

# Contents

## **PART I. THE BLUEPRINT: PLANNING AND PREPARING A META-ANALYTIC REVIEW**

- 1 • An Introduction to Meta-Analysis** 3
  - 1.1 The Need for Research Synthesis in the Social Sciences 3
  - 1.2 Basic Terminology 4
  - 1.3 A Brief History of Meta-Analysis 8
  - 1.4 The Scientific Process of Research Synthesis 9
  - 1.5 An Overview of the Book 12
  - 1.6 **Practical Matters:** A Note on Software and Information Management 13
  - 1.7 Summary 14
  - 1.8 Recommended Readings 14
  
- 2 • Questions That Can and Questions That Cannot Be Answered through Meta-Analysis** 16
  - 2.1 Identifying Goals and Research Questions for Meta-Analysis 17
  - 2.2 The Limits of Primary Research and the Limits of Meta-Analytic Synthesis 19
  - 2.3 Critiques of Meta-Analysis: When Are They Valid and When Are They Not? 23
  - 2.4 **Practical Matters:** The Reciprocal Relation between Planning and Conducting a Meta-Analysis 29
  - 2.5 Summary 31
  - 2.6 Recommended Readings 32
  
- 3 • Searching the Literature** 34
  - 3.1 Developing and Articulating a Sampling Frame 34
  - 3.2 Inclusion and Exclusion Criteria 38
  - 3.3 Finding Relevant Literature 42
  - 3.4 Reality Checking: Is My Search Adequate? 52
  - 3.5 **Practical Matters:** Beginning a Meta-Analytic Database 55
  - 3.6 Summary 58
  - 3.7 Recommended Readings 58

## **PART II. THE BUILDING BLOCKS: CODING INDIVIDUAL STUDIES**

- |  |            |
|--|------------|
| <b>4 • <u>Coding Study Characteristics</u></b>   | <b>63</b>  |
| 4.1 Identifying Interesting Moderators   | 64         |
| 4.2 Coding Study "Quality"   | 68         |
| 4.3 Evaluating Coding Decisions  | 73         |
| 4.4 <b>Practical Matters:</b> Creating an Organized Protocol<br>for Coding   | 77         |
| 4.5 Summary  | 82         |
| 4.6 Recommended Readings   | 82         |
| <br>   |            |
| <b>5 • <u>Basic Effect Size Computation</u></b>  | <b>85</b>  |
| 5.1 The Common Metrics: Correlation, Standardized Mean Difference,<br>and Odds Ratio                                       | 85         |
| 5.2 Computing $r$ from Commonly Reported Results   | 96         |
| 5.3 Computing $g$ from Commonly Reported Results   | 107        |
| 5.4 Computing $o$ from Commonly Reported Results   | 114        |
| 5.5 Comparisons among $r$ , $g$ , and $o$  | 118        |
| 5.6 <b>Practical Matters:</b> Using Effect Size Calculators<br>and Meta-Analysis Programs                                  | 121        |
| 5.7 Summary  | 122        |
| 5.8 Recommended Readings   | 122        |
| <br>   |            |
| <b>6 • <u>Corrections to Effect Sizes</u></b>  | <b>126</b> |
| 6.1 The Controversy of Correction  | 127        |
| 6.2 Artifact Corrections to Consider   | 129        |
| 6.3 <b>Practical Matters:</b> When (and How) to Correct:<br>Conceptual, Methodological, and Disciplinary<br>Considerations | 142        |
| 6.4 Summary  | 144        |
| 6.5 Recommended Readings   | 144        |
| <br>   |            |
| <b>7 • <u>Advanced and Unique Effect Size Computation</u></b>  | <b>147</b> |
| 7.1 Describing Single Variables  | 147        |
| 7.2 When the Metric Is Meaningful: Raw Difference Scores   | 154        |
| 7.3 Regression Coefficients and Similar Multivariate<br>Effect Sizes   | 156        |
| 7.4 Miscellaneous Effect Sizes   | 161        |
| 7.5 <b>Practical Matters:</b> The Opportunities and Challenges<br>of Meta-Analyzing Unique Effect Sizes                    | 166        |
| 7.6 Summary  | 169        |
| 7.7 Recommended Readings   | 169        |

## **PART III. PUTTING THE PIECES TOGETHER: COMBINING AND COMPARING EFFECT SIZES**

- 8 • Basic Computations: Computing Mean Effect Size and Heterogeneity around This Mean** 175
- 8.1 The Logic of Weighting 176
- 8.2 Measures of Central Tendency in Effect Sizes 180
- 8.3 Inferential Testing and Confidence Intervals of Average Effect Sizes 182
- 8.4 Evaluating Heterogeneity among Effect Sizes 184
- 8.5 **Practical Matters:** Nonindependence among Effect Sizes 191
- 8.6 Summary 195
- 8.7 Recommended Readings 195
- 9 • Explaining Heterogeneity among Effect Sizes: Moderator Analyses** 198
- 9.1 Categorical Moderators 199
- 9.2 Continuous Moderators 207
- 9.3 A General Multiple Regression Framework for Moderation 210
- 9.4 An Alternative SEM Approach 218
- 9.5 **Practical Matters:** The Limits of Interpreting Moderators in Meta-Analysis 222
- 9.6 Summary 226
- 9.7 Recommended Readings 226
- 10 • Fixed-, Random-, and Mixed-Effects Models** 229
- 10.1 Differences among Models 230
- 10.2 Analyses of Random-Effects Models 234
- 10.3 Mixed-Effects Models 239
- 10.4 A Structural Equation Modeling Approach to Random- and Mixed-Effects Models 245
- 10.5 **Practical Matters:** Which Model Should I Use? 250
- 10.6 Summary 255
- 10.7 Recommended Readings 255
- 11 • Publication Bias** 257
- 11.1 The Problem of Publication Bias 257
- 11.2 Managing Publication Bias 260
- 11.3 **Practical Matters:** What Impact Do Sampling Biases Have on Meta-Analytic Conclusions? 275
- 11.4 Summary 276
- 11.5 Recommended Readings 276

<b>12 • Multivariate Meta-Analytic Models</b>	<b>279</b>
12.1 Meta-Analysis to Obtain Sufficient Statistics	280
12.2 Two Approaches to Multivariate Meta-Analysis	286
12.3 <b>Practical Matters:</b> The Interplay between Meta-Analytic Models and Theory	300
12.4 Summary	305
12.5 Recommended Readings	306

**PART IV. THE FINAL PRODUCT:  
REPORTING META-ANALYTIC RESULTS**

<b>13 • Writing Meta-Analytic Results</b>	<b>313</b>
13.1 Dimensions of Literature Reviews, Revisited	313
13.2 What to Report and Where to Report It	317
13.3 Using Tables and Figures in Reporting Meta-Analyses	329
13.4 <b>Practical Matters:</b> Avoiding Common Problems in Reporting Results of Meta-Analyses	337
13.5 Summary	342
13.6 Recommended Readings	342

<b>References</b>	<b>345</b>
<b>Author Index</b>	<b>357</b>
<b>Subject Index</b>	<b>363</b>
<b>About the Author</b>	<b>377</b>