



# BEGINNING BEHAVIORAL RESEARCH

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*A Conceptual Primer*

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Ralph L. Rosnow  
Robert Rosenthal

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Ralph L. Rosnow

*Temple University*

Robert Rosenthal

*Harvard University*

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# Preface

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*Beginning Behavioral Research* is intended for undergraduate students who, as part of a beginning course in research methods, are required to plan an empirical study, analyze the data, and report the results. It is also designed to encourage students to be analytical and critical in interpreting research findings not only in this course but also in their everyday lives.

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## Organization

We lead the reader step by step through the following process:

1. Developing a feasible hypothesis (Part I)  
The continuity of scientific research (Chapter 1); coming up with a sound, testable idea (Chapter 2); weighing and balancing the ethical imperatives of science and society (Chapter 3)
2. Focusing on a method of observation and measurement (Part II)  
The use of observational procedures (Chapter 4); the use of self-report procedures (Chapter 5); considerations of reliability and validity (Chapter 6)
3. Designing and implementing the study (Part III)  
Designing an experiment while mindful of potential artifacts (Chapter 7); the role of quasi-experimental alternatives (Chapter 8); obtaining the research participants with an eye to external validity (Chapter 9)

4. Describing the results quantitatively (Part IV)  
Cultivating an overall sense of the data (Chapter 10); looking for statistical relationships (Chapter 11); understanding the role of significance testing, the effect size, and statistical power analysis (Chapter 12)
5. Performing an inferential analysis (Part V)  
Using  $t$  to compare two groups (Chapter 13); using  $F$  to compare two or more groups in one-dimensional and factorial designs (Chapter 14); using chi-square to analyze tables of counts (Chapter 15)
6. Writing up the project (Appendix A)

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## Our Approach

In our long experience of teaching research methods (about 50 years between the two of us), we have noted the questions and uncertainties of students engaged in empirical research for the first time. Most have not planned to pursue a career in research, but all of them have recognized the vitality and ubiquitousness of research in their daily lives. So we have tried to anticipate and confront their questions and uncertainties from their perspective not as potential professional producers of research, but as consumers of scientific results. It is essential for educated consumers to understand the utility and limitations of empirical research as well as the fundamental differences between scientific and pseudoscientific claims of truth. Our aim in chronicling a wide range of both older and newer research studies is to show the continuity and stability of science. Once students have mastered this material, they should be able to understand more deeply what scientists mean when they proclaim that they have found something or not found something to be true.

Instructors who know our earlier work will recognize that this book—as well as our advanced text, *Essentials of Behavioral Research: Methods and Data Analysis* (Rosenthal & Rosnow, 1991)—grew from a 117-page paperback book that we wrote nearly two decades ago, *Primer of Methods for the Behavioral Sciences* (Rosenthal & Rosnow, 1975a). Over the course of the intervening period, we have had an opportunity to develop and refine that material while teaching several thousand undergraduate students at Temple University and Harvard University. Most have been psychology majors required to take a research methods course as part of their concentration, but some have been in fields as diverse as communications, mathematics, business, education, sociology, marketing, and even English and physical education. Whether they took this course as part of their major or as an elective, many dreaded the thought of having to wrestle with statistics. On the assumption that few readers have total recall of statistics or will come away from such a course with an intuitive understanding of what was taught, we describe the basics of data analysis procedures, purposely avoiding the use of any complex mathematics.

Most students with no college training in statistics will find that they can also master basic computational skills by reading the chapters and repeating the exercises in the order in which they are presented. In this age of the computer, the speediest method of doing complex calculations is with the aid of a statistical package. However, we treat statistics (in Chapters 10–15 and Appendix C) by showing, through intuitive reasoning and simple examples, how to do basic computations on a pocket calculator that costs about the same as a pair of movie tickets. In other words, we show students how to use calculators to compute measures of location and spread, effect sizes, measures of simple relationships, the comparison of means, and so on. Instructors who plan to teach students to perform their main calculations on a computer will find that our emphasis on the concrete and arithmetical aspects of data analysis will also complement any computer package they may choose.

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## Special Features

In an effort to make this book more palatable to students, we have incorporated a number of pedagogical devices. Each chapter begins with a set of *preview questions*, which readers can refer to as they progress. Boxed discussions also highlight concepts with practical examples and illustrations. The chapter concludes with a *summary* of the main ideas, followed by a list of key terms pegged to particular pages, and finally a number of *review questions* to stimulate thought and discussion. A *glossary* at the end of the book defines key terms. Appendix A, on writing the research project, contains an annotated sample manuscript. And finally, Appendix C is an optional discussion of meta-analysis, an approach that many students will encounter even in a cursory glance at the journal literature.

Instructors will note that for tables, reference citations, nonsexist language, and certain other practical considerations, Appendix A follows the style prescribed by the American Psychological Association (APA; 1983). In some cases, however, we have departed from APA style. For example, we recommend that the introductory section be specifically labeled, because we wish to provide a structure and a constant reminder to students of the focus of this section. Another departure is to omit notes to the copy editor and compositor that APA style demands (“Insert Table 1 about here,” “Running head: . . .,” etc.); such notes are meaningful to authors who are writing for publication but are perceived by students as superfluous and distracting. One final departure from APA style is the addition of an appendix in which students can report raw data, the statistical calculations performed on results, and any questionnaires they have developed for their projects. The general format of the sample paper in Appendix A is based on the second edition of Ralph and Mimi Rosnow’s *Writing Papers in Psychology: A Student Guide* (1992), which has also been previously tested on a large number of students.

Instructors familiar with *Essentials of Behavioral Research* will recognize that *Beginning Behavioral Research* can be used for students up to, but just below, the

level of *Essentials*, and that the systematic treatment of methods and data analysis is similar in both texts. For example, we emphasize the utility of the Pearson  $r$  as an effect size measure that can be conveniently translated into an index of practical significance. We also introduce students to statistical power analysis in a way that they should be able to apply in their individual studies. The chapter on ethics is intended to raise questions that project well beyond this book. Students interested in advanced or more detailed analyses of the topics treated here will find such discussions in *Essentials*. In both texts, we have sought to communicate the richness, diversity, and excitement—as well as the basic or advanced technical aspects—of human subjects research that we ourselves find so challenging and stimulating.

We thank Stephen J. Kraus for preparing the *Instructor's Manual* that accompanies this text. We thank Robert E. Lana for permission to borrow a number of ideas and research illustrations from *Introduction to Contemporary Psychology* (Lana & Rosnow, 1972). We thank Bruce Rind for giving us permission to include an edited version of his work in Appendix A. We thank a long line of teaching assistants and students at Temple University and Harvard University for their valuable comments on and criticisms of the lectures, handouts, and drafts on which this book was based. We thank Arleen Dowd for assistance in producing the final manuscript, and we thank the following Macmillan consultants for their constructive feedback on an earlier draft: Bernard C. Beins, Ithaca College; Patricia R. DeLucia, Texas Tech University; Paul W. Foos, University of North Carolina at Charlotte; Allan J. Kimmel, Fitchburg State College; John W. Webster, Towson State University; Paul J. Wellman, Texas A & M University; and Jon L. Williams, Kenyon College. Ralph Rosnow thanks Temple University for support received through the Bolton Professorship; Robert Rosenthal thanks Harvard University for its continuing support. We both thank Mimi Rosnow and Mary Lu Rosenthal for counseling us in ways too numerous to mention. We thank Christine Cardone for her unflagging enthusiasm and support, and we thank Margaret Ritchie for the most creative, elegant, and helpful copyediting we have ever seen.

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This is our ninth book together, and the beat goes on.

Ralph L. Rosnow  
Robert Rosenthal



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