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cartographic perspectives

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in this issue

Letter from the Editor

Does size matter? This question occurred to me again at a business meeting of the Austrian Cartographic Society in May of 1999. The meeting was within walking distance of the Technical University's Department of Cartography and Reproduction Techniques where I was serving as a visiting Fulbright Professor for the spring semester at the invitation of its director, Prof. Fritz Kelnhofer. The meeting room was in an older building in the center of Vienna that now houses the East European Studies Institute on the upper floor. I later learned that Beethoven had given private concerts to the family that lived there but he was required to use the servant's staircase to reach the living quarters. I used the main stairway.

Cartography is taken seriously in Austria, a country of only 8 million people. Both the Technical University and the University of Vienna have well-established

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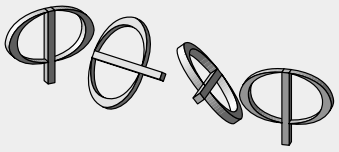
about the cover



The cover design was created by Lou Cross. Lou is a cartographer and graphic artist with the Florida Resources and Environmental Analysis Center at The Florida State University.

The images used include digital photography taken at the Symposium on Maps and the Internet and a map generated through Cichlid visualization software.

The Cichlid software supports vertex/edge graphs, useful for modeling things like networks. The graphic used in this cover depicts the logical layout of the Internet's vBNS (Backbone Network Service). Cichlid is written and maintained by the National Laboratory for Applied Network Research (NLANR)'s Measurement & Operations Analysis Team (MOAT), located at the San Diego Supercomputer Center (SDSC).

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(letter from the editor continued)

cartographic programs, the latter within the Department of Geography. There is a considerable national pride in the products of Austrian cartography, both past and present. The Technical University is working on another in a series of national atlases and the East European Studies Institute was completing its own atlas. The maps displayed on the walls around the room were from this atlas and depicted various social and economic variables for the Balkan countries.

The meeting room was full and I found one of the last chairs in the back of the room. The topic of the meeting centered on various business matters affecting the organization and other items in the news. I began to examine the maps from the atlas that were displayed around the room as discussion turned to the NATO bombing of the Chinese embassy in Belgrade, Yugoslavia, and an article that placed the blame on cartographers in the United States. This was further evidence, it was pointed out, of the decline of cartography in North America. The various thematic maps on the walls were large enough so that I could see the broad patterns that they depicted from a distance. I started to think of ways in which the distributions could be conveyed with interaction and animation in a smaller format, such as on the screen of a computer. The user would be able to select maps at different scales and view distributions side-by-side or as an animation. Each map wouldn't be as large or as detailed as those on the walls around me but, in total, the interactive and animated presentation would convey information in a more engaging way. The result would be a better cartographic product.

I also realized that this would be the last time that I would ever see these maps. They were so large that I could not think of taking a copy of the atlas with me. The distribution of the atlas was limited by the medium. The atlas would only be viewed by a small number of people. That was unfortunate because the maps depicted interesting cultural, social, and economic patterns that would be of interest to many people.

I had the opportunity to discuss my observations with Prof. Kelnhofer and others in the following weeks. I talked of a shift in the medium of cartography, from paper to computer, and what this meant to the way in which maps are distributed and used. I saw it as a change similar to a paradigm shift in science in which totally new underlying principles and methods of research are adopted. I argued that we don't understand the influence of the medium, either paper or computer, on how we present and convey spatial information. Most of all, we know too little about how to present maps through an interactive medium.

Kelnhofer concluded that "we live in different worlds" and indeed we do. The difference, though, is not in technology. The computer resources at the institute would be the envy of any academic cartographer in North America. The equipment consisted of three Intergraph workstations, a large-format ink-jet printer, a complete darkroom facility with a Barco scanner / imagesetter, a lab with ten PCs and a video-display device for instruction, and a LINUX-based web and mail server. Nor is the difference based on human resources. The institute employs a total of ten people, four of whom teach courses on a regular basis. I cannot think of a comparable cartographic institute in all of North America, nor one that could create the atlas-quality maps that were being made there.

The different worlds are our choice of medium. I think of the computer and the World Wide Web as a medium with its potential for the display of maps with interaction and animation. I also see it as a way to distribute maps that can be printed far away from where they are created, either on smaller format printers or larger printers at centrally-located sites. Prof. Kelnhofer's medium is large format paper with high resolution output. In fact, I would often catch him using a magnifying glass to inspect the latest products of the institute. We were like two artists, one working in the medium of clay and the other in oil.

What do two such artists have in common? What can they talk about?

What they talk about, of course, is the advantage of each medium for conveying information. The map on paper is more portable, has a higher resolution and can be larger. No, the map on paper is less portable than map distribution through the web because there is a limit to how many maps you can carry with you, and maps on paper do not offer the advantages of interaction and animation. And so it goes.

So, does size matter? Size, of course, is just the latest argument against the use of computers for the display of maps. It used to be that computers could not be used to produce maps on paper because they could not draw lines well enough or could not produce shadings with the proper gradations. In essence, the computer could not produce an acceptable cartographic product. OK, so now it can. But, the computer monitor is still an unacceptable form of display because, well because, it's too small and we cannot convey broad geographic patterns in a small area. Besides, it doesn't have the fine resolution of maps on paper. And so it goes.

I have a sign on my office door that says: "If it's not on the web, it's not!". The statement tries to convey that even if something is real, if people can't see or experience it, in a very real sense, it doesn't exist. To millions of people, those maps of eastern Europe and Austria, although beautifully done, are inaccessible and therefore not real. They don't exist. So, the argument is reduced to a choice of size or existence. Either we make big, beautiful maps that don't exist (to large numbers of people) or a small maps that do. To be or not to be? I'll take existence.

Michael P. Peterson