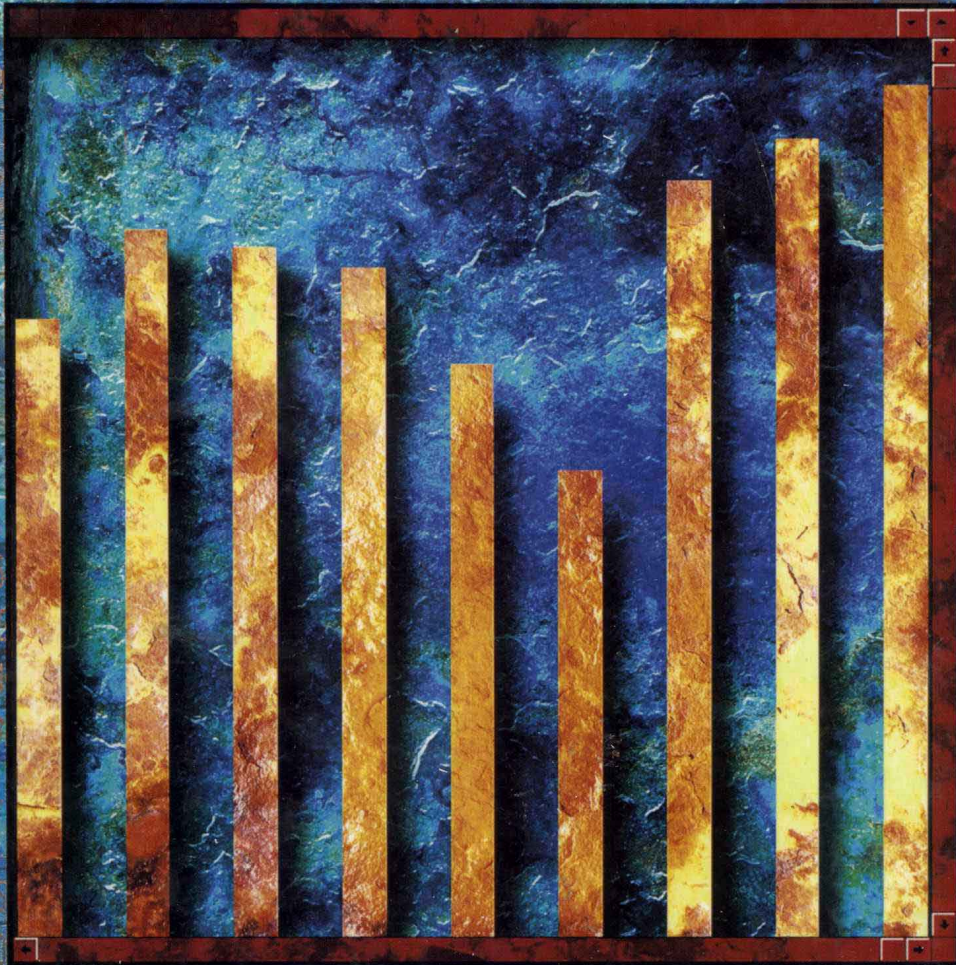


Research Methods in Psychology

FOURTH EDITION



John J. Shaughnessy Eugene B. Zechmeister

Fourth Edition

Research Methods in Psychology

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RESEARCH METHODS IN PSYCHOLOGY

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Preface

We have written a broad-based introduction to research methods in psychology that emphasizes a multimethod approach to hypothesis testing. Various methodological approaches in psychology (e.g., naturalistic observation, survey research, and experimentation) are viewed as complementary. We hope students will recognize that all methodologies have limitations as well as strengths. *Because of this, we will reach our goal of understanding behavior and mental processes only when we combine evidence gathered using many different approaches.*

We continue in this edition to draw from the rich world of psychological research for our examples. Students will find that we introduce a wide array of contemporary research issues while discussing research methods. Among the many topics highlighted are social loafing, people's perception of pain, relationship between temperature and aggression, cognitive theories of depression, racial interactions, discrimination in the workplace, and behavioral treatments of maladaptive behavior. As they progress in their understanding of psychological research methods, students will find that they have learned much about psychology in general. Of course, we also hope that by using a variety of research examples we have made this task of learning about psychological research an interesting one.

Students will find the necessary background to help them do research as part of their undergraduate or postgraduate careers. Nevertheless, many students who study research methodology will only be research consumers rather than research producers. With this in mind, we have attempted to help all stu-

dents become discerning research consumers by developing their critical thinking skills. We emphasize that research is a form of problem solving that begins with the selection of an appropriate method to answer a research question, and continues through the process of critically analyzing the strengths and weaknesses of the evidence obtained. We include Challenge Questions at the end of each chapter to permit students to test their critical thinking skills. Many of these questions are based on reports of research found in popular news outlets. We urge instructors to provide students with additional opportunities to develop their analytical abilities by encouraging them to examine critically other reports of psychology-related research findings that appear in newspapers and other media.

As experienced instructors of research methods, we are aware that many students approach a research methods course with apprehension. Their concern sometimes arises from anxiety about the perceived difficulty of the material. To address this concern we have tried in this edition to increase the clarity of our presentation to help students more easily gain the knowledge they need. At times, though, students' concerns arise because they fail to see a relationship between their interests in studying and applying psychology and the requirement to study research methods. A familiar lament is, "I did not become a psychology major because I wanted to do research!" We continue to work in this edition to find ways to show the skeptical student that psychology, in all its manifestations, has a scientific foundation.

CHANGES IN THE FOURTH EDITION

Previous users of this book will find that the major organization of earlier editions is still present. However, we also have made some changes based on suggestions of those who have used or reviewed the previous edition. We highlight these changes roughly in the order that they appear in the text.

We have made a significant change in nomenclature. The fourth edition of the *APA Publication Manual* (1994) recommends that the term *subjects* be changed to a more descriptive term, such as students, children, or older adults, or to participants if no more specific term is appropriate. We also decided to replace the term *subject variable* (see Chapter 1) by identifying this type of variable as an *individual differences variable* or, sometimes, a *natural groups variable*. We have continued to use the term *subjects* when referring to animals in research or to terms in generic statistical analyses (e.g., the *subjects* term in analyses of variance). We also made a change in the term we use for the designs discussed in Chapter 7. We now refer to them as Repeated Measures designs, because we think this term is stylistically preferable and because it is consistent with the terminology in many statistics books.

To make Chapter 1 more manageable for both the instructor and the student, we reduced the number of new concepts introduced in Chapter 1. We moved

much of the discussion of correlation to Chapter 4 (Correlational Research: Surveys), and we moved some of the discussion of control techniques to Chapter 6 (Independent Groups Designs). Even with these changes, we still view Chapter 1 as the first of many lessons students will have emphasizing the vocabulary of the research enterprise. Students need to become familiar with the concepts introduced in Chapter 1; this familiarity will enable them to appreciate the concepts more fully as they progress through the course.

We continue in this edition to treat ethical issues early in the book, in Chapter 2. Although instructors will find that they can introduce this material in Chapter 2 at any point in the course without too much difficulty, we want to point out another change in this edition. We have attempted to distribute the discussion of ethical issues more evenly throughout the book by discussing them in the context of particular methodologies. Deception, for example, is covered at length in Chapter 2, but is also raised as an issue when a study using deception is discussed in Chapter 6. Also new to this edition is a series of "What Do You Think?" sections in Chapter 2. In these sections we ask students (and instructors) to respond to difficult ethical research dilemmas (e.g., the use of animals in psychological research). We hope these changes better inform students about the important role ethics plays in psychological research.

One major change reflects our continuing journey to find the best way to help integrate research designs and statistics. In the third edition we tried to concentrate material on statistics in a single chapter, Analysis of Experiments. Many users of the third edition pointed out problems with this approach. Thus, having been detoured, we return in this edition to an approach resembling the one we used in the first two editions. Material on statistical analysis is presented in sections of the chapters in which the corresponding research designs are covered. We also discuss effect sizes, as we did in the third edition, as well as alternatives to traditional hypothesis testing techniques, such as the use of confidence intervals. We have retained a statistics appendix (Appendix A), but in this edition the emphasis is on interpretation of output from statistical software packages.

Finally, we have changed the title of what we had called the "writing appendix." Appendix C is now titled Communication in Psychology. Given the explosion in electronic communication, it seemed appropriate to broaden our presentation in this section to include use of the Internet. We have illustrated for students some of the many ways in which scientists are making use of electronic communication (e.g., e-mail) as a research tool. We have retained our presentation of guidelines for effective writing and a sample manuscript in APA format. The material on writing is based on the most recent edition of the *APA Publication Manual*. We also changed the way the comments on the APA-style sample paper are presented. We replaced the previous edition's typed notes in the paper's margins with handwritten notes on the paper itself. Our hope is that students will be more likely to make use of the information in this format.

By the way, because the authors, too, have found the electronic highway an indispensable route to take, we both have e-mail addresses to which comments may be sent:

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Or, if you wish, we may be contacted through the World Wide Web page that is associated with this book: http://www.luc.edu/depts/psychology/research_methods.html. We urge both instructors and students to visit the page, because it contains not only information about the book and supplementary material but also links with the American Psychological Association and American Psychological Society, as well as information and suggestions for using the World Wide Web for psychological research. Whatever means you choose to use, we do welcome comments about the book, including suggestions for future editions.

We believe that the present edition retains a structure that permits instructors considerable flexibility in the organization of their courses. Even the authors do not always require students to read every chapter in a particular semester. We sometimes make changes, for example, depending on the nature of the research project assigned for a given class. Nevertheless, we consider Chapters 1, 3, 6, 7, 8, and 10 to be an essential core for most research methods courses. The remaining chapters and appendixes can be used to expand on this core material according to the instructor's preferences.

WORDS OF THANKS

We would like to thank the following reviewers for their many helpful comments and suggestions. If we didn't make every change suggested, be assured that we gave every suggestion serious consideration. This most recent edition benefited greatly from the reviews of the previous edition provided by: Bernard Beins, Ithaca College; Dennis Cogan, Texas Tech University; Steven L. Cohen, Bloomsburg University of Pennsylvania; Wendy Domjan, University of Texas at Austin; Dana S. Dunn, Moravian College; Rosemary T. Hornak, Meredith College; John C. Jahnke, Miami University of Ohio; Rosanne Lorden, Eastern Kentucky University; Catherine S. Murray, St. Joseph's University; and Jeanne Zechmeister, Loyola University.

As usual, we didn't do this alone. Many people contributed in significant ways to the preparation of this edition, some more than they will ever know. Unfortunately, space doesn't permit us to name them all. We do wish, however, to highlight the contributions made by Kathy Adamski, Mark Cook, and Paula Shaughnessy, especially, but not solely, for their help with Appendix C. As she has done with previous editions, Liz Zechmeister did a great job preparing the indexes. With this edition she also took over the time-intensive job of securing permissions for authors' works. Of special importance were the contributions of Jeanne S. Zechmeister, who brought particular expertise, patience, insight,

and wonderful writing skills to this project. Jeanne was reviewer, sounding board, and steadfast supporter throughout this edition's preparation, but, most importantly to EBZ, his "bestest friend."

We also want to acknowledge the much appreciated support of colleagues in our respective psychology departments. Staff members at both Hope College and Loyola University of Chicago also played a critical role in this edition, as they have in previous editions. Many individuals associated with McGraw-Hill, Inc. made this book happen. We'd like to single out Jane Vaicunas for her continued support of this project, Brian McKean for his supervisory skills, Susan Elia and Peggy Rehberger for coordinating so much that needed coordinating, and Anne Manning for finding some great photos. Peg Markow of Ruttle, Shaw & Wetherill, Inc., oversaw production and kept us on schedule. Finally, Fran Hughes provided us with beautiful drawings to help humanize our presentation of research methods.

John J. Shaughnessy
Eugene B. Zechmeister

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