

Journal of the American Society for Information Science

J A S I S

VOLUME 47

NUMBER 3

MARCH 1996

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stage and the user can accurately specify information needs. The final stage, Search Closure, brings the search for information to an end and begins preparation for presenting the information discovered. Not surprisingly, feelings of relief are common, along with a sense of satisfaction if things have gone well, and disappointment if they have not.

The identification of these six stages provides the foundation for what Kuhlthau describes as "a proposal for an emerging theory of intervention" (110) to be used by information professionals in assisting with the research process.

"The Uncertainty Principle" forms the basis for this proposal and is defined as follows: "Uncertainty is a cognitive state that commonly causes affective symptoms of anxiety and lack of confidence. Uncertainty and anxiety can be expected in the early stages of the Information Search Process. The affective symptoms of uncertainty, confusion, and frustration are associated with vague, unclear thoughts about a topic or question. As knowledge states shift to more clearly focused thoughts, a parallel shift occurs in feelings of increased confidence. Uncertainty due to a lack of understanding, a gap in meaning, or a limited construct initiates the process of information seeking" (111).

You say you already knew that? Probably so, but Kuhlthau goes on to suggest that students should also know it. They should be told at the beginning of the research process to expect confusion and frustration, and accept these feelings as a normal part of research procedure. In addition, information providers need to maintain an awareness of the uncertainty principle so they can be effective mediators in their patrons' search for information.

To that end, five levels of mediation were suggested as appropriate intervention strategies for librarians. These included: (1) Organizer, (2) Locator, (3) Identifier, (4) Advisor, and (5) Counselor. Each one of these strategies is effective at different steps along the way in the research process. Accurate identification of the six stages of research allows effective intervention with a research problem because the librarian can then select the most appropriate type of mediator role for each situation.

With this in mind, the author then goes on to suggest that the continued use of technology will require even more mediation by librarians as they must explain how to use the overwhelming amount of information now available to most students. Unfortunately, there is no explanation of how librarians will find extra pieces of the day for the time-consuming role of counselor, but the author does an admirable job of emphasizing the need for this type of service. She concludes by stressing that information professionals need to place a new emphasis on the process of learning from information access, rather than focusing solely on the retrieval of information.

Although it reads like a doctoral thesis, this book would be an excellent addition to the collection of any librarian or teacher involved with the research paper process. Admittedly, this is not a comprehensive look at all the ramifications of the topic, but the author makes no such claim. In fact, she seems to regard her efforts as a first step and encourages others to take up the cause and continue looking at the myriad implications suggested by her preliminary work.

Some might argue the need for what appears, at first glance, another typical user study. However, the emphasis here is on the user's learning process while doing research, and how it impacts the research process. This gives the book a different perspective, one that could prove beneficial to almost anyone involved with the reference function.

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The Information Society: A Study of Continuity and Change.
John Feather. London: Library Association Publishing, Inc.; 1994: 168 pp. Price: \$35.00. (ISBN 1-85604-058-5.)

Though the title of John Feather's book is *The Information Society: A Study of Continuity and Change*, it is neither a research-based study (in the sense of presenting new findings) nor a comprehensive analysis of current thinking about social changes going under the rubric of "the information society." Instead, it briefly describes the evolution and current state of various information technologies (especially documentary media), their economics, and the legal structures pertaining to them. The book is clearly aimed at a generalist audience, perhaps librarians wishing to learn about new technologies or other interested professionals needing a condensed review of the legal and economic effects of information technologies.

Feather proceeds from a couple of implicit assumptions. First, he takes the technologically deterministic view that information and communication technologies are themselves responsible for the changes he observes: ". . . the computer is driving the revolution of the late twentieth century" (p. 2); "These tools are the building blocks of the information society" (p. 4). In this respect, this book is typical of much of the information society "genre" of writing, which often neglects the cultural, political, relational and personal choices that individuals make in the process of employing technology, in order to maintain the "value-free" image of technology and its builders and users: Technology drives society, not the reverse.

The second assumption of Feather's work is the primacy of documentary technologies, i.e., those which record and distribute information for large markets, rather than those that support "oral" or "conversational" forms of interaction and communication. He calls publishing—specifically, book publishing—the "paradigm of information transfer" (p. 36) for all other information technologies that have followed it. This assertion is questionable on several grounds; for example, historically book publishing has not been organized along the same monopolistic or oligopolistic lines as broadcasting, film, or the telephone system, at least until recently. And unlike other media, publishing has enjoyed exceptional legal protection in the form of the First Amendment in the U.S. However, Feather's emphasis on documentary media does reflect the conventional perspective of librarianship, and on this basis relates his points to a familiar framework for his readers.

Feather spends two chapters out of seven describing the history of media, beginning with the innovation of the alphabet and written language. Consistent with the assumptions mentioned above, documentary technologies (especially print) are given the most extensive treatment, though he does admit that "Even at the height of its domination, print never displaced the spoken word as the most common means of human communication and information transfer" (p. 24). Interactive technologies like the telephone and electronic mail are given far shorter shrift. He glosses the demonstrated interpersonal power of e-mail and listserver-type services and suggests that their real value will only be realized by imposing editorial control to make them more like conventional documentation: "In a sense, they have added a new dimension to the dissemination and communication of information. It is, however, possible to make them both more formal and more limited in their applications, by controlling input and by limiting the capacity of recipients to respond. The system which best explains this model of usage is that of the *electronic journal*. . ." (emphasis in the original) (p. 73). Feather also refers to television as the "last and greatest of the mass media" (p. 30) but does not make a strong case demonstrating whether or how television followed the publishing paradigm.

Two chapters each are devoted to the economics and poli-

tics of information technologies, respectively. Overall the author seems to take an economically as well as technologically deterministic view, and advocates the commodification and market model for the distribution of information. "At the heart of the creative process lies a commercial transaction without which the results of the author's creativity cannot be shared with an audience" (p. 41). He does not seem to recognize that the market model is not inevitable, but a culturally-constructed agreement among members of a society about the appropriateness and value of certain forms of interaction and relationship. Instead, Feather adopts a pragmatic stance: "The chain of communication from author to reader is informed and *determined at every stage by commercial considerations*" (emphasis added) (p. 44).

His pragmatism allows Feather to marginalize librarians' ethical concerns about access to information. "Outside the institution of the library, information providers have few of the inhibitions which have traditionally made librarians look askance at such matters" (p. 6). He does not acknowledge that librarians and other information professionals have a clearly articulated ethical position regarding access, and do not merely have "inhibitions." He reiterates (p. 60), "The new competitors in the information marketplace do not share, or perhaps even understand, the benevolent desire to inform which is the common heritage of the traditional information providers, the librarians"—nor does Feather suggest that the "benevolent desire" has any grounding in political or economic considerations.

Feather sees information inequity as the principal political issue associated with the use of new technologies, but warns that observers must ". . . be careful not to equate information wealth and information poverty with particular kinds of information supplied through particular media or institutions" (p. 90). He notes that different people in various social contexts have different kinds of information needs and sources of knowledge, not all of which are necessarily adaptable to electronic forms.

However, he points out that information wealth has ordinarily been associated with economic wealth in developed nations, and links differential access to global networks with differential levels of national development (though he also argues that access to information networks may make countries information rich at the national level while information poverty persists on the local or individual level). In developed countries, he believes, there is no real problem with access. Rather, in those places the problem lies with the kind of content carried by these accessible channels. Therefore, "Ignorance is deliberate, a result of exercising a choice not to know. The means of remedying the ignorance are, however, at hand; the problem is lack of information, not lack of access" (p. 99).

At the same time, Feather seems to contradict himself: He stresses that new technologies present a paradox, making information both more available but also restricting its access. He leaves the impression (primarily via the passive voice of the text) that this situation is an inevitable consequence of the nature of the technologies themselves, rather than the result of deliberate decisions by individuals which affect how technologies are implemented and used. He tends to treat computerization as a development which simply "emanated" without active agency on anyone's part. In the end, his views about whether an "information society" exists are mixed and take the form of a three-page "Afterword."

To summarize, Feather states clearly that the book is aimed at the beginning librarian rather than the specialist. Specialists will not find much new material presented here. Feather does not cite sources in the text, and instead provides a short list for further reading at the end of the book. The text contains occasionally confusing or contradictory arguments due to a de-

terministic approach, and adopts the ideology of commoditization largely without question. However, the book is a readable and clear synopsis of many of the issues related to the use of information technologies, even if it does not succeed as a summary statement about the "information society." It may serve as a useful introduction for those who are unfamiliar with this complex and multi-layered set of problems.

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The Cult of Information: A Neo-Luddite Treatise on High-Tech, Artificial Intelligence, and the True Art of Thinking, 2nd Ed. Theodore Roszak. Berkeley, CA: University of California Press; 1994: 270 pp. Price: \$10.00. (ISBN 0-520-08584-1.)

As if we didn't have enough with which to concern ourselves—disease, the economy, and terrorism, *The Cult of Information* tosses one more log on the fire: Technology. Yes, it seems as if society's acceptance of the computer as a tool for enhancing access to information, among myriad other uses, may well lead to the end of the civilized world. Humanity will no doubt fall victim to the inherent evils of technology and those who control it. This idea constitutes an interesting and quite popular premise for a book, one which Roszak employs continually in *The Cult of Information*.

Granted, the societal implications of the Information Age are many. Not a notion to be taken lightly, few could deny that there are a plethora of social and moral implications with which one must deal when technological advances are merged into every aspect of life. And it is difficult to disagree with the idea that machines cannot function in the same fashion as the human mind. Roszak himself professes an admiration for the technology and insists that this work, as well as the first edition, is merely "measured criticisms" that will be completely agreeable to "serious students" who maintain a "reasonably balanced view." After offering this explanation, Roszak abandons his self-professed moderation and plunges head first into an assault on our "object of veneration," the computer.

After establishing a powerful point, the "mind has never been dependent on machines to reach the peak of ideas," Roszak begins to employ a multitude of examples of technology at its worst. With the exception of a handful of extremists, few could disagree with the dangers so clearly demonstrated by the author. Unfortunately, he chooses to use these extremists to depict the evils of a world with computers and consequently, his arguments, if not examined closely, seem quite logical.

Oddly enough, Roszak readily admits to having written *The Cult of Information* on a word processor and performed his research using on-line databases. But he fears that the computer will not be kept in its proper place, and continually warns of the dangers if we allow it to infiltrate our lives. Invasion of privacy, over reliance on polling, relinquishing military decision making, corruption of education and our children, and economic ruin, all are lurking just around the corner if we fail to heed his advice.

Those who predicted the popularity and power of computing, "the hackers and the hucksters," are the very individuals of whom we should all be wary. Their failed attempt at creating