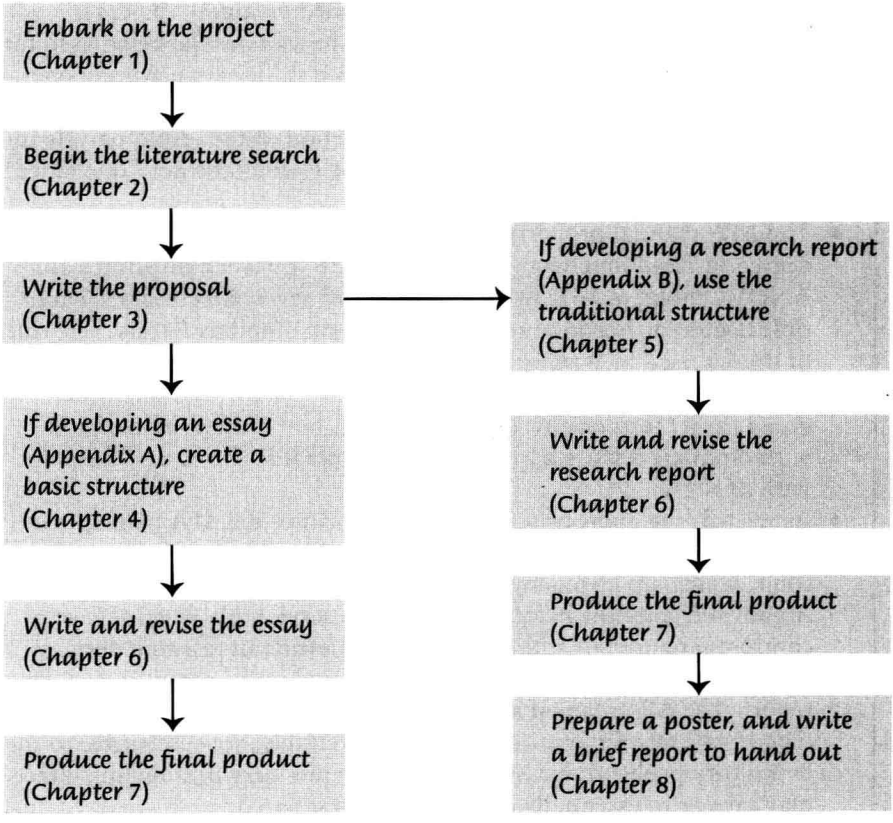
To the partnership
that brought this book about

and

to Miles and R.J.
whose promise shines

Preface for Instructors

Writing Papers in Psychology began as a handout designed to help students write research reports back in the days when word processors were called typewriters. The first edition of this book was, in fact, composed on a typewriter; it was not until the third edition that the picture on the cover hinted of a computer keyboard. Typewriters are artifacts of an earlier generation, and in this sixth edition, we emphasize advances within the grasp of this generation of students. Guided by the following flowchart, students writing research reports, essays, proposals, posters, and brief reports as handouts can refer to specific chapters and selections as needed:



Recommended Style

The recommended style of presentation of student essays and research reports in *Writing Papers* is in the spirit of the fifth edition of the *Publication Manual of the American Psychological Association* (hereafter called the APA manual), published by the APA in 2001. Among the changes in the APA manual are certain emphases on the reporting of statistical results, which reflect repeated reminders in recent years of the failings and limitations of the rhetoric of the "accept/reject" paradigm in null hypothesis significance testing. In 1999, the APA's Task Force on Statistical Inference proposed guidelines for addressing this situation, including the reporting of interval estimates for effect sizes involving principal outcomes and paying heed to statistical power considerations in significance testing. The sample research report in Appendix B has been revised to embrace these recommendations.

There are inconsistencies in the APA manual's discussion of statistical topics, however, which could be a source of confusion to psychology students:

- For example, in discussing "Notes to a Table," the APA manual recommends the use of "asterisks for the two-tailed p values and an alternate symbol (e.g., daggers) for the one-tailed p values" (p. 171). However, an example on the same page shows asterisks being used for p values of F distributions, although such p values are naturally one-tailed. If a student believed that the asterisked p value meant it was two-tailed and, having predicted the direction of the result, naively divided the p value by 2, the new p value of F would be not "one tailed" but "one-half-tailed."
- The APA manual properly cautions against the reporting of "multiple degree-of-freedom effect indicators" (p. 26) but then illustrates an ANOVA table (p. 162) in which six out of seven effect sizes are multiple degree-of-freedom indicators based on omnibus F tests. The rule of thumb used in *Writing Papers* is to report effect sizes only in association with focused statistical tests (e.g., F tests with numerator $df = 1$, any t test, or any 1-df chi-square), but never in association with omnibus tests (e.g., F tests with numerator $df > 1$ or chi-square with $df > 1$).
- As regards the appropriate effect size indicator, the APA manual recommends Cohen's d but fails to mention either Hedges's g or the Pearson r, which are also quite suitable in the simple setting of two groups. An advantage of the r statistic is that it is serviceable when t, F, or z contrasts are used to address a focused question in research designs with more than two conditions, as illustrated in the sample research report. The APA manual also recommends certain squared indices (i.e., r^2, η^2, ω^2, R^2, ϕ^2), all of which, regrettably, are susceptible to the expository problem that small, but sometimes very meaningful, effects may appear to essentially disappear when squared.

Thus, although the APA manual is largely without peer in most other respects, problems such as these are one reason why we say that *Writing Papers* is "in the spirit" of the APA manual rather than matching it exactly.

Another reason is that the APA manual is focused on the preparation of manuscripts for submission to journals, whereas only an infinitesimally small number of undergraduate essays or research reports are revised for submission to journal editors. Student papers are written for instructors to evaluate and grade, and it makes sense that the needs of instructors are different in some ways from journal editors' and reviewers' requirements. For example, many instructors of research courses like to see the raw data and possibly even the statistical calculations. Thus, the sample research report contains an appendix for this information, so that instructors can more easily assess whether any mistakes are due to misunderstanding, carelessness, or typographical errors. Another departure from the APA manual is the cover page of the student's paper, because there is no compelling reason to require a "running head" (the purpose of which is to suggest to the copyeditor an abbreviated title to be printed at the top of the pages of a published article), but there is good reason to ask for a page header and for identifying information relevant to the course and the instructor.

In fact, the APA has for some time been flexible in many of its stylistic requirements, as indicated by various responses to questions appearing on the old APA Publication Manual Web site (www.apa.org/journals/faq.html). For example, a student asked whether the title shown on the title page of a manuscript belonged in the middle of the page or closer to the top of the page, because the student had noticed that "colleagues' versions of the Publication Manual showed a different graphic for the title page of a manuscript." The APA's response was that either version was correct.

Another writer, who was also using the fourth edition of the APA manual, asked why underlining was required instead of italicizing, because a word processor makes it just as easy to italicize as underline. The APA's answer was that underlining signals to the typesetter to use italics, but that if a manuscript for publication was in final form, it was acceptable to use the italicizing function to mimic what would be typeset in italics and to improve the appearance of the manuscript. The fifth edition of the APA manual prefers that italics rather than underlining be used, but even when italicizing is used in a manuscript accepted for publication, the copyeditor generally inserts an underline anyway.

Regarding the hanging versus paragraph-type indent used when formatting references, on which the APA manual has wavered back and forth in the third, fourth, and fifth editions, the APA's Web site response to a question about this practice was "If you are preparing a manuscript in final form, meaning that the manuscript will not later be typeset and published, you may prefer to format references with a hanging indent to enhance readability." The fifth edition of the APA manual recommends, but does not insist on, the

hanging indent format; the APA manual does caution, however, that "the chosen format should be consistent throughout the references" (p. 299).

As all instructors are aware, stylistic consistency is never a hobgoblin but is always a virtue of polished writing and is certainly a boon for busy graders who must carefully consider a seemingly endless volume of term papers and reports. The "in the spirit" orientation of this book is designed to make the process of conceptualizing, writing, and producing an essay or a research report generally consistent with the style of the APA manual, but also meaningful and palatable in a way that is useful to students not only in college courses but afterward as well.

New to This Edition

In revising *Writing Papers* to reflect the spirit and substance of the APA manual, we eliminated several exhibits and one of three sample papers (to afford space for new exhibits and other new material) and updated the two remaining papers. The two sample papers have been annotated with side notes. All of the chapters have been revised and updated, including further explanation and additional examples of references in the APA style. In Chapter Five, there is an exhibit on the uses of the term *validity* in research and assessment, as well as mention of different types of reliability, as a reminder to students not only to specify which type of reliability or validity they actually mean but also to encourage critical thinking skills.

Also new to this edition is Chapter Eight, which describes the creation of a poster based on the sample research report. Although it is rare that students submit a research report for publication, it is becoming increasingly common for them to present their results in a poster. Because the APA manual does not discuss poster presentations (i.e., except for how to reference them), and as the specifics vary from one sponsoring organization to another, we have proposed general guidelines. So as not to limit our discussion to the first author's experience, we contacted a number of national and regional organizations in psychology and other sciences that have sponsored poster presentations at meetings, and we also consulted experienced presenters for advice. Poster presenters customarily bring printed copies of a brief report for distribution, and we describe how to prepare such a handout. Advice that we received from Peter B. Crabb (Penn State University-Abington) was particularly helpful, and we thank him not only for his informative suggestions but also for allowing us to use his work as a style guide in creating the brief report illustrated in this chapter.

In reporting quantitative values, students are often puzzled by how many decimal places to indicate. The APA manual's rule of thumb is to report descriptive data (e.g., means, standard deviations, Cohen's d) and inferential test results (e.g., t, F, χ^2) to two decimal places—which is the standard used in this book. In computing statistical results by hand, however, problems could arise if the student scrimped on the number of decimal places in the interme-

diate calculations, as rounding errors could produce inaccurate results. To emphasize this point, all of the intermediate calculations in the results calculated in the appendix of the sample research report are not rounded to two decimal places (although, of course, scientific calculators and computers don't round until the end anyway).

Students also frequently ask how to report statistical significance, particularly when they see statements like "significant difference" and "no significant difference" but no indication of the actual *p* value. Statements like these can be terribly misleading if all the writers mean is that the *p* value they obtained was on the "wrong" side of .05. There is something absurd about regarding as a "real" effect one that is supported by $p = .05$ and as a "zero" effect one that is supported by $p = .06$. The sample research report shows the tabular values reported to two decimal places (as the APA manual recommends) but shows the *p* values more precisely indicated in the results section (as preferred by many statisticians). Chapter Five offers further guidance while also cautioning students about avoiding the traps of false precision and needless precision in reporting results.

We have been gratified by the comments we have received about a chapter that was new to the previous edition, Chapter Two, with its emphasis on using electronic and traditional resources to do a literature search. In light of further developments in this area, we have revised and updated this chapter with more recent information and have added a new exhibit defining terms and jargon on the Web.

Additional Points

Several instructors have told us they have used *Writing Papers* to usher graduate students into the APA style; we have again included some ideas with that audience and objective in mind. For graduate students writing articles for publication, we recommend reading *The Psychologist's Companion* (Cambridge University Press, 1993), an introduction to all aspects of professional writing by a noted psychologist, Robert J. Sternberg, who has been successful in all of them. Whether one is writing for a course or professionally, an essential reference for style is Will Strunk and E. B. White's classic "little book," *Elements of Style* (Allyn & Bacon, 2000), a gem of a book that belongs on every author's desk.

Effect size calculations in the sample research report reflect the correlational approach spelled out in the first author's undergraduate research methods text. But there are, of course, other popular undergraduate research methods texts in psychology. Two engaging texts with student-friendly discussions of the *d* or *r* effect-size index and the role of statistical power in significance testing are Arlene C. Vadum and Neil O. Rankin's *Psychological Research: Methods for Discovery and Validation* (McGraw-Hill, 1988) and Rick H. Hoyle, Monica J. Harris, and Charles M. Judd's *Research Methods in Social Relations* (Wadsworth, 2002). Surprisingly, most introductory research

methods texts in psychology still pay scant (if any) attention to effect size estimation, the actual assessment of statistical power, and other basic issues emphasized by the APA Task Force on Statistical Inference.

All stylistic requirements in the APA manual can be easily accomplished with any word-processing program. This book was composed on Windows 98 and Microsoft Word 2000, but one of us prefers Mac OS and Appleworks. The APA has a software product called *APA-Style Helper 3.0*, which is compatible with Microsoft Word or WordPerfect, using Windows or Mac OS. In our recent experience, however, we found *APA-Style Helper 3* more cumbersome to use than a general word-processing program. The world that most college students enter after they graduate is rarely ruled by strict APA style guidelines. For experienced writers, who are likely to submit their work to a wide variety of journals, we recommend *EndNote,* a software program that can be used with Microsoft Word or WordPerfect to instantaneously format references in any standardized style (including the APA style).

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We thank two outstanding psychology teachers, Anne A. Skleder (Alvernia College) and Bruce Rind (Temple University), for early versions of the sample papers, which we have reworked in different editions of *Writing Papers*. We thank MaryLu Rosenthal for advising us through the previous editions about the methods and means available for a literature search in a modern college library. We thank Linda Beebe and Carolyn Gosling of the American Psychological Association for information enabling us to update our discussion of PsycINFO. We thank Eric K. Foster for allowing us to look over his shoulder in Chapter Two. We benefited from reference resources at Temple University's Paley Library, particularly the superb Web site for psychology students that was created by Richard Lezenby. We are grateful to Vicki Knight of Wadsworth Press for her continued interest and enthusiasm, to Ken King for encouraging us to get started on this book many years ago, and to James Brace-Thompson for his support of previous editions. Once again, we thank Margaret Ritchie for her skillful editing.

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Ralph and Mimi Rosnow

Contents

Exhibits

1

GETTING STARTED

Writing papers to fulfill course requirements means knowing what the instructor expects and then formulating a plan to accomplish your goal on schedule. This chapter includes some simple dos and don'ts to help you avoid pitfalls and to ensure that the assignment will be completed on time and that it will represent your best work.

Where to Begin

There was once an intriguing character named Joe Gould, who, after graduating from Harvard in 1911 and trying his hand at a number of futile endeavors, moved to New York and began to hang around Greenwich Village coffee shops. He told people that he had mastered the language of seagulls, and in fact, he did an uncanny imitation of one. He was best known, however, for an ambitious project he claimed to be compiling, called the "Oral History of Our Times." He boasted of having accumulated a stack of notebooks that stood 7 feet tall, and he carried brown paper bags with him that, he said, contained research notes.

Joe Gould died in a psychiatric hospital while doing his seagull imitation. Some years later, in a profile article written by Joseph Mitchell for the *New Yorker* magazine, it was revealed that Joe Gould never started his "Oral History," his notebooks were a myth, and his brown bags merely contained other bags and yellowed newspaper clippings. For students with required writing assignments, Joe Gould is a metaphor for the most challenging aspect of any project: how to get started.

To begin your project, you need some clear objectives. Here is a checklist of questions to focus your approach:

- What is the purpose of the required assignment?
- Do I choose the theme or topic, or will it be assigned by the instructor?

- How long should the paper be?
- Will interim papers (for example, a proposal and progress reports) be required, and when are they due?
- When is the final report due, and how does this date mesh with my other assignments (for example, exams and other papers)?

You can talk with other students about their impressions, but the person who knows *exactly* what is expected of you is the instructor. Before you turn on a word processor or sharpen any pencils, meet with the instructor, articulate what you understand the assignment to be, and ask if your understanding is accurate. One instructor wrote to us that many of his students were reluctant to take this initial step, even though they hadn't a clue about a topic for an assigned paper. But those who did come in, even without an idea for a topic, benefited from a meeting and, in most cases, went away with at least the beginning of a direction for their papers.

Focusing on Your Objective

Once you have a topic, thinking through the assignment will sharpen your intellectual process. To help you focus on your particular objective, it is well to understand the differences between the essay and the research report and the different varieties of each of these forms. We suggest you pause at this point and read the sample essay (Appendix A) and the sample research report (Appendix B) at the end of this book, as we will be referring to them repeatedly. If you are writing a senior thesis or a master's thesis, your paper will probably contain features of essays *and* research reports. Let us start with the general differences between the essay and the research report (see Exhibit 1), so you can concentrate your efforts on whichever project you have been assigned.

One distinction highlighted in Exhibit 1 is that a literature search usually forms the core of the essay, whereas empirical data form the core of the research report. The literature search for the research report typically involves a few key studies that serve as theoretical starting points, so you can expect to

EXHIBIT 1 Differences between essays and research reports

Essay	*Research Report*
1. Is based on literature search; no hard data of your own to interpret	1. Is based on data that you have collected; literature search involving only a few key studies
2. Is structured by you to fit your particular topic	2. Is structured to follow a traditional form
3. Puts ideas into the context of a particular thesis	3. Reports your own research findings to others