

(Chapter 10) in the planning context. Nevertheless, the fact that most chapters have a conclusion of their own make them rather complete in themselves, thus enabling a teacher to use each chapter as a standalone module for class reading.

In sum, this monograph provides a very comprehensive introduction to frameworks in systems analysis, data acquisition and GIS that are required for designing urban information systems. It will soon be regarded as the pioneering work within a stream of literature that will likely to follow it in the years to come.

References

- BRAIL, K. R., and KLOSTERMAN, R. E., (eds.), 2001, *Planning Support Systems: Integrating Geographic Information Systems, Models, and Visualisation Tools* (Redlands, CA: ESRI Press).
- GRAHAM, S., and MARVIN, S., 1996, *Telecommunications and The City: Electronic Spaces, Urban Places* (London: Routledge).
- TIMMERMANS, H., (editor), 1997, *Decision Support Systems in Urban Planning* (London: E&FN Spon).

NARUSHIGE SHIODE
Centre for Advanced Spatial Analysis
University College London, UK

Mapping Cyberspace. By MARTIN DODGE and ROB KITCHIN (London: Routledge, 2001) [Pp. 260]. ISBN 0-415-19884-4. Price £19.99 Paperback.

This volume covers much more ground than its two-word title suggests. The authors indicate that the book began as a coffee-table book, mutated into a book about the spatialities and geometries of cyberspace, and then mutated again into its present form. This present form is described as a geographical analysis and critical reading of information and communication technologies and their relationship to social, cultural, political and economic life.

The initial chapters present background discussions that provide a context for the relationships among cyberspace, the information society, geography, and cartography. The reader learns that the term cyberspace was derived from the Greek word *kyber* (to navigate) and was coined by William Gibson in his 1984 novel *Neuromancer*. The first chapter sets up subsequent discussions by defining terms and providing a historical context for important concepts such as the Internet and virtual reality. This is followed by discussions centred on a number of dualistic categories such as space/spacelessness, industrial/post industrial, and nature/technology. The reader is then taken beyond modernism and introduced to the approaches, positions, and constructions of a variety of critical social theorists. The second chapter continues this theme by discussing issues in cultural and social geography such as global culturalization, political structures, spaces of surveillance, and geographies of exclusion. The third chapter extends the social theory discussion by considering the virtual geographies of cyberspace and implications for identity and community.

Chapters 5 through 8 focus on mapping issues. This section starts with a brief history of cartography and visits issues such as data quality and availability, user knowledge, and ethics. Examples of research that attempted to map the infrastructure, the flow of traffic, and the activities on networks are presented. These discussions include black-and-white and colour representations of cyberspace. Some are in the form of traditional cartographic maps while others are topological maps of networks or conceptual visualizations. The mapping of popular concepts such as e-mail, mailing lists, and listservs is discussed under the category of asynchronous media that serve users that participate at different times. The final chapter in this section considers synchronous social media such as chat rooms and MUDs (Multi-User Domains) that serve participants that are present at the same time. My favourite part of the book was an extended discussion of AlphaWorld where inhabitants are represented by avatars (a visual character identifier) while they navigate through virtual space, build communities, and vandalize their neighbour's property.

The final chapters of the book consider issues related to spatial cognition in a cyberspace context, the imaginary world of science fiction, and the future in cyberspace. Important

cognitive processes such as wayfinding and cognitive mapping that have been studied extensively in geographical spaces are also important issues in cyberspace. The authors review a number of studies that have extended these spatial cognition research topics into virtual worlds.

A chapter that examines a science fiction genre called cyberpunk is particularly informative and interesting. The analysis is based on the authors' detailed reading of 34 novels and four collections of short stories. This form of cyberfiction is said to provide informed views of future worlds given present trends and potential technological developments. The future mappings of cyberspace are presented in the forms of specific questions that relate to three general categories:

- What does cyberspace look like?
- How is cyberspace changing social relations?
- Will cyberspace make geography obsolete?

The authors' answer to the last question is 'NO'. They conclude in their final paragraph that 'space and geography continue to matter and in some senses have taken on more importance' (p. 219).

This is a well-crafted book, which informs the reader on connections between disparate worlds. The text is thoroughly documented and clearly written. The reader does not have to be an expert on any of the primary topics to appreciate the book. The authors go out of their way to provide historical backgrounds for important topics and to define unfamiliar terms. The book has numerous illustrations. Although illustration can add immeasurable value to discussions of complex topics, low-quality illustrations can subtract value. Many of the book's illustrations were originally made for web sites. The scale change required to reduce a monitor screen full of information to a part of a printed page makes text too small to read and the finer details in the illustration too minute to understand. To be fair to the authors, there is no easy solution to this problem. They are trying to present illustrations made by other people for other purposes. The authors were obviously aware of this problem and have two solutions that take the reader outside the book. The authors have included numerous web addresses that could be used to view the original figures at their original sizes. The authors also have a related website <http://www.MappingCyberspace.com/>, which is devoted to the book and provides a map gallery.

I expected a book on how we mapped the Internet, but got something quite different. The rewards of learning about connections between cyberspace, social theory, geography, cartography, cognitive science, and cyberpunk fiction are well worth the reader's effort.

ROBERT LLOYD

*Department of Geography
University of South Carolina, USA*