

tions of the network paradigm," the "myth of electronic democracy," and the "supposed role of 'shared spaces' . . . in the development of electronic altruism" that sounds cautionary notes especially close to home as librarians prepare despatialized collections for decorporalized constituencies in times when the new communities thus created will increasingly have to pay the Internet piper.

Mantovani's tone is not so energetically critical as is, for example, Neil Postman's in *Technology* or Gorman and Crawford's in *Future Libraries*. His argument, however, reminds readers of what we already know so well, namely, that the technologies we make, make us in turn; that what we make has unpredictable consequences; that no tool is inherently purposeful but, rather, takes its purposes from the field of social values; and that technologies are social and therefore political projects. Technological tools, such as personal identity, develop in engagement with an environment already conditioned by the political and social projects of people. Thus, as knowledge for Mantovani is not simply processed information, so, too, are technologies not neutral forces for progress; rather, their "cultural dimensions" require that we ask the political questions about who uses them and to what ends.

The cover blurb promises a "startling" book. To those, however, who have followed, especially through the cultural studies movement, the post-sixties development of (Continental) social/cultural theory on problems of agency, structure, subjectivity, discourse, language, power, ideology, and the every day or, for that matter, those who attend to the world around them, none of this will come as anything new, let alone startling. Readers will find the summaries in the short introduction and conclusion useful, as they will the discussion of the sociopolitical imbrications of technology; but gaining instruction from the whole may

depend not only on their reading or powers of observation but also on how they like their (virtual?) reality—in the form of the novel or social psychology, or in the imitation of fiction or description of science. That the author's most vivid evidence in part one derives from works of literature or anecdotes of student life and that he proposes to ontologize virtual reality as fiction remind me of Aristotle's assertion that poetry (roughly, literature) is more philosophical and serious than history because it is more universal. I might venture the corollary that literature, on these counts, shows itself superior to social psychology as well.—Robert Kieft, *Haverford College, Haverford, Pennsylvania*.

**Miller, Steven E.** *Civilizing Cyberspace: Policy, Power, and the Information Superhighway*. New York: ACM Pr., 1996. 413p. \$24.95. (ISBN 0-201-84760-4.) LC 95-7270.

This has been a good year for public debate about the information superhighway. Dullish topics such as telecommunications technology, regulation and licensing of public utilities, antitrust, copyright, and patent law have penetrated the consciousness of the average person, the media, and possibly even some legislators. Along with perennially exciting problems of censorship and privacy and the politics of the Supreme Court and the 104th Congress, they make an exciting agenda for democratic discussion. Steven E. Miller is one of those rare people who combine detailed knowledge of both the technical and the political sides of these issues. He has been a community organizer, editor of *Lotus Magazine*, science commentator for the TV show *One Norway Street*, and member of the national board of Computer Professionals for Social Responsibility. In *Civilizing Cyberspace*, Miller offers a valuable overview aimed at knowledgeable citizens and policymakers. "Question and Answer" sessions with experts (scien-

tists, librarians, journalists, etc.) conclude each chapter, creating a chorus of voices.

The book's title evokes the currently popular notion of "civic space," a realm of public activity apart from church, state, and commerce that is indispensable to flourishing democratic communities. Miller hopes that the information superhighway can sustain and even enhance this "civility." Because it originated in government-sponsored research and university settings, the Internet developed as a "self-governing voluntary association that creates its own rules through an evolutionary consensus-building process." But "now the organization paying the piper is calling for a change of tune." To achieve deficit reduction, the Clinton administration has decided that its much-touted National Information Infrastructure (NII) will be built by the private sector in a market context. Miller fears that undiluted market forces will turn the information superhighway into a commercial wasteland—and a dangerous one at that. He takes the reader on a tour of alternative possibilities in chapters devoted to network infrastructure and organization, communications policy, industry patterns and strategies, funding, free speech, privacy and security, and economic development.

For example, Miller supports universal access to the information superhighway via a "broadband telecommunications platform that supports two-way multimedia applications." But commercial suppliers may settle for one-way or only minimally two-way communication channels, which would be cheaper to build and adequate for profitable entertainment and shopping services. Capsule histories of the rail, television, telephone, and cable industries provide a number of cautionary tales and lessons. Miller convincingly argues that the information superhighway must be a common carrier (like telephone and postal service and unlike broadcasting) in order to ensure that all voices and points of view can be heard. But the market encourages vertical integration, with joint ownership of both communication channels and programming. Space for noncommercial, public-access channels has been shrinking.

Another strong section deals with privacy issues, including data security, accuracy, and encryption. Here, Miller, with his unusually broad knowledge of policy trends, is able to compare weak U.S. policies with the much more stringent safeguards in force in European countries. Also useful are his clear discussions of the privatization of government information and of intellectual property rights in an electronic environment. Sections on "Community, Diversity, and Citizenship" and "Citizen Action" are less incisive.

*Civilizing Cyberspace* is a good book that all libraries should have in their collections, but it could have been better. Herbert Hoover was not president in 1924, and the inventor of the panopticon was Jeremy Bentham, not Benthon. But these are minor errors. More serious is that incomplete source documentation prevents the reader from evaluating inferences drawn from research studies and reports. I also find that the attempt to allow readers to either read each chapter in order or "jump around among topics that sound interesting" (Miller calls it

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"random access") produces a weak, repetitive organizational structure that works against the narrative, analytic, and polemical thrust of Miller's work. Perhaps his background as a columnist and broadcaster has conditioned him to break his material down into small chunks. And although Miller's sweetly reasonable voice contributes to the civilized tone of his book, it may not inspire the vociferous public response that he recommends. Strange as it may sound, *Civilizing Cyberspace* could have used a little more rhetoric.—*Jean Alexander, Northwestern University, Evanston, Illinois.*

*The Unpredictable Certainty: Information Infrastructure through 2000.* Prepared by the NII 2000 Steering Committee; the Computer Science and Telecommunications Board; the Commission on Physical Sciences, Mathematics and Applications; and the National Research Council. Washington, D.C.: National Academy Pr., 1996. 281p. \$24.95. (ISBN 0-309-05432-X.) LC 96-67383.

This report represents the thinking of members of business, industry, academia, and government. It synthesizes the discussion and papers produced at a workshop in January 1995 and a forum in the spring of 1995 in Washington, D.C. These meetings were organized by a steering committee of the Information Infrastructure Task Force, acting under the direction of the Computer Science and Telecommunications Board of the National Research Council.

The mandate for the steering committee was "to access medium-term deployment of facilities and services to advance the nation's information infrastructure." The project NII 2000 sought the perspectives of providers of information and producers of facilities as well as the views of user groups.

At the beginning of the report, there is a poem by Antonio Machado, which reads:

"wanderers, your footsteps are the road, and nothing more; wanderer, there is no road, the road is made by walking."

Appropriately, these lines sum up the general outlook of those engaged in the project. In the report, there is no vision, no road, only the rarely questioned premise that private decision-making—markets—will somehow or other, sometime or other, lead to satisfactory outcomes. Desirable social outcomes hardly come into it. Technology is endorsed, not scrutinized. Its adoption is the report's "certainty." The unpredictability arises because potential individual users of the technology may be unwilling to assume their assigned roles.

And well they might, given that there is no good reason offered to indicate that people want some, or any, of the services being thrown at them. "What will the consumer really want to do with the interactive services, and how much is he willing to pay?" asks one participant.

But this uncertainty is not determining because, as the report makes clear, "business users will drive the development of information infrastructure." Yet, herein lies the contradiction that haunts the entire project. What disturbingly (to the report's authors) cannot be exorcised are the origins of what currently underpins the information infrastructure—the Internet. In the report's careful words, "It [the Internet] was built to one set of economic principles and is in transition to another set of economic principles . . ." [reviewer's emphasis].

Again, quoting the report, the Internet was constructed "according to a social benefit model." Now it is in transition to a commercial standard. Unsurprisingly, "financing for Internet access in research, education, and libraries continues to be a source of uncertainty and concern. . . ."

Project 2000's participants, working with a market frame for analysis, reject