issues in Europe, especially Southern Europe, from an empirical viewpoint, this book makes an excellent contribution to existing scholarship. However, readers interested in learning about security theory with specific reference to migration, and especially a gendered critique, will be disappointed.

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John Maindonald and John Braun, *Data Analysis and Graphics Using R: An Example-based Approach*. Cambridge: Cambridge University Press, 2003**.**

With the ever-increasing use of the R environment[1] by statisticians, demographers and other researchers, there is a need for texts that cover recent developments in statistical methodology and data analysis using R. Several texts have been written for R users; most focus on specialist areas and advanced methods. Only a few texts attempt to provide readers with an introduction to R along with an appropriate blend of statistical content and an array of examples that enable readers to use the text as a guide or to complement their analyses. This book is one of them.

John Maindonald and John Braun are applied statisticians with over 40 years experience in consulting and data analysis between them. They have written the book for researchers who have an understanding of basic undergraduate statistical methodology and who wish to conduct analyses of their own data. It will be of particular interest to users of S-plus (a commercial package based on the same language that underpins R), and to researchers who need to undertake data analysis. The text can be used as a companion to more sophisticated methodological texts.

It is not an introductory text book on statistics or the R software environment akin to Dalgaard (2002) or Verzani (2005). Nor is it a specialist text on an advanced statistical topic such as Venables and Ripley (2002), Faraway (2004, 2006) or Wood (2006). Perhaps the closest competitor is Heiberger and Holland (2004): both cover relatively similar topics such as multiple regression, logistic regression and time series analysis, and both are structured around statistical techniques, and analytical strategies.

The authors illustrate statistical modelling with minimal mathematical notation but with many examples drawn from a variety of disciplines. From Chapter 2 ('Styles of data analysis') to Chapter 9 ('Multi-level models, time series and repeated measures'), each chapter presents readers with a modelling framework to work towards a

better understanding of the behaviour of their data. The authors explain exploratory and analytical techniques carefully and precisely. The information presented in each subsection flows well and in a simple manner for the reader to understand assumptions and validity of the models. For example, in Section 4.4 ('Contingency tables approach'), the authors cleverly convey the necessary mathematics, followed by a section on inappropriate use of contingency tables, and then present a data set relevant to epidemiology and biological sciences.

The text provides in-depth discussions of topics such as logistic and generalized linear models, time series, repeated measures, tree-based classification and regression and principal components. The inclusion of time series and repeated measures in step-by-step detail is a valuable contribution. Many data analysis texts omit these topics although such data occur frequently in demography, epidemiology and biology. The section on 'Interpreting regression coefficients' (Section 6.5) is also particularly useful, with a clear and detailed analysis of a data set focusing on diagnostics and model adequacy. However, the inclusion of an entire chapter on regression with a single predictor (Chapter 5) is an odd choice, given that the intended readers are researchers who wish to undertake analyses of their own data. It is unlikely that researchers would encounter scenarios where the effect of a single explanatory variable on the outcome is of interest without adjusting for other explanatory variables that may confound any 'real' associations.

Disappointingly, the authors omitted a detailed explanation of smoothing methods and generalized additive models. Although they provide references to these methods at the end of Chapter 7, important aspects of smoothing techniques have been omitted: for example, the choice of smoother diagnostics and interpretation of smoothing curves.

Most chapters take the reader on a step-by-step journey of data analysis techniques. The writing style is informal, clear, and easy to read. One of the useful features of the book is the way the authors have included comprehensive R codes within the text, alongside detailed examples, without compromising the general flow of the topics being covered. All sections are easy to follow and examples easy to replicate. Data from the book and some new R functions are included in the DAAG package through the Comprehensive R Archive Network (http://cran.r-project.org/). The book is organized in a concise manner with brief chapter summaries that are very useful. The 'further reading' sections of each chapter are also useful with current and relevant references.

The Appendix ('S-Plus differences'") is most useful for the reader who is switching from S-Plus to R for the first time. The chapter familiarizes the reader with various differences between S-Plus and the R environment.

We have used the book with our own PhD students and co-authors as they learn R. Some have found it a difficult first book when using R, and have found it helpful to use Dalgaard (2002) initially and this book as they gain more experience. For demographers considering switching to R, the demography package (<http://www.robhyndman.info/Rlibrary/demography/>) would also be useful.

The text is a valuable contribution to the resources of its intended audience, 'scientists who wish to do statistical analyses on their own data' (Preface). It discusses in detail many important issues that researchers encounter with their own data and provides solutions to assist in a better handling of these issues. The text should be on the bookshelf of all researchers who analyse data using R. We also recommend it

to those considering switching to R. However, a new edition of the book was due in August 2006, so it may be worth waiting before purchasing.

Note

1 R is a free software environment for data analysis, statistical computing and graphics. It is available from <http://www.r-project.org>.

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