The final 60 pages of the book are, like Krol's, an inventory. We have a glossary (with some curious definitions, and disagreement with the text), some 'Notes on Appendixes', and the common listing of web sites with brief descriptions, structured nationally then by state. Lacking are some of the meta-information sources that already exist, the NCGIA Core Curriculum, Europe's GISDATA project, CEISIN, Global Map, Digital Earth and many others. There is also a strong North American bias.

Over all, Drew Decker has made a noble attempt to do the impossible, to nail the jello of the vast capabilities of the world wide web to the solid wall of a book. I am reminded of the urban legend, that a computer initiate found out about the world wide web, and asked his secretary to copy it onto a floppy disk for him to take home and read overnight. Like the secretary, one could say that the author was doomed to failure at the outset. Yet this book does inform, and contains some sound home-spun experience. There may be some value to the complete GIS novice without access to the web, should one still exist. Given the choice, however, just visit the web site and skip the book. Like 'The Whole Internet', it will remain a historical curiosity on the periphery of the GIS world.

KEITH C. CLARKE
Department of Geography/NCGIA
University of California, Santa Barbara, USA

Quantitative Geography: Perspectives on Spatial Data Analysis By A. STEWART FOTHERINGHAM, CHRIS BRUNSDON, and MARTIN CHARLTON (London: Sage Publications, 2000). [Pp. xii + 270]. ISBN 0 7619 5947 5. Price £50, hardback. ISBN 0 7619 5948 3. Price £16.99, paperback.

Geographers remember the 1960s as a period of rapid introduction of quantitative techniques, together with a strongly held and widespread belief that such methods would lead to the discovery of general truths about human and physical phenomena on the surface of the Earth—in other words, the elusive geographical theory. This 'quantitative revolution' was followed by a long period of retrenchment, by the advocacy of 'qualitative methods', and by the growth of critical social theory. Even GIS has felt the impact of these critiques, and many GIS scholars have been drawn into the study of the social context of GIS.

This background may help to explain why this excellent new book on spatial data analysis should have been titled 'Quantitative Geography', and why the authors have been drawn to develop such a spirited defence in its pages of the use of these methods by geographers. The authors are out to persuade their readers that announcements of the demise of quantitative geography are premature: that the field is alive and well; and that many of the criticisms levelled at the field over the past three decades are easily addressed, and indeed have already been addressed. At the same time, the title may be more than a little mystifying to economists, anthropologists, criminologists, epidemiologists, and other non-geographers who will find this book to be the best and most comprehensive review of spatial data analysis currently available, and a powerful companion in applications of GIS to scientific research.

Good books on spatial data analysis are in short supply, and this is a very welcome addition to the bookshelf. The field of spatial data analysis has matured significantly in the past two decades, aided to no small degree by the growth of GIS. The authors take the reasonable view that while spatial data analysis began as a peripheral activity of statisticians, and quantitative geographers for the most part simply imported their ideas, the field has now grown to be a source of ideas and novel methods. Many of these rely heavily on computation, and could not have emerged without the support of GIS data models and the ready availability of various types of digital geographical data, including reporting zone boundaries.

Many of the newer methods would have been regarded as distinctly heretical in the days of the quantitative revolution. The authors devote an entire chapter to local analysis, the set of techniques that accepts spatial heterogeneity as given, and allows such general properties as model parameters to vary geographically. Another chapter is devoted to a spatial analyst's perspective on classical statistical inference; unlike the textbooks of the 1960s and 1970s it draws explicit attention to the problems of making inferences from spatial data, because of the frequent violation of classical assumptions of sample independence. An early chapter provides a solid primer in the principles of GIS.

The book approaches the topic at a fairly advanced level, and would be best read by someone with a solid understanding of the basics of statistics, some degree of exposure to spatial analysis, and an ability to follow mathematical formalisms. It would be an excellent basis for a graduate class on spatial analysis. On the other hand the level of mathematical treatment is straightforward, the authors are able to explain advanced concepts in simple terms, and the book is well illustrated, although illustrations are all simple black-and-white line drawings, and the reader misses the visual attraction of GIS.

Some references to GIS software are included, mostly to past research projects that have developed extensive functionality through the use of GIS scripting languages such as Avenue, or through stand-alone packages. But the authors have chosen not to distribute code with the book, or to link it tightly to any one GIS environment. A second edition might give the authors an opportunity to include more extensive links to WWW software resources, or greater detail on the acquisition of software that implements many of the techniques described in the book. Of course there are arguments both for and against providing easy access to software, but more detailed pointers on software, for example to implement the authors' own Geographically Weighted Regression (GWR), would be simple to provide and very helpful for many readers.

Like much of the work of UK geographers interested in GIS and spatial analysis, the emphasis in the book is on applications in the social domain, and much use is made of survey data and census variables. Readers interested in applications of spatial data analysis in the environmental and Earth sciences—in geostatistics or landscape fragmentation, for example—may find other books more useful. But this book is a welcome new arrival, and should do much to increase interest in advanced spatial data analysis among human geographers, and among GIS users in other social sciences.

MICHAEL F. GOODCHILD
NCGIA, University of California
Santa Barbara, USA