

DISCOVERING STATISTICS USING IBM SPSS STATISTICS

4TH EDITION

ANDY FIELD

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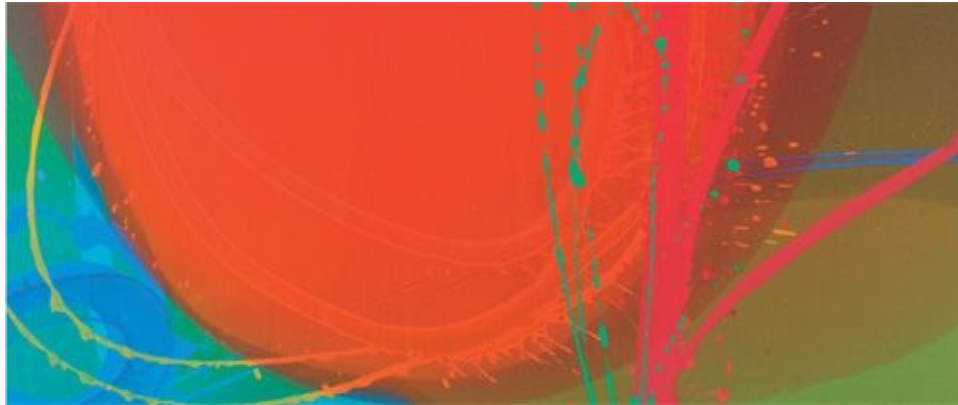
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AND SEX AND DRUGS AND ROCK 'N' ROLL

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CONTENTS

Preface

How to use this book

Acknowledgements

Dedication

Symbols used in this book

Some maths revision

1 Why is my evil lecturer forcing me to learn statistics?

1.1. What will this chapter tell me? ①

1.2. What the hell am I doing here? I don't belong here ①

1.2.1. The research process ①

1.3. Initial observation: finding something that needs explaining ①

1.4. Generating theories and testing them ①

1.5. Collect data to test your theory ①

1.5.1. Variables ①

1.5.2. Measurement error ①

1.5.3. Validity and reliability ①

1.5.4. Correlational research methods ①

1.5.5. Experimental research methods ①

1.5.6. Randomization ①

1.6. Analysing data ①

1.6.1. Frequency distributions ①

1.6.2. The centre of a distribution ①

1.6.3. The dispersion in a distribution ①

1.6.4. Using a frequency distribution to go beyond the data ①

1.6.5. Fitting statistical models to the data ①

1.7. Reporting data ①

1.7.1. Dissemination of research ①

1.7.2. Knowing how to report data ①

1.7.3. Some initial guiding principles ①

1.8. Brian's attempt to woo Jane ①

1.9. What next? ①

1.10. Key terms that I've discovered

1.11. Smart Alex's tasks

1.12. Further reading

2 Everything you never wanted to know about statistics

- 2.1. What will this chapter tell me? ①
- 2.2. Building statistical models ①
- 2.3. Populations and samples ①
- 2.4. Statistical models ①
 - 2.4.1. The mean as a statistical model ①
 - 2.4.2. Assessing the fit of a model: sums of squares and variance revisited ①
 - 2.4.3. Estimating parameters ①
- 2.5. Going beyond the data ①
 - 2.5.1. The standard error ①
 - 2.5.2. Confidence intervals ②
- 2.6. Using statistical models to test research questions ①
 - 2.6.1. Null hypothesis significance testing ①
 - 2.6.2. Problems with NHST ②
- 2.7. Modern approaches to theory testing ②
 - 2.7.1. Effect sizes ②
 - 2.7.2. Meta-analysis ②
- 2.8. Reporting statistical models ②
- 2.9. Brian's attempt to woo Jane ①
- 2.10. What next? ①
- 2.11. Key terms that I've discovered
- 2.12. Smart Alex's tasks
- 2.13. Further reading

3 The IBM SPSS Statistics environment

- 3.1. What will this chapter tell me? ①
- 3.2. Versions of IBM SPSS Statistics ①
- 3.3. Windows versus MacOS ①
- 3.4. Getting started ①
- 3.5. The data editor ①
 - 3.5.1. Entering data into the data editor ①
 - 3.5.2. The variable view ①
 - 3.5.3. Missing values ①
- 3.6. Importing data ①
- 3.7. The SPSS viewer ①
- 3.8. Exporting SPSS output ①
- 3.9. The syntax editor ③
- 3.10. Saving files ①
- 3.11. Retrieving a file ①
- 3.12. Brian's attempt to woo Jane ①
- 3.13. What next? ①
- 3.14. Key terms that I've discovered
- 3.15. Smart Alex's tasks
- 3.16. Further reading

4 Exploring data with graphs

- 4.1. What will this chapter tell me? ①

- 4.2. The art of presenting data ①
 - 4.2.1. What makes a good graph? ①
 - 4.2.2. Lies, damned lies, and ... erm ... graphs ①
- 4.3. The SPSS chart builder ①
- 4.4. Histograms ①
- 4.5. Boxplots (box-whisker diagrams) ①
- 4.6. Graphing means: bar charts and error bars ①
 - 4.6.1. Simple bar charts for independent means ①
 - 4.6.2. Clustered bar charts for independent means ①
 - 4.6.3. Simple bar charts for related means ①
 - 4.6.4. Clustered bar charts for related means ①
 - 4.6.5. Clustered bar charts for 'mixed' designs ①
- 4.7. Line charts ①
- 4.8. Graphing relationships: the scatterplot ①
 - 4.8.1. Simple scatterplot ①
 - 4.8.2. Grouped scatterplot ①
 - 4.8.3. Simple and grouped 3-D scatterplots ①
 - 4.8.4. Matrix scatterplot ①
 - 4.8.5. Simple dot plot or density plot ①
 - 4.8.6. Drop-line graph ①
- 4.9. Editing graphs ①
- 4.10. Brian's attempt to woo Jane ①
- 4.11. What next? ①
- 4.12. Key terms that I've discovered
- 4.13. Smart Alex's tasks
- 4.14. Further reading

5 The beast of bias

- 5.1. What will this chapter tell me? ①
- 5.2. What is bias? ①
 - 5.2.1. Assumptions ①
 - 5.2.2. Outliers ①
 - 5.2.3. Additivity and linearity ①
 - 5.2.4. Normally distributed something or other ①
 - 5.2.5. Homoscedasticity/homogeneity of variance ②
 - 5.2.6. Independence ②
- 5.3. Spotting bias ②
 - 5.3.1. Spotting outliers ②
 - 5.3.2. Spotting normality ①
 - 5.3.3. Spotting linearity and heteroscedasticity/heterogeneity of variance ②
- 5.4. Reducing bias ②
 - 5.4.1. Trimming the data ②
 - 5.4.2. Winsorizing ①
 - 5.4.3. Robust methods ③
 - 5.4.4. Transforming data ②
- 5.5. Brian's attempt to woo Jane ①
- 5.6. What next? ①

5.7. Key terms that I've discovered

5.8. Smart Alex's tasks

5.9. Further reading

6 Non-parametric models

6.1. What will this chapter tell me? ①

6.2. When to use non-parametric tests ①

6.3. General procedure of non-parametric tests in SPSS ①

6.4. Comparing two independent conditions: the Wilcoxon rank-sum test and Mann–Whitney test ①

6.4.1. Theory ②

6.4.2. Inputting data and provisional analysis ①

6.4.3. The Mann–Whitney test using SPSS ①

6.4.4. Output from the Mann–Whitney test ①

6.4.5. Calculating an effect size ②

6.4.6. Writing the results ①

6.5. Comparing two related conditions: the Wilcoxon signed-rank test ①

6.5.1. Theory of the Wilcoxon signed-rank test ②

6.5.2. Running the analysis ①

6.5.3. Output for the ecstasy group ①

6.5.4. Output for the alcohol group ①

6.5.5. Calculating an effect size ②

6.5.6. Writing the results ①

6.6. Differences between several independent groups: the Kruskal–Wallis test ①

6.6.1. Theory of the Kruskal–Wallis test ②

6.6.2. Follow-up analysis ②

6.6.3. Inputting data and provisional analysis ①

6.6.4. Doing the Kruskal–Wallis test in SPSS ①

6.6.5. Output from the Kruskal–Wallis test ①

6.6.6. Testing for trends: the Jonckheere–Terpstra test ②

6.6.7. Calculating an effect size ②

6.6.8. Writing and interpreting the results ①

6.7. Differences between several related groups: Friedman's ANOVA ①

6.7.1. Theory of Friedman's ANOVA ②

6.7.2. Inputting data and provisional analysis ①

6.7.3. Doing Friedman's ANOVA in SPSS ①

6.7.4. Output from Friedman's ANOVA ①

6.7.5. Following-up Friedman's ANOVA ②

6.7.6. Calculating an effect size ②

6.7.7. Writing and interpreting the results ①

6.8. Brian's attempt to woo Jane ①

6.9. What next? ①

6.10. Key terms that I've discovered

6.11. Smart Alex's tasks

6.12. Further reading

7 Correlation

7.1. What will this chapter tell me? ①

- 7.2. Modelling relationships ①
 - 7.2.1. A detour into the murky world of covariance ①
 - 7.2.2. Standardization and the correlation coefficient ①
 - 7.2.3. The significance of the correlation coefficient ③
 - 7.2.4. Confidence intervals for r ③
 - 7.2.5. A word of warning about interpretation: causality ①
- 7.3. Data entry for correlation analysis using SPSS ①
- 7.4. Bivariate correlation ①
 - 7.4.1. General procedure for running correlations in SPSS ①
 - 7.4.2. Pearson's correlation coefficient ①
 - 7.4.3. Spearman's correlation coefficient ①
 - 7.4.4. Kendall's tau (non-parametric) ①
 - 7.4.5. Biserial and point-biserial correlations ③
- 7.5. Partial correlation ②
 - 7.5.1. The theory behind part and partial correlation ③
 - 7.5.2. Partial correlation in SPSS ③
 - 7.5.3. Semi-partial (or part) correlations ②
- 7.6. Comparing correlations ③
 - 7.6.1. Comparing independent r s ③
 - 7.6.2. Comparing dependent r s ③
- 7.7. Calculating the effect size ①
- 7.8. How to report correlation coefficients ①
- 7.9. Brian's attempt to woo Jane ①
- 7.10. What next? ①
- 7.11. Key terms that I've discovered
- 7.12. Smart Alex's tasks
- 7.13. Further reading

8 Regression

- 8.1. What will this chapter tell me? ①
- 8.2. An introduction to regression ①
 - 8.2.1. The simple linear model ①
 - 8.2.2. The linear model with several predictors ②
 - 8.2.3. Estimating the model ②
 - 8.2.4. Assessing the goodness of fit, sums of squares, R and R^2 ①
 - 8.2.5. Assessing individual predictors ①
- 8.3. Bias in regression models? ②
 - 8.3.1. Is the model biased by unusual cases? ②
 - 8.3.2. Generalizing the model ②
 - 8.3.3. Sample size in regression ③
- 8.4. Regression using SPSS: One Predictor ①
 - 8.4.1. Regression: the general procedure ①
 - 8.4.2. Running a simple regression using SPSS ①
 - 8.4.3. Interpreting a simple regression ①
 - 8.4.4. Using the model ①
- 8.5. Multiple regression ②
 - 8.5.1. Methods of regression ②

8.5.2. Comparing models ②

8.5.3. Multicollinearity ②

8.6. Regression with several predictors using SPSS ②

8.6.1. Main options ②

8.6.2. Statistics ②

8.6.3. Regression plots ②

8.6.4. Saving regression diagnostics ②

8.6.5. Further options ②

8.6.6. Robust regression ②

8.7. Interpreting multiple regression ②

8.7.1. Descriptives ②

8.7.2. Summary of model ②

8.7.3. Model parameters ②

8.7.4. Excluded variables ②

8.7.5. Assessing multicollinearity ②

8.7.6. Bias in the model: casewise diagnostics ②

8.7.7. Bias in the model: assumptions ②

8.8. What if I violate an assumption? Robust regression ②

8.9. How to report multiple regression ②

8.10. Brian's attempt to woo Jane ①

8.11. What next? ①

8.12. Key terms that I've discovered

8.13. Smart Alex's tasks

8.14. Further reading

9 Comparing two means

9.1. What will this chapter tell me? ①

9.2. Looking at differences ①

9.2.1. An example: are invisible people mischievous? ①

9.2.2. Categorical predictors in the linear model ①

9.3. The *t*-test ①

9.3.1. Rationale for the *t*-test ①

9.3.2. The independent *t*-test equation explained ①

9.3.3. The paired-samples *t*-test equation explained ①

9.4. Assumptions of the *t*-test ①

9.5. The independent *t*-test using SPSS ①

9.5.1. The general procedure ①

9.5.2. Exploring data and testing assumptions ①

9.5.3. Compute the independent *t*-test ①

9.5.4. Output from the independent *t*-test ①

9.5.5. Calculating the effect size ②

9.5.6. Reporting the independent *t*-test ①

9.6. Paired-samples *t*-test using SPSS ①

9.6.1. Entering data ①

9.6.2. Exploring data and testing assumptions ①

9.6.3. Computing the paired-samples *t*-test ①

9.6.4. Calculating the effect size ①

9.6.5. Reporting the paired-samples t -test ①

9.7. Between groups or repeated measures? ①

9.8. What if I violate the test assumptions? ②

9.9. Brian's attempt to woo Jane ①

9.10. What next? ①

9.11. Key terms that I've discovered

9.12. Smart Alex's tasks

9.13. Further reading

10 Moderation, mediation and more regression

10.1. What will this chapter tell me? ①

10.2. Installing custom dialog boxes in SPSS ②

10.3. Moderation: interactions in regression ③

10.3.1. The conceptual model ③

10.3.2. The statistical model ②

10.3.3. Centring variables ②

10.3.4. Creating interaction variables ②

10.3.5. Following up an interaction effect ②

10.3.6. Running the analysis ②

10.3.7. Output from moderation analysis ②

10.3.8. Reporting moderation analysis ②

10.4. Mediation ②

10.4.1. The conceptual model ②

10.4.2. The statistical model ②

10.4.3. Effect sizes of mediation ③

10.4.4. Running the analysis ②

10.4.5. Output from mediation analysis ②

10.4.6. Reporting mediation analysis ②

10.5. Categorical predictors in regression ③

10.5.1. Dummy coding ③

10.5.2. SPSS output for dummy variables ③

10.6. Brian's attempt to woo Jane ①

10.7. What next? ①

10.8. Key terms that I've discovered

10.9. Smart Alex's tasks

10.10. Further reading

11 Comparing several means: ANOVA (GLM 1)

11.1. What will this chapter tell me? ①

11.2. The theory behind ANOVA ②

11.2.1. Using a linear model to compare means ②

11.2.2. Logic of the F -ratio ②

11.2.3. Total sum of squares (SS_T) ②

11.2.4. Model sum of squares (SS_M) ②

11.2.5. Residual sum of squares (SS_R) ②

11.2.6. Mean squares ②

11.2.7. The F -ratio ②

11.2.8. Interpreting F ②

11.3. Assumptions of ANOVA ③

11.3.1. Homogeneity of variance ②

11.3.2. Is ANOVA robust? ③

11.3.3. What to do when assumptions are violated ②

11.4. Planned contrasts ②

11.4.1. Choosing which contrasts to do ②

11.4.2. Defining contrasts using weights ②

11.4.3. Non-orthogonal comparisons ②

11.4.4. Standard contrasts ②

11.4.5. Polynomial contrasts: trend analysis ②

11.5. *Post hoc* procedures ②

11.5.1. Type I and Type II error rates for *post hoc* tests ②

11.5.2. Are *post hoc* procedures robust? ②

11.5.3. Summary of *post hoc* procedures ②

11.6. Running one-way ANOVA in SPSS ②

11.6.1. General procedure of one-way ANOVA ②

11.6.2. Planned comparisons using SPSS ②

11.6.3. *Post hoc* tests in SPSS ②

11.6.4. Options ②

11.6.5. Bootstrapping ②

11.7. Output from one-way ANOVA ②

11.7.1. Output for the main analysis ②

11.7.2. Output for planned comparisons ②

11.7.3. Output for *post hoc* tests ②

11.8. Calculating the effect size ②

11.9. Reporting results from one-way independent ANOVA ②

11.10. Key terms that I've discovered

11.11. Brian's attempt to woo Jane ①

11.12. What next? ①

11.13. Smart Alex's tasks

11.14. Further reading

12 Analysis of covariance, ANCOVA (GLM 2)

12.1. What will this chapter tell me? ②

12.2. What is ANCOVA? ②

12.3. Assumptions and issues in ANCOVA ③

12.3.1. Independence of the covariate and treatment effect ③

12.3.2. Homogeneity of regression slopes ③

12.3.3. What to do when assumptions are violated ②

12.4. Conducting ANCOVA in SPSS ②

12.4.1. General procedure ①

12.4.2. Inputting data ①

12.4.3. Testing the independence of the treatment variable and covariate ②

12.4.4. The main analysis ②

12.4.5. Contrasts

12.4.6. Other options ②

- 12.4.7. Bootstrapping and plots ②
- 12.5. Interpreting the output from ANCOVA ②
 - 12.5.1. What happens when the covariate is excluded? ②
 - 12.5.2. The main analysis ②
 - 12.5.3. Contrasts ②
 - 12.5.4. Interpreting the covariate ②
- 12.6. Testing the assumption of homogeneity of regression slopes ③
- 12.7. Calculating the effect size ②
- 12.8. Reporting results ②
- 12.9. Brian's attempt to woo Jane ①
- 12.10. What next? ②
- 12.11. Key terms that I've discovered
- 12.12. Smart Alex's tasks
- 12.13. Further reading

13 Factorial ANOVA (GLM 3)

- 13.1. What will this chapter tell me? ②
- 13.2. Theory of factorial ANOVA (independent designs) ②
 - 13.2.1. Factorial designs ②
 - 13.2.2. Guess what? Factorial ANOVA is a linear model ③
 - 13.2.3. Two-way ANOVA: behind the scenes ②
 - 13.2.4. Total sums of squares (SS_T) ②
 - 13.2.5. Model sum of squares, SS_M ②
 - 13.2.6. The residual sum of squares, SS_R ②
 - 13.2.7. The F -ratios ②
- 13.3. Assumptions of factorial ANOVA ③
- 13.4. Factorial ANOVA using SPSS ②
 - 13.4.1. General procedure for factorial ANOVA ①
 - 13.4.2. Entering the data and accessing the main dialog box ②
 - 13.4.3. Graphing interactions ②
 - 13.4.4. Contrasts ②
 - 13.4.5. *Post hoc* tests ②
 - 13.4.6. Bootstrapping and other options ②
- 13.5. Output from factorial ANOVA ②
 - 13.5.1. Levene's test ②
 - 13.5.2. The main ANOVA table ②
 - 13.5.3. Contrasts ②
 - 13.5.4. Simple effects analysis ③
 - 13.5.5. *Post hoc* analysis ②
- 13.6. Interpreting interaction graphs ②
- 13.7. Calculating effect sizes ③
- 13.8. Reporting the results of two-way ANOVA ②
- 13.9. Brian's attempt to woo Jane ①
- 13.10. What next? ②
- 13.11. Key terms that I've discovered
- 13.12. Smart Alex's tasks

13.13. Further reading

14 Repeated-measures designs (GLM 4)

14.1. What will this chapter tell me? ②

14.2. Introduction to repeated-measures designs ②

14.2.1. The assumption of sphericity ②

14.2.2. How is sphericity measured? ②

14.2.3. Assessing the severity of departures from sphericity ②

14.2.4. What is the effect of violating the assumption of sphericity? ③

14.2.5. What do you do if you violate sphericity? ②

14.3. Theory of one-way repeated-measures ANOVA ②

14.3.1. The total sum of squares, SS_T ②

14.3.2. The within-participant sum of squares, SS_W ②

14.3.3. The model sum of squares, SS_M ②

14.3.4. The residual sum of squares, SS_R ②

14.3.5. The mean squares ②

14.3.6. The F -ratio ②

14.3.7. The between-participants sum of squares ②

14.4. Assumptions in repeated-measures ANOVA ③

14.5. One-way repeated-measures ANOVA using SPSS ②

14.5.1. Repeated-measures ANOVA: the general procedure ②

14.5.2. The main analysis ②

14.5.3. Defining contrasts for repeated measures ②

14.5.4. *Post hoc* tests and additional options ③

14.6. Output for one-way repeated-measures ANOVA ②

14.6.1. Descriptives and other diagnostics ①

14.6.2. Assessing and correcting for sphericity: Mauchly's test ②

14.6.3. The main ANOVA ②

14.6.4. Contrasts ②

14.6.5. *Post hoc* tests ②

14.7. Effect sizes for repeated-measures ANOVA ③

14.8. Reporting one-way repeated-measures ANOVA ②

14.9. Factorial repeated-measures designs ②

14.9.1. The main analysis ②

14.9.2. Contrasts ②

14.9.3. Simple effects analysis ③

14.9.4. Graphing interactions ②

14.9.5. Other options ②

14.10. Output for factorial repeated-measures ANOVA ②

14.10.1. Descriptives and main analysis ②

14.10.2. Contrasts for repeated-measures variables ②

14.11. Effect sizes for factorial repeated-measures ANOVA ③

14.12. Reporting the results from factorial repeated-measures ANOVA ②

14.13. Brian's attempt to woo Jane ①

14.14. What next? ②

14.15. Key terms that I've discovered

14.16. Smart Alex's tasks

14.17. Further reading

15 Mixed design ANOVA (GLM 5)

15.1 What will this chapter tell me? ①

15.2. Mixed designs ②

15.3. Assumptions in mixed designs ②

15.4. What do men and women look for in a partner? ②

15.5. Mixed ANOVA in SPSS ②

15.5.1. Mixed ANOVA: the general procedure ②

15.5.2. Entering data ②

15.5.3. The main analysis ②

15.5.4. Other options ②

15.6. Output for mixed factorial ANOVA ③

15.6.1. The main effect of gender ②

15.6.2. The main effect of looks ②

15.6.3. The main effect of charisma ②

15.6.4. The interaction between gender and looks ②

15.6.5. The interaction between gender and charisma ②

15.6.6. The interaction between attractiveness and charisma ②

15.6.7. The interaction between looks, charisma and gender ③

15.6.8. Conclusions ③

15.7. Calculating effect sizes ③

15.8. Reporting the results of mixed ANOVA ②

15.9. Brian's attempt to woo Jane ①

15.10. What next? ②

15.11. Key terms that I've discovered

15.12. Smart Alex's tasks

15.13. Further reading

16 Multivariate analysis of variance (MANOVA)

16.1. What will this chapter tell me? ②

16.2. When to use MANOVA ②

16.3. Introduction

16.3.1. Similarities to and differences from ANOVA ②

16.3.2. Choosing outcomes ②

16.3.3. The example for this chapter ②

16.4. Theory of MANOVA ③

16.4.1. Introduction to matrices ③

16.4.2. Some important matrices and their functions ③

16.4.3. Calculating MANOVA by hand: a worked example ③

16.4.4. Principle of the MANOVA test statistic ④

16.5. Practical issues when conducting MANOVA ③

16.5.1. Assumptions and how to check them ③

16.5.2. What to do when assumptions are violated ③

16.5.3. Choosing a test statistic ③

16.5.4. Follow-up analysis ③

16.6. MANOVA using SPSS ②

16.6.1. General procedure of one-way ANOVA ②

16.6.2. The main analysis ②

16.6.3. Multiple comparisons in MANOVA ②

16.6.4. Additional options ③

16.7. Output from MANOVA ③

16.7.1. Preliminary analysis and testing assumptions ③

16.7.2. MANOVA test statistics ③

16.7.3. Univariate test statistics ②

16.7.4. SSCP matrices ③

16.7.5. Contrasts ③

16.8. Reporting results from MANOVA ②

16.9. Following up MANOVA with discriminant analysis ③

16.10. Output from the discriminant analysis ④

16.11. Reporting results from discriminant analysis ②

16.12. The final interpretation ④

16.13. Brian's attempt to woo Jane ①

16.14. What next? ②

16.15. Key terms that I've discovered

16.16. Smart Alex's tasks

16.17. Further reading

17 Exploratory factor analysis

17.1. What will this chapter tell me? ①

17.2. When to use factor analysis ②

17.3. Factors and components ②

17.3.1. Graphical representation ②

17.3.2. Mathematical representation ②

17.3.3. Factor scores ②

17.4. Discovering factors ②

17.4.1. Choosing a method ②

17.4.2. Communality ②

17.4.3. Factor analysis or PCA? ②

17.4.4. Theory behind PCA ③

17.4.5. Factor extraction: eigenvalues and the scree plot ②

17.4.6. Improving interpretation: factor rotation ③

17.5. Research example ②

17.5.1. General procedure ①

17.5.2. Before you begin ②

17.6. Running the analysis ②

17.6.1. Factor extraction in SPSS ②

17.6.2. Rotation ②

17.6.3. Scores ②

17.6.4. Options ②

17.7. Interpreting output from SPSS ②

17.7.1. Preliminary analysis ②

17.7.2. Factor extraction ②

17.7.3. Factor rotation ②

17.7.4. Factor scores ②

17.7.5. Summary ②

17.8. How to report factor analysis ①

17.9. Reliability analysis ②

17.9.1. Measures of reliability ③

17.9.2. Interpreting Cronbach's α (some cautionary tales) ②

17.9.3. Reliability analysis in SPSS ②

17.9.4. Reliability analysis output ②

17.10. How to report reliability analysis ②

17.11. Brian's attempt to woo Jane ①

17.12. What next? ②

17.13. Key terms that I've discovered

17.14. Smart Alex's tasks

17.15. Further reading

18 Categorical data

18.1. What will this chapter tell me? ①

18.2. Analysing categorical data ①

18.3. Theory of analysing categorical data ①

18.3.1. Pearson's chi-square test ①

18.3.2. Fisher's exact test ①

18.3.3. The likelihood ratio ②

18.3.4. Yates's correction ②

18.3.5. Other measures of association ①

18.3.6. Several categorical variables: loglinear analysis ③

18.4. Assumptions when analysing categorical data ①

18.4.1. Independence ①

18.4.2. Expected frequencies ①

18.4.3. More doom and gloom ①

18.5. Doing chi-square in SPSS ①

18.5.1. General procedure for analysing categorical outcomes ①

18.5.2. Entering data ①

18.5.3. Running the analysis ①

18.5.4. Output for the chi-square test ①

18.5.5. Breaking down a significant chi-square test with standardized residuals ②

18.5.6. Calculating an effect size ②

18.5.7. Reporting the results of chi-square ①

18.6. Loglinear analysis using SPSS ②

18.6.1. Initial considerations ②

18.6.2. Running loglinear analysis ②

18.6.3. Output from loglinear analysis ③

18.6.4. Following up loglinear analysis ②

18.7. Effect sizes in loglinear analysis ②

18.8. Reporting the results of loglinear analysis ②

18.9. Brian's attempt to woo Jane ①

18.10. What next? ①

18.11. Key terms that I've discovered

18.12. Smart Alex's tasks

18.13. Further reading

19 Logistic regression

19.1. What will this chapter tell me? ①

19.2. Background to logistic regression ①

19.3. What are the principles behind logistic regression? ③

19.3.1. Assessing the model: the log-likelihood statistic ③

19.3.2. Assessing the model: the deviance statistic ③

19.3.3. Assessing the model: R and R^2 ③

19.3.4. Assessing the contribution of predictors: the Wald statistic ②

19.3.5. The odds ratio: $\exp(B)$ ③

19.3.6. Model building and parsimony ②

19.4. Sources of bias and common problems ④

19.4.1. Assumptions ②

19.4.2. Incomplete information from the predictors ④

19.4.3. Complete separation ④

19.4.4. Overdispersion ④

19.5. Binary logistic regression: an example that will make you feel eel ②

19.5.1. Building a model ①

19.5.2. Logistic regression: the general procedure ①

19.5.3. Data entry ①

19.5.4. Building the models in SPSS ②

19.5.5. Method of regression ②

19.5.6. Categorical predictors ②

19.5.7. Comparing the models ②

19.5.8. Rerunning the model ①

19.5.9. Obtaining residuals ②

19.5.10. Further options ②

19.5.11. Bootstrapping ②

19.6. Interpreting logistic regression ②

19.6.1. Block 0 ②

19.6.2. Model summary ②

19.6.3. Listing predicted probabilities ②

19.6.4. Interpreting residuals ②

19.6.5. Calculating the effect size ②

19.7. How to report logistic regression ②

19.8. Testing assumptions: another example ②

19.8.1. Testing for linearity of the logit ③

19.8.2. Testing for multicollinearity ③

19.9. Predicting several categories: multinomial logistic regression ③

19.9.1. Running multinomial logistic regression in SPSS ③

19.9.2. Statistics ③

19.9.3. Other options ③

19.9.4. Interpreting the multinomial logistic regression output ③

19.9.5. Reporting the results ②

19.10. Brian's attempt to woo Jane ①

19.11. What next? ①

19.12. Key terms that I've discovered

19.13. Smart Alex's tasks

19.14. Further reading

20 Multilevel linear models

20.1. What will this chapter tell me? ①

20.2. Hierarchical data ②

20.2.1. The intraclass correlation ②

20.2.2. Benefits of multilevel models ②

20.3 Theory of multilevel linear models ③

20.3.1. An example ②

20.3.2. Fixed and random coefficients ③

20.4 The multilevel model ④

20.4.1. Assessing the fit and comparing multilevel models ④

20.4.2. Types of covariance structures ④

20.5 Some practical issues ③

20.5.1. Assumptions ③

20.5.2. Robust multilevel models ③

20.5.3. Sample size and power ③

20.5.4. Centring predictors ③

20.6 Multilevel modelling using SPSS ④

20.6.1. Entering the data ②

20.6.2. Ignoring the data structure: ANOVA ②

20.6.3. Ignoring the data structure: ANCOVA ②

20.6.4. Factoring in the data structure: random intercepts ③

20.6.5. Factoring in the data structure: random intercepts and slopes ④

20.6.6. Adding an interaction to the model ④

20.7. Growth models ④

20.7.1. Growth curves (polynomials) ④

20.7.2. An example: the honeymoon period ②

20.7.3. Restructuring the data ③

20.7.4. Running a growth model on SPSS ④

20.7.5. Further analysis ④

20.8. How to report a multilevel model ③

20.9. A message from the octopus of inescapable despair ①

20.10. Brian's attempt to woo Jane ①

20.11. What next? ②

20.12. Key terms that I've discovered

20.13. Smart Alex's tasks

20.14. Further reading

21 Epilogue: life after discovering statistics

21.1. Nice emails

21.2. Everybody thinks that I'm a statistician

21.3. Craziiness on a grand scale

21.3.1. Catistics

21.3.2. Cult of underlying numerical truths

21.3.3. And then it got really weird

Glossary

Appendix

References

Index

PREFACE

Karma Police, arrest this man, he talks in maths, he buzzes like a fridge, he's like a detuned radio

Radiohead, 'Karma Police', *OK Computer* (1997)

Introduction

Many behavioural and social science students (and researchers for that matter) despise statistics. Most of us have a non-mathematical background, which makes understanding complex statistical equations very difficult. Nevertheless, the evil goat-warriors of Satan force our non-mathematical brains to apply themselves to what is the very complex task of becoming a statistics expert. The end result, as you might expect, can be quite messy. The one weapon that we have is the computer, which allows us to neatly circumvent the considerable disability of not understanding mathematics. Computer programs such as IBM SPSS Statistics, SAS, R and the like provide an opportunity to teach statistics at a conceptual level without getting too bogged down in equations. The computer to a goat-warrior of Satan is like catnip to a cat: it makes them rub their heads along the ground and purr and dribble ceaselessly. The only downside of the computer is that it makes it really easy to make a complete idiot of yourself if you don't really understand what you're doing. Using a computer without any statistical knowledge at all can be a dangerous thing. Hence this book.

My first aim is to strike a good balance between theory and practice: I want to use the computer as a tool for teaching statistical concepts in the hope that you will gain a better understanding of both theory and practice. If you want theory and you like equations then there are certainly better books. Howell (2012), Stevens (2002) and Tabachnick and Fidell (2012) have taught (and continue to teach) me more about statistics than you could possibly imagine. (I have an ambition to be cited in one of these books, but I don't think that will ever happen.) However, if you want a stats book that also discusses digital rectal stimulation then you have just spent your money wisely.

Too many books create the impression that there is a 'right' and 'wrong' way to do statistics. Data analysis is more subjective than is often made out. Therefore, although I make recommendations within the limits imposed by the senseless destruction of rainforests, I hope to give you enough background in theory to enable you to make your own decisions about how best to conduct your analysis.

A second (ridiculously ambitious) aim is to make this the only statistics book that you'll ever need to buy. It's a book that I hope will become your friend from first year at university right through to your professorship. The start of the book is aimed at first-year undergraduates ([Chapters 1–9](#)), and then we move onto second-year undergraduate level material ([Chapters 5, 8 and 10–15](#)) before a dramatic climax that should keep postgraduates tickled ([Chapters 16–20](#)). There should be something for everyone in each chapter also, and to help you gauge the difficulty of material, I flag the level of each section within each chapter (more on that in a moment).

My final and most important aim is to make the learning process fun. I have a sticky history with maths. This extract is from my school report at the age of 11:

MATHEMATICS ADDL. MATHS.	43	59	27	D	C	His work shows lack of discipline in thought and presentation. I don't hope it will matter next year.	...
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The '27' in the report is to say that I came equal 27th with another student out of a class of 29. That's pretty much bottom of the class. The 43 is my exam mark as a percentage. Oh dear. Four years later (at 15) this was my school report:

NAME Andrew Field FORM 4Q SUBJECT Mathematics

Andrew's progress in Mathematics has been remarkable. From being a weaker candidate who lacked confidence he has developed into a budding Mathematician. He should achieve a good grade.

EXAM	
ATTAINMENT	
EFFORT	

Date 27/6/88 B.A. Greste Subject Teacher

The catalyst of this remarkable change was having a good teacher: my brother, Paul. I owe my life as an academic to Paul's ability to teach me stuff in an engaging way – something my maths teacher failed to do. Paul's a great teacher because he cares about bringing out the best in people, and he was able to make things interesting and relevant to me. He got the 'good teaching' genes in the family, but wasted them by not becoming a teacher; however, they're a little less wasted because his approach inspires mine. I strongly believe that people appreciate the human touch, and so I try to inject a lot of my own personality and sense of humour (or lack of) into *Discovering Statistics Using ...* books. Many of the examples in this book, although inspired by some of the craziness that you find in the real world, are designed to reflect topics that play on the minds of the average student (i.e., sex, drugs, rock and roll, celebrity, people doing crazy stuff). There are also some examples that are there simply because they made me laugh. So, the examples are light-hearted (some have said 'smutty', but I prefer 'light-hearted') and by the end, for better or worse, I think you will have some idea of what goes on in my head on a daily basis. I apologize to those who think it's crass, hate it, or think that I'm undermining the seriousness of science, but, come on, what's not funny about a man putting an eel up his anus?

I never believe that I meet my aims, but previous editions have certainly been popular. I enjoy the rare luxury of having complete strangers emailing me to tell me how wonderful I am. (Admittedly there are also emails calling me a pile of gibbon excrement, but you have to take the rough with the smooth.) The second edition of this book also won the British Psychological Society book award in 2007. However, with every new edition, I fear that the changes I make will ruin all of my previous hard work. Let's see what those changes are.

What do you get for your money?

This book takes you on a journey (and I try my best to make it a pleasant one) not just of statistics but also of the weird and wonderful contents of the world and my brain. It's full of daft, bad jokes, and smut. Aside from the smut, I have been forced reluctantly to include some academic content.

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