

flamboyant image." He also argues that librarians attain professional authority through their control of "a bureaucratic organization having the power to distribute a public good." The professional model often touted as an alternative—that of the physician as solo practitioner—is actually anachronistic; even physicians now operate within bureaucracies.

The disadvantage of Birdsall's adversarial rhetorical strategy is that the two library myths seem to be running on separate tracks that never intersect. The library universe cannot be as Manichean as Birdsall paints it. If it were, how could the two visions ever be reconciled? (For reconciliation there must be, if historic library values are to be preserved.) If the electronic library is such a monster, how can it be contained by a physical building, as in Birdsall's recommendation that "the ritual library as place incorporate the transmissional electronic library."

Birdsall does not deal directly with academic libraries, except to note that they have been moving increasingly closer on the continuum to the special library model. It would have been more interesting, perhaps, to ask whether academic and school libraries have ruling myths of their own. In any case, the issues raised in this book can be transposed readily to an academic context. The academic library's function as place and institution, the academic librarian's role as teacher and guide, have no necessary place within the electronic library. Technology will not provide for them. Only humans can do that.—*Jean Alexander, Northwestern University, Evanston, Illinois.*

Mitcham, Carl. *Thinking through Technology: The Path between Engineering and Philosophy.* Chicago: Univ. of Chicago Pr., 1994. 397 p. \$47.50 cloth (ISBN 0-226-53196-1), \$17.95 paper (ISBN 0-226-53198-8).

Mitcham writes that as a student he was attracted to the idea that the distinguishing characteristic of our time was not so much modern science as modern technology. This is not startling if technology is taken, as it very often is, to be

simply applied science; then it just means that applied science overshadows pure science. It has real force only if technology is seen to be an independent realm of activity that makes use of science when it can and otherwise works on its own. This is how Mitcham understands it. The issue is an important one that ought to interest librarians and information scientists and others involved with information technology. It makes a difference how one thinks of one's work and its goals and criteria of evaluation whether one is oriented toward a model of scientific practice or toward one of technological practice. It may have made a difference that people once thought there was or ought to be a "library science," or that information system designers thought of themselves as information scientists rather than as information engineers.

The science-technology relationship can be explored in many ways; Mitcham set himself the task of discovering what there was in the literature of philosophy that was of relevance to serious reflection on technology. He published bibliographies and anthologies as preparation for what he now offers—a critical introduction to the philosophy of technology. It falls roughly into two parts, one a historical review of relevant literature, the other an analytic exploration of four aspects of technology: as artifact, as activity, as knowledge, and as volition.

The historical review is dominated by a distinction between two supposedly opposed traditions: engineering philosophy of technology and humanities philosophy of technology. The engineering approach is analysis of technology from within. The humanities approach is interpretation from the outside, from the vantage point of religion, poetry, or philosophy (i.e., not just philosophers—Lewis Mumford and Jacques Ellul are prominent exemplars of the humanities approach). The engineering approach tends to be enthusiastically pro-technology; the humanities approach tends to be suspicious and critical. Mitcham quite pointlessly fusses over which of the two approaches is superior (inside and out-

side views are complementary), but decides in favor of the humanities approach. The whole review is a bit disappointing, though this is not Mitcham's fault. While one might have thought that philosophers would have had a lot to say about technology and its relation to science and human life in general, with a very few exceptions (Heidegger, most importantly) they have not; they have simply left the issue in the dark, perhaps assuming that technology raised no interesting issues or none that philosophical reflection on science did not adequately illuminate. (The 1967 *Encyclopedia of Philosophy* has no index entries for "Technology" or "Philosophy of Technology.") Contemporary philosophers find plenty of problems of applied ethics involving technology, but Mitcham prefers to avoid ethical questions in this introduction. So while this is a very scholarly work with a strong international emphasis, with forty-nine pages of notes and a thirty-two-page annotated bibliography, the historical part of Mitcham's book is unavoidably rather thin. It is ironic that while he argues for the superiority of the humanities approach, he then goes on in the second part of the book to produce quite vigorous examples of analysis of technology from the inside: analyzing "what engineers know and how they know it" (the title of a fine book by Walter G. Vincenti published in 1990), what they produce (for Mitcham, technology is primarily the production and use of artifacts, where others would see it as encompassing technique in general), what is most characteristic of their activity (design).

The fourth section of the analytical part of the book, on technology as "volition," does not fit in well with its neighbors. Though Mitcham apologizes for his analyses ("the perhaps clumsy and bookish analysis of technical texts . . ." chapters that "intentionally wallow in the details of engineering texts"), these analyses are exactly the kind of thing one needs if one wants to get clear about the relations between science and technology. Mitcham's deference to the humanities leads him to undervalue his own

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contribution. This is an introduction to what he recognizes to be an underdeveloped field; it is also a very conservative introduction. For example, it ends with sketches of three attitudes toward technology, "ancient skepticism," "enlightenment optimism," and "romantic uneasiness." No hint of anything post-modern here. And while Mitcham is head of the Science, Technology, and Society Program at Pennsylvania State University, there is not much society in this book, nor much attention to sociotechnical systems, nor to the material and social infrastructure that technologies create and in which our lives are embedded. (Concentration on technology as production and use of individual artifacts makes it easier to neglect sociotechnical systems.) For that we may have to look to some new field of technology studies. Nevertheless, Mitcham's book can be a useful starting point for a newcomer to the questions concerning technology.—Patrick Wilson, University of California, Berkeley.

Branscomb, Anne W. *Who Owns Information? From Privacy to Public Access.* New York: Basic, 1994. 241p. \$25 (ISBN 0-465-09175-X).

Anne Wells Branscomb, a legal scholar-in-residence at the Harvard Program on Information Resources Policy, is an expert on high-tech intellectual property. In *Who Owns Information? From Privacy to Public Access*, she authoritatively discusses how "electronic-mediated information" has been dealt with in "three areas of the law—First Amendment rights, intellectual property rights, and privacy rights," with the thrust of the analysis on the second area. Though unmentioned in the title or subtitle, Branscomb's primary focus is on computers and digital information. She makes no claim to survey this expanding field exhaustively; for example, she mentions music only in passing and architects' blueprints not at all.

The bulk of the book consists of choppy microchapters on topics or cases involving different kinds of personal information and the video and computer

industries. In each the author jumps into the subject *in medias res* with a dramatized narrative to particularize the issue. The astute reader learns to jump over the journalese to the analytical background that sets forth the pertinent considerations at play in the illustrative case. This inconsistent treatment, along with the gee-whiz introduction to such high-tech entities as "electronic laser beams" or telemarketers' "800 WATS lines," makes for a schizophrenic work that cannot make up its mind whether to address the technical legal/computer questions or to appeal to an impressionable wider audience.

Branscomb does not limit herself strictly to digital data; the most cohesive chapter—on the Dead Sea Scrolls—involves computers only peripherally, as she acknowledges. This chapter—said to be on "religious information" but dealing more centrally with the control and sharing of scholarly data and knowledge—touches on issues of plagiarism; this term is absent from her text, but the problems she discusses relate to analogous conflicts (unmentioned here) that are besetting other fields of scholarship. Similarly, Branscomb does not acknowledge that the Reagan administration's restrictive information policy was not limited to electronic media, as any ALA member would well know. Her occasional discussion of nondigital information makes it difficult to understand why she does not make similar connections in other cases.

Despite the intermittent dumbing-down of the prose, Branscomb presents a series of serviceable state-of-the-question surveys. The references to the literature seem, with the possible exception of the chapter on the Dead Sea Scrolls, mostly limited to what can be found on Lexis/Nexis: largely, the extremes of case law and articles in the popular press. The reader's confidence in her scholarship is a little shaken, however, when *Fantasia* video sales are documented, not as would be expected by a reference to a trade journal, but to one of those anthology news summaries that pop up in Nexis keyword searches. In this instance concerning *Fantasia*, a cita-