

Fundamentals of Behavioral Research

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Brief Contents

Chapter 1	Overview of Behavioral Research
Chapter 2	Ethical Principles of Research
Chapter 3	Fundamentals of the Scientific Approach
Chapter 4	Developing Research Questions: Hypotheses and Variables
Chapter 5	Measurement
Chapter 6	Methods of Data Collection
Chapter 7	Sampling Techniques
Chapter 8	Sources of Extraneous Variability
Chapter 9	Using Experimental Control to Reduce Extraneous Variability
Chapter 10	Experimental Design: Statistical Analysis of Data
Chapter 11	Experimental Design: One-Way Independent Samples Design
Chapter 12	Experimental Design: One-Way Correlated Samples Design
Chapter 13	Experimental Design: Multiple Independent Variables
Chapter 14	Experimental Design: Single-Subject Designs and Time Series Designs
Chapter 15	Nonexperimental Designs: Correlational Design, Ex Post Facto Design, Naturalistic Observation, and Qualitative Research
Chapter 16	Fundamentals of Disseminating Research
Chapter 17	Summary of Behavioral Research

Contents

Chapter 1. Overview of Behavioral Research

The Excitement of Behavioral Research

Purpose

Skills as a researcher

Skills as a consumer of research

Science

Research

Types of questions

Ways of answering questions

Ways of reporting answers

Summary

Chapter 2. Ethical Principles of Research

Historical Samples of Research with Ethical Concerns

Tuskegee syphilis study

The Milgram and Zimbardo studies

Research with Human Participants: Ethical Guidelines

Ethical principles and code of conduct

Informed consent - the right to know

On the use of deception

Field research and ethics

Regulation of human research

Research with Children and Mentally Challenged: Ethical Guidelines

Research with Nonhumans: Ethical Guidelines

Professional Behavior of the Investigator

Testing participants

Integrity of the data

Plagiarism and publication

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Web Resources to Increase Learning

Chapter 3. Fundamentals of the Scientific Approach

Approaches to Knowing

Authority

Personal experience

Rationalism

Empiricism

Defining Science

Goals of science

Assumptions of science

The scientific method

Distinguishing observation from inference

Systematic nature of science

Inductive and deductive research strategies
Summary of the scientific method
Comparisons of science and non-science
Common sense and science
Molecular to molar levels of analysis and explanation
Importance of Basic Research
A defense of basic research
Two important reasons for supporting basic research
Science and Technology
Science and Public Policy
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Web Resources to Increase Learning

Chapter 4. Developing Research Questions: Hypotheses and Variables

Common Sources of Research Questions
Professors
Textbooks
Databases
Internet
Selecting a research problem
Formulating Hypotheses
Characteristics of good hypotheses
Variables of Interest
Independent variable
Dependent variable
Selecting Levels of an Independent Variable
Selecting a Dependent Variable
Characteristics of a good dependent variable
Multiple dependent variables
Response classes of dependent variables
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Web Resources to Increase Learning

Chapter 5. Measurement

Operational Definitions
Numbers and Precision
Scales of Measurement
Nominal scale
Ordinal scale
Interval scale
Ratio scale
Validity of Measurement

Content validity
Face validity
Concurrent validity
Predictive validity
Construct validity
Reliability of Measurement
Test-retest reliability
Alternate form reliability
Split-half reliability
Factors that affect reliability
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Web Resources to Increase Learning

Chapter 6. Methods of Data Collection

Introduction to Methods of Data Collection
The Nature of Observations
Ways of Observing
Participant vs nonparticipant observations
Scheduling observations
Defining the behavior to be observed
Specific techniques for recording the behavior
Recording more than one response
Reliability of Observations
Inter-observer agreement
Measuring the reliability of observational data
Recordings by Equipment
Public Records
Survey Methods
Questionnaires
Instruments / Inventories
Interviews
Laboratory vs. Field Research
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Laboratory Exercises
Web Resources to Increase Learning

Chapter 7. Sampling Techniques

Introduction to Sampling
Distinguishing between a sample and a population
Simple Random Sampling
Step 1: simple random sampling – defining the population
Step 2: simple random sampling – constructing a list

Step 3: simple random sampling – drawing the sample

Step 4: simple random sampling – contacting members of the sample

Stratified Random Sampling

Convenience Sampling

Convenience sampling and the introductory psychology participant pool

Quota Sampling

Sample Size

Variability and Sample Size

Sampling Error

Evaluating Information from Samples

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Web Resources to Increase Learning

Chapter 8. Sources of Extraneous Variability

Understanding Variability

Systematic variance

Systematic error (confounding)

Random error

Sources of Extraneous Variability

Participants as a source of extraneous variability

Experimenter as a source of extraneous variability

Method as a source of extraneous variability

Validity of the Research Design

Internal validity

External validity

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Web Resources to Increase Learning

Chapter 9. Using Experimental Control to Reduce Extraneous Variability

Introduction to Experimental Control

Characteristics of a True Experiment

Advantages

Limitations

The Notion of Experimental Control

Control through Sampling

Control through Assignment to Conditions

Independent samples design

Correlated samples design

Control through Experiment Setting

Control through Experiment Consent and Instructions

Control through Experimenter Interactions

Control through Observation and Measurement

Control through Use of Control Groups / Research Design

Primitive research designs

Importance of control groups

Designs with control groups

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Web Resources to Increase Learning

Chapter 10. Experimental Design: Statistical Analysis of Data

Purpose of Statistical Analysis

Descriptive Statistics

Central tendency and variability

Measures of central tendency

Measures of variability

The importance of variability

Tables and graphs

Inferential Statistics

From descriptions to inferences

The role of probability theory

The null and alternative hypothesis

The sampling distribution and statistical decision making

Type I errors, Type II errors, and statistical power

Effect size

Meta-analysis

Parametric versus nonparametric analyses

Selecting the appropriate analysis: using a decision tree

Using Statistical Software

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Web Resources to Increase Learning

Chapter 11. Experimental Design: One-way Independent Samples Design

Advantages and Limitations

Comparing Two Groups

Comparing t-test to ANOVA

Independent samples t-test

Independent samples ANOVA

Comparing More Than Two Groups

Quasi-experiments

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Laboratory Exercises
Web Resources to Increase Learning

Chapter 12. Experimental Design: One-way Correlated Samples Design

Advantages and Limitations

Natural pairs

Matched pairs

Repeated measures

Comparing Two Groups

Comparing t-test to ANOVA

Correlated samples t-test

Correlated samples ANOVA

Comparing More Than Two Groups

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Laboratory Exercises

Web Resources to Increase Learning

Chapter 13. Experimental Design: Multiple Independent Variables

Characteristics of Factorial Designs

Possible Outcomes of a 2 X 2 Factorial Experiment

Different Types of Factorial Designs

Completely randomized design

Repeated measures design

Mixed design

Interpreting Main Effects and Interactions

More Complex Factorial Designs

Case Analysis

General Summary

Detailed Summary

Key Terms

Review Questions/Exercises

Laboratory Exercises

Web Resources to Increase Learning

Chapter 14. Experimental Designs: Single-Subject Designs and Time-Series Designs

Introduction to Single-Subject Designs

Advantages and Limitations

Advantages of the single-subject approach

Limitations of the single-subject approach

Why Some Researchers Use the Single-Subject Method

Procedures for the Single-Subject Design

Establishing a baseline

Analysis of treatment effects

Intra-participant replication

Inter-participant replication

Reversible and irreversible behavior
Multiple baseline procedures
Time-series designs
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Web Resources to Increase Learning

Chapter 15. Nonexperimental Research Designs: Correlational Design, Ex Post Facto Design, Naturalistic Observation, and Qualitative Research

Introduction to Nonexperimental Designs
Correlational Design
Importance of correlational research
Direction of control and third variable problems
Addressing directionality and third variable problems
Correlational ruling out factors
Interpretation of correlational data
Ex Post Facto Design
Naturalistic Observation
Qualitative Research
Case study
Phenomenology
Ethnography
Case Analysis
General Summary
Detailed Summary
Key Terms
Review Questions/Exercises
Laboratory Exercises
Web Resources to Increase Learning

Chapter 16. Fundamentals of Disseminating Research

Introduction
Writing a Research Report
Overview
Original sources
Sections of a research report
Arrangement of the manuscript
Headings
Writing style
Writing the manuscript
Making an Oral Presentation
Purpose of an oral presentation
Sections of the presentation
Working from notes
Visual aids
Speaking tips
Making a Poster Presentation

Purpose of poster sessions
Sections of the poster
Layout of the poster
Researcher's role during the session

Case Analysis
General Summary
Detailed Summary
Key Terms
Web Resources to Increase Learning

Chapter 17. Summary of Behavioral Research

The Research Enterprise
Your Skills as a Researcher
Your Skills as a Critical Consumer of Research and Research-related Information
A Final Word

Preface

Welcome to the world of behavioral research. We have tried to provide you with a textbook that is clearly written, logically organized, engaging, and designed with a variety of features to enhance your learning.

Organization

The first chapter in the book is designed to provide you with the big picture of behavioral research. It begins with a description of an event experienced by one of your authors (Lammers) that conveys the excitement of doing research. Next, we discuss the skills to be learned in the book. These include the actual skills associated with doing behavioral research as well as the skills of being a critical consumer of research-related information in the media. Following this, we discuss what it means for the field of psychology to be a science. Finally, Chapter 1 provides a broad overview of the research process, including types of research questions, ways of answering those questions, and ways of making the answers public.

The second chapter is devoted to ethical considerations. This decision was carefully considered and deliberately made. It is an affirmation that, although science is dedicated to advancing knowledge, its primary mission is to serve humanity. You should be aware that ethical concerns are not tangential matters that are given consideration only after “more important” aspects of research design have been resolved. Rather, we are asserting the primacy of ethical concerns. They are as much a part of designing research as the selection of the variables and measures to be used. To this end, we begin the book with ethical issues involving both human (adults, children) and nonhuman participants. In addition, we discuss the controversial issues involving the use of deception. While information on these ethical issues is important for all students taking research courses, it is especially so for those who undertake individual research projects and for those assisting faculty in their professional research efforts.

We also give prominence to ethical issues for another reason. There are many that have expressed strong reservations about research done on living organisms. These reservations are based on what is

perceived as past and present insensitivities on the part of researchers regarding the welfare of their participants. There are, unfortunately, examples of insensitivities that can be pointed to using both human and nonhuman participants. These occurrences have led to the formation of lobby organizations seeking legislation that places constraints on research beyond the ethical guidelines imposed by professional and governmental agencies. We feel that additional constraints are unnecessary and that full awareness along with strict adherence to current ethical guidelines will lessen future problems considerably. Addressing ethical issues at the beginning of the book is one way of giving prominence to ethical concerns and indicating to others that behavioral scientists are not only fully committed to these concerns in their research but that they are also fully committed to teaching them.

Following a discussion of ethical considerations, Chapter 3 introduces the fundamentals of the scientific approach and clearly differentiates this approach from other ways that we acquire information about our world. Then, in Chapter 4, we explore the development of research questions, including the formulation of testable hypotheses and the identification of the critical variables in an experiment. Chapters 5 and 6 focus on the measurement of these variables and methods of observation. These issues are particularly interesting for the field of psychology because we often deal with important concepts like attitudes, emotions, and cognitions. While certainly being important, these concepts are also challenging to define and measure. Chapter 7 describes the various ways to obtain samples of participants. Chapter 8 discusses the many potential pitfalls that await the researcher and that impair the ability to draw confident conclusions. In Chapter 9 we identify a variety of experimental techniques that can be used to avoid the pitfalls and to increase our confidence that we have truly learned something new from a research study. In Chapter 10 we describe an overview of how data that have been collected can be described and interpreted with a variety of research methods.

After the research question has been formed and we understand the basics of avoiding pitfalls and analyzing data, we then must decide on a particular approach to use in answering the research question. As we will see, there are many different approaches. Therefore, it will be important to understand the advantages and limitations of each. Chapters 11-14 describe variations of true experimental designs.

These experimental designs provide high levels of control by the experimenter and powerful cause/effect conclusions. However, and for a variety of reasons, there are many important research questions that cannot be answered using true experimental designs. Chapter 15 summarizes nonexperimental designs and the types of questions that they are designed to answer. After the study has been carried out and the data interpreted, the findings should be reported to the scientific community. Chapter 16 describes the fundamentals of writing a manuscript for publication, making an oral presentation, and creating a poster presentation. The final chapter (17) summarizes the important points made in preceding chapters and attempts to bring all the parts together into a coherent purpose.

Pedagogical Features

The chapters of the book have a set of common features that are designed to assist you with learning. These include:

- Chapter outlines to provide an overview of the topics. Be sure to review these topics and consider their place in the overall picture of research.
- Key terms that are critical to the understanding of research are bold in the text, listed at the end of each chapter and defined in the glossary at the back of the book.
- Numerous examples used to illustrate concepts. These are drawn from a wide range of areas within the field of psychology.
- A box approximately midway into each chapter entitled *Thinking Critically About Everyday Information* that describes a report in the everyday media and asks you to apply the concepts learned thus far to the report. These are designed to review concepts, apply concepts, and help you to be a better consumer of information.
- Case studies for critical thinking that include a research scenario that requires evaluation using the concepts in the chapter. These research scenarios provide a valuable teaching tool for integration and application of new concepts.

- Two chapter summaries. The General Summary highlights the main points of the chapter and provides a preview of the next chapter. The Detailed Summary provides a more detailed listing of the main ideas of the chapter and serves as a useful study guide.
- A set of review questions and exercises.

Dedication

We dedicate this book to our families, especially to Christina and Rita, and to all of those pursuing the goal of scholarship.

Acknowledgments

We acknowledge that inspiration and portions of text for this book are based on a textbook of the same title published in 1982 by Pietro Badia and Richard P. Runyon.

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