

cartographic perspectives

Number 38, Winter 2001

in this issue

ESSAY Whither Cartography? 3 Judith A. Tyner **FEATURED ARTICLES** 7 How The Monosemic Graphics Go Polysemic Jan Ketil Rod Visualizing Data Certainty: A Case Study Using 19 Graduated Circle Maps Laura D. Edwards and Elisabeth S. Nelson The Poet As Map-Maker: The Cartographic Inspiration 37 and Influence of Elizabeth Bishop's "The Map" Adele J. Haft **CARTOGRAPHIC TECHNIQUES** Physical Terrain Modeling for Geographic Visualization 66 Douglas R. Caldwell MAP LIBRARY BULLETIN BOARD The Map Library's Future 73 C. Peter Keller **ONLINE MAPPING** 77 Cyber Rights and Cyber Maps Jeremy Crampton **BOOK REVIEW** Geographic Information Systems, An Introduction 81 by Tor Bernhardsen Reviewed by Gordon Kennedy

Letter from the Editor

Dear Members of NACIS,

This issue of Cartographic Perspectives marks the beginning of my tenure as editor. I wrote this column . . . wanting to tell you about the new editorial board, about some ideas for the journal, and to solicit manuscripts. Much of this seems so inconsequential in light of the attacks on the World Trade Center and the Pentagon, and the possible attack on the U.S. Capitol on September 11, 2000 . . . now known as 911. One month after the attack, 911 still is in my thoughts. I am reminded of it daily by the media . . . the newspaper, television, radio, magazines, the internet, the stock market. Some of my students have withdrawn from my classes because they have had to report for active duty. I see the American Flag everywhere. ... it has become such a powerful symbol for a country in mourning. . . a symbol of unity. There are lectures on terrorism on our campus.

(continued on page 83)

NACIS WEB SITE www.nacis.org

offers no strategy for selecting point-feature symbols.

Although "multi-media" is mentioned in this chapter there is nothing about Internet mapping. There is nothing about lithography, nothing about title, scale, or page layout, and no examples of finished, presentable maps.

The final paragraphs of this chapter reveal Bernhardsen's limited concept of cartography. He indicates that GIS is an analytical tool with "... few aesthetic capabilities," and that it is "... unable to manipulate the overall aesthetic appeal of a map . .." Cartography, on the other hand, is said to be an ancient, well-developed art and craft. His conception of maps as "static presentations" suggests that for Bernhardsen "cartography" is for manual paper map construction, whereas "visualization" is an extended set of presentation capabilities, some of which are drawn from cartography. I would expect many contemporary practicing cartographers and GIS practitioners to disagree. He makes no mention of the perception studies that have provided quantifiable design principles, nor of the desktop publishing software that now makes GIS data so readily available for presentation design, nor of the eagerness with which GIS vendors are developing mapping capabilities for the Internet.

Many other principles, techniques, and theories of the mapping sciences fall victim to Bernhardsen's approach to describing GIS. Photogrammetry, surveying, satellite imagery, and spatial analysis are some of the other topics laced with various shortcomings in this book. The two problems discussed above, however, are for me the key indicators of this book's principle trouble. There is no theoretical framework embracing and organizing the many topics discussed. As noted earlier, his conceptual

foundation appears to be that GIS is essentially an IT tool set, and an understanding of its components is an understanding of GIS. He devotes 154 pages to implementation issues and only 22 to geo-referencing and cartography combined.

Clearly, geo-referencing methods and map projections are fundamental to GIS. The brief treatment given this topic by Bernhardsen is especially surprising given his data orientation. Map projections are data transformation methods that affect all later spatial operations applied to the data. Cartography is another kind of data transformation method. In cartography, the outcomes of all forgoing GIS analyses are brought to life in a presentation intended to communicate, provoke, or inspire—in short, to influence in some way. A more extensive, careful treatment of such core concepts of GIS might have contributed to a unifying idea, weaving together all of the chapters, but this opportunity was missed.

This book may serve best as a general reference for IT professionals participating in GIS development and management or for business people working with GIS staff. There are moments of striking clarity as Bernhardsen describes a concept in a refreshingly non-geographic way, and this is a genuine contribution to expanding the appreciation of GIS among other disciplines. It would not serve well as a textbook or reference book for a GIS practitioner, however. It lacks a consistent, organized presentation of those core principles of geography that thread together spatial data frameworks, transformations, analyses, and presentations. Without such a unifying presentation, the book remains a catalog of GIS methodology.

Letter from the Editor (continued from page 1)

our campus. Some students in my introduction to maps course have talked about mapping terrorism. There are "donation cans" scattered everywhere for surviving families of NY police and firefighters. I have seen numerous memos from our University's President reminding us of the campus' staunch policy on equal rights. I think about the potential consequences of the war in Afghanistan. It weighs heavy on my mind when I look at my 4 sons . . . my two oldest 1.5 years away from age 18... I never had to register for the draft ... I wonder if they will? In spite of this, we move forward. We have to. So CP moves forward.

Over the past several years, under the guidance of Michael Peterson, CP enjoyed steady growth in article submissions and journal circulation. On behalf of all the members of NACIS, I would like to thank Mike for his commitment and dedication to CP. Under his leadership, CP has prospered. It is my intension to build on this prosperity, and encourage CP to grow and prosper. The members of NA-CIS enjoy a journal that is dedicated to issues central to cartography and geographic visualization. CP is unique when compared to other cartographic journals. Our journal is different; our journal is inclusive. We recognize the breadth of cartography, and publish papers across a wide spectrum of sub areas within cartography. Consider the current issue: we have papers on semiotics, on historical cartography, and on human perception of map symbols.

To continue this spirit of change, CP has a mostly new editorial board. With much guidance and input from the previous editor, a slate of people was assembled that represents all walks of cartography and visualization. The board includes Jim Anderson, Florida

Resources and Environmental Analysis Center, Florida State University as the returning assistant editor. Ren Vasiliev from the Department of Geography at SUNY Geneseo joins the board as book review editor. Charlie Frye from Environmental Systems Research Institute joins us as techniques editor. Jeremy Crampton from the Department of Anthropology and Geography, Georgia State University, reprises his role as online mapping editor. Jeremy began this column three years ago, and I am delighted to have him remain in that position. We have created a new position on the editorial board, that of Opinion Editor. Matthew McGranaghan from the Department of Geography, University of Hawaii-Manoa will head up this column, soliciting views and opinions on current issues from various cartographers and geo-visualization folk. Melissa Lamont from the Woods Hole Oceanographic Institution will continue as Map Library Bulletin Board Editor. The remainder of the Editorial Board include Carolyn Weiss,

Geography Division of Statistics Canada; John Krygier, Department of Geology and Geography, Ohio Wesleyan University; Aileen Buckley, Department of Geography, University of Oregon; Gary Allen, Department of Psychology, University of South Carolina; Margaret Pearce, Department of Geography, Humboldt State University; Jeremy Crampton, Department of Anthropology and Geography, Georgia State University; Sara Fabrikant, Department of Geography, University of California Santa Barbara; Robert Lloyd, Department of Geography, University of South Carolina; Elizabeth Nelson, Department of Geography, University of North Carolina-Greensboro; Michael Peterson, Department of Geography and Geology, University of Nebraska-Omaha; Janet Mersey, Department of Geography, University of Guelph; Kenneth Foote, Department of Geography, University of Colorado; Patricia Gilmartin, Department of Geography, University of South Carolina; and Matthew McGranaghan, Department of Geography, University

of Hawaii. I want to thank all of these people for agreeing to help move CP forward. I look forward to working with them over the next few years.

Lastly, no journal can prosper without solid manuscript submissions. I want to encourage you to consider CP as an outlet for your work. The editorial board has set as it's goal to have papers reviewed and returned to the authors within two months of receipt by the editor. This is a lofty goal, one which I am beginning to see become common practice. This is a good sign for CP, and for the authors of the manuscripts. I am excited to be editor of CP for the next three years, and to be working with the above cast of talented people. If you have ideas or suggestions for the editorial board to consider, please send them my way, or give me a call.

Warmest Regards,

Scott Freundschuh