5. **Data Management**
- Creating Meta-Analytic Data Files
- Coding Directly into the Computer
- Using the Computer to Maintain the Bibliography
- Structure of Meta-Analytic Data Files
  - Creating a Single Flat File to Use for Analysis
  - Merging Multiple Files to Use for Analysis

6. **Analysis Issues and Strategies**
- The Stages of Analysis
  - Effect Size Adjustments
  - Analyzing the Effect Size Mean and Distribution
  - Analysis of Heterogeneous Distributions of Effect Size
  - Analysis of Statistically Dependent Effect Sizes
  - Additional Analysis Issues

7. **Computational Techniques for Meta-Analysis Data**
- The Mean, Confidence Interval, and Homogeneity Test
  - Analysis of Heterogeneous Distributions of Effect Size
  - Weighted Regression Analysis
  - Graphing Techniques

8. **Interpreting and Using Meta-Analysis Results**
- Interpreting Effect Size Values
  - Rules of Thumb for Effect Size Magnitude
  - Translation of Effect Sizes to Other Metrics
  - Clinical and Practical Significance
- Caveats in Interpreting Meta-Analysis Results
  - Methodological Adequacy of the Research Base
  - Confounding of Substantive and Methodological Features
  - The Importance of Variance
  - Research Gaps and Generalizability
  - Sampling Bias
  - Implications of Meta-Analysis for Practice and Policy

Appendix A. Computer-Based Bibliographic Services and Examples of Relevant Databases
Appendix B. Procedures for Computing Effect Size Values from Eligible Study Reports

- Standardized Mean Difference Effect Size
  - Direct Calculation of $ES_{sm}$
  - Algebraically Equivalent Formulas for $ES_{sm}$
  - Exact Probability Levels for a $t$-value or $F$-ratio
  - Calculation of Means and Standard Deviations from a Frequency Distribution
  - Approximations Based on Continuous Data—The Point-Biserial Coefficient
  - Estimating $\bar{X}_1 - \bar{X}_2$ and $s_{pooled}$
  - Dichotomized Data
- The Correlation Coefficient Effect Size
  - Definitional Formula for $ES_r$
  - Joint Frequency Distributions for Discrete or Grouped Continuous Data
  - A Dichotomous and a Continuous Measure
  - Two Dichotomous Measures
  - Approximations and Probability Values
- Odds-Ratio Effect Size
  - Calculation Based on Cell Frequencies
  - Calculation Based on Row Proportions
  - Calculation Based on Cell Proportions
  - Imputation of $2 \times 2$ Contingency Table From Correlation and Marginal Proportions
  - Imputation of $2 \times 2$ Contingency Table Based on Chi-Square and Marginal Proportions
  - Imputation of Odds-Ratio from Continuous Data

Appendix C. MS Excel Effect Size Computation Program

Appendix D. SPSS Macros for Meta-Analysis

Appendix E. Coding Manual and Coding Forms for the Example Meta-Analysis of Challenge Programs for Juvenile Delinquents

- Study-Level Coding Manual
  - Sample Descriptors
  - Research Design Descriptors
  - Nature of the Treatment Descriptors