

Contents

Preface xi

About the Authors xv

1 SCIENTIFIC UNDERSTANDING OF BEHAVIOR 1

Uses of Research Methods 2
The Scientific Approach 3
Goals of Behavioral Science 8
Basic and Applied Research 11
Illustrative Article: Introduction 15
Study Terms 16
Review Questions 16
Activity Questions 17
Answers 17

2 WHERE TO START 18

Hypotheses and Predictions 19
Who We Study: A Note on Terminology 20
Sources of Ideas 20
Library Research 25
Anatomy of a Research Article 35
Study Terms 37
Review Questions 37
Activity Questions 38

3 ETHICAL RESEARCH 39

Milgram's Obedience Experiment 40
The *Belmont Report* 41
Assessment of Risks and Benefits 41
Informed Consent 44

The Importance of Debriefing	48
Alternatives to Deception	49
Justice and the Selection of Participants	51
Researcher Commitments	52
Federal Regulations and the Institutional Review Board	52
APA Ethics Code	55
Research With Human Participants	56
Ethics and Animal Research	58
Risks and Benefits Revisited	60
Misrepresentation: Fraud and Plagiarism	61
Illustrative Article: Ethical Issues	64
<i>Study Terms</i>	65
<i>Review Questions</i>	65
<i>Activity Questions</i>	65
<i>Answers</i>	67

4 FUNDAMENTAL RESEARCH ISSUES 68

Validity: An Introduction	69
Variables	69
Operational Definitions of Variables	70
Relationships Between Variables	72
Nonexperimental Versus Experimental Methods	77
Independent and Dependent Variables	83
Internal Validity: Inferring Causality	85
External Validity	85
Choosing a Method	86
Evaluating Research: Summary of the Three Validities	90
Illustrative Article: Studying Behavior	91
<i>Study Terms</i>	92
<i>Review Questions</i>	92
<i>Activity Questions</i>	93
<i>Answers</i>	94

5 MEASUREMENT CONCEPTS 95

Reliability of Measures	96
Construct Validity of Measures	101
Reactivity of Measures	105

Variables and Measurement Scales	105
Research on Personality and Individual Differences	109
Illustrative Article: Measurement Concepts	110
<i>Study Terms</i>	111
<i>Review Questions</i>	111
<i>Activity Questions</i>	111

6 OBSERVATIONAL METHODS 113

Quantitative and Qualitative Approaches	114
Naturalistic Observation	115
Systematic Observation	118
Case Studies	121
Archival Research	122
Illustrative Article: Observational Methods	124
<i>Study Terms</i>	125
<i>Review Questions</i>	125
<i>Activity Questions</i>	126
<i>Answers</i>	127

7 ASKING PEOPLE ABOUT THEMSELVES: SURVEY RESEARCH 128

Why Conduct Surveys?	129
Constructing Questions to Ask	131
Responses to Questions	134
Finalizing the Questionnaire	138
Administering Surveys	139
Survey Designs to Study Changes Over Time	142
Sampling From a Population	143
Sampling Techniques	145
Evaluating Samples	148
Reasons for Using Convenience Samples	150
Illustrative Article: Survey Research	152
<i>Study Terms</i>	153
<i>Review Questions</i>	154
<i>Activity Questions</i>	154
<i>Answers</i>	155

8 EXPERIMENTAL DESIGN 156

- Confounding and Internal Validity 157
- Basic Experiments 158
- Assigning Participants to Experimental Conditions 163
- Independent Groups Design 163
- Repeated Measures Design 164
- Matched Pairs Design 169
- Illustrative Article: Experimental Design 170
- Study Terms* 171
- Review Questions* 171
- Activity Questions* 172

9 CONDUCTING EXPERIMENTS 173

- Selecting Research Participants 174
- Manipulating the Independent Variable 175
- Measuring the Dependent Variable 181
- Additional Controls 184
- Additional Considerations 188
- Analyzing and Interpreting Results 191
- Communicating Research to Others 191
- Illustrative Article: Conducting Experiments 192
- Study Terms* 193
- Review Questions* 193
- Activity Questions* 194
- Answers* 195

10 COMPLEX EXPERIMENTAL DESIGNS 196

- Increasing the Number of Levels of an Independent Variable 197
- Increasing the Number of Independent Variables: Factorial Designs 199
- Illustrative Article: Complex Experimental Designs 212
- Study Terms* 212
- Review Questions* 213
- Activity Questions* 213
- Answers* 214

11 SINGLE-CASE, QUASI-EXPERIMENTAL, AND DEVELOPMENTAL RESEARCH 215

- Single-Case Experimental Designs 216
- Program Evaluation 220
- Quasi-Experimental Designs 222
- Developmental Research Designs 231
- Illustrative Article: A Quasi-Experiment 235
- Study Terms* 236
- Review Questions* 236
- Activity Questions* 237

12 UNDERSTANDING RESEARCH RESULTS: DESCRIPTION AND CORRELATION 239

- Scales of Measurement: A Review 240
- Analyzing the Results of Research Investigations 241
- Frequency Distributions 243
- Descriptive Statistics 245
- Graphing Relationships 247
- Correlation Coefficients: Describing the Strength of Relationships 248
- Effect Size 252
- Regression Equations 253
- Multiple Correlation/Regression 254
- Partial Correlation and the Third-Variable Problem 256
- Structural Equation Modeling 257
- Study Terms* 259
- Review Questions* 259
- Activity Questions* 260
- Answers* 261

13 UNDERSTANDING RESEARCH RESULTS: STATISTICAL INFERENCE 262

- Samples and Populations 263
- Inferential Statistics 264
- Null and Research Hypotheses 264
- Probability and Sampling Distributions 265
- Example: The t and F Tests 268
- Type I and Type II Errors 274

Choosing a Significance Level	277
Interpreting Nonsignificant Results	278
Choosing a Sample Size: Power Analysis	279
The Importance of Replications	280
Significance of a Pearson r Correlation Coefficient	280
Computer Analysis of Data	281
Selecting the Appropriate Statistical Test	283
<i>Study Terms</i>	284
<i>Review Questions</i>	284
<i>Activity Questions</i>	285

14 GENERALIZING RESULTS 287

Generalizing to Other Populations of Research Participants	288
Cultural Considerations	292
Generalizing to Other Experimenters	294
Pretests and Generalization	294
Generalizing From Laboratory Settings	295
The Importance of Replications	296
Evaluating Generalizations via Literature Reviews and Meta-Analyses	298
Using Research to Improve Lives	300
Illustrative Article: Generalizing Results	301
<i>Study Terms</i>	302
<i>Review Questions</i>	302
<i>Activity Questions</i>	303

APPENDIX A: WRITING RESEARCH REPORTS 304

Introduction	304
Writing Style	305
Organization of the Report	310
The Use of Headings	321
Citing and Referencing Sources	322
Abbreviations	332
Some Grammatical Considerations	333
Reporting Numbers and Statistics	337
Conclusion	338
Paper and Poster Presentations	338
Sample Paper	340