

Contents

Preface xii

About the Authors xix

## **1 SCIENTIFIC UNDERSTANDING OF BEHAVIOR 1**

Importance of Research Methods 2

Ways of Knowing 4

Goals of Behavioral Science 8

Basic and Applied Research 12

Study Terms 18

Review Questions 18

Activities 18

Answers 19

## **2 WHERE TO START 20**

Research Questions, Hypotheses, and Predictions 21

Sources of Ideas 22

Types of Research Reports 28

Exploring Past Research 35

Study Terms 44

Review Questions 44

Answers 44

## **3 ETHICS IN BEHAVIORAL RESEARCH 45**

Milgram's Obedience Experiment 46

Historical Context of Current Ethical Standards 48

APA Ethics Code 49

Assessment of Risks and Benefits 51

Informed Consent 54

The Importance of Debriefing 59

Institutional Review Boards	60
Research with Nonhuman Animal Subjects	62
Being an Ethical Researcher: The Issue of Misrepresentation	64
Conclusion: Risks and Benefits Revisited	68
Study Terms	71
Review Questions	71
Activities	71
Answers	73

#### **4 FUNDAMENTAL RESEARCH ISSUES 74**

Validity: An Introduction	75
Variables	75
Operational Definitions of Variables	76
Relationships Between Variables	78
Nonexperimental Versus Experimental Methods	83
Experimental Methods: Additional Considerations	92
Evaluating Research: Summary of the Three Validities	96
Study Terms	97
Review Questions	98
Activities	98
Answers	100

#### **5 MEASUREMENT CONCEPTS 101**

Reliability of Measures	102
Construct Validity of Measures	107
Reactivity of Measures	110
Variables and Measurement Scales	111
Study Terms	117
Review Questions	117

Activities 117

Answers 118

## **6 OBSERVATIONAL METHODS 119**

Quantitative and Qualitative Approaches 120

Naturalistic Observation 121

Systematic Observation 124

Case Studies 127

Archival Research 128

Study Terms 133

Review Questions 134

Activities 134

Answers 135

## **7 ASKING PEOPLE ABOUT THEMSELVES: SURVEY RESEARCH 136**

Why Conduct Surveys? 137

Constructing Questions to Ask 139

Responses to Questions 143

Finalizing the Survey Instrument 146

Administering Surveys 147

Survey Designs to Study Changes Over Time 150

Sampling From a Population 151

Sampling Techniques 153

Evaluating Samples 156

Reasons for Using Convenience Samples 159

Study Terms 161

Review Questions 162

Activities 162

Answers 163

## **8 EXPERIMENTAL DESIGN 164**

Confounding and Internal Validity 165

Basic Experiments 166

Assigning Participants to Experimental Conditions 171

Study Terms 180

Review Questions 180

Activities 180

Answers 181

## **9 CONDUCTING EXPERIMENTS 182**

Selecting Research Participants 183

Manipulating the Independent Variable 184

Measuring the Dependent Variable 190

Additional Controls 194

Final Planning Considerations 197

Analyzing and Interpreting Results 200

Communicating Research to Others 200

Study Terms 202

Review Questions 202

Activities 203

Answers 204

## **10 COMPLEX EXPERIMENTAL DESIGNS 205**

Increasing the Number of Levels of an Independent Variable 206

Increasing the Number of Independent Variables: Factorial Designs 208

Outcomes of a 2 × 2 Factorial Design 213

Assignment Procedures and Factorial Designs 216

Increasing the Number of Levels of an Independent Variable 218

Factorial Designs with Three or More Independent Variables 219

Study Terms 222

Review Questions 222

Activities 223

Answers 223

## **11 SINGLE-CASE, QUASI-EXPERIMENTAL, AND DEVELOPMENTAL RESEARCH 224**

Single-Case Experimental Designs 225

Quasi-Experimental Designs 229

Developmental Research Designs 238

Study Terms 243

Review Questions 243

Activities 244

## **12 UNDERSTANDING RESEARCH RESULTS: DESCRIPTION AND CORRELATION 246**

Scales of Measurement: A Review 247

Describing Results 248

Frequency Distributions 250

Descriptive Statistics 252

Graphing Relationships 253

Correlation Coefficients: Describing the Strength of Relationships 255

Effect Size 260

Regression Equations 261

Multiple Correlation/Regression 262

The Third-Variable Problem 264

Structural Equation Modeling 265

Study Terms 267

Review Questions 267

Activities 268

Answers 269

## **13 UNDERSTANDING RESEARCH RESULTS: STATISTICAL INFERENCE 270**

Samples and Populations 271

Inferential Statistics 272

Null and Research Hypotheses	272
Probability and Sampling Distributions	273
Group Differences: The t and F Tests	276
Type I and Type II Errors	282
Choosing a Significance Level	285
Interpreting Nonsignificant Results	286
Choosing a Sample Size: Power Analysis	288
The Importance of Replications	289
Significance of a Pearson r Correlation Coefficient	289
Computer Analysis of Data	289
Selecting the Appropriate Statistical Test	290
Study Terms	293
Review Questions	294
Activities	294
Answers	295

#### **14 GENERALIZATION 296**

Generalizing to Other Populations	297
Generalizing Across Methods	303
Supporting Good External Validity	305
The Importance of Replications	306
Evaluating Generalizations via Literature Reviews and Meta-analyses	310
Using Research to Improve Lives	312
Study Terms	313
Review Questions	314
Activities	314

#### **APPENDIX A: REPORTING RESEARCH 315**

Introduction	315
Writing Your Report	316

Formatting Your Report	322
Organization of the Report	324
The Use of Headings	335
Citing and Referencing Sources	336
Abbreviations	345
Reporting Numbers and Statistics	346
Conclusion: Written Reports	348
Paper and Poster Presentations	348
Sample Paper	352

## **APPENDIX B: ETHICAL PRINCIPLES OF PSYCHOLOGISTS**

AND CODE OF CONDUCT	371
Preamble	371
General Principles	372
Standard 8: Research and Publication	374
APPENDIX C: STATISTICAL TESTS	378
Descriptive Statistics	378
Statistical Significance and Effect Size	381
Glossary	399
References	407
Index	419