

gument. She describes the emergence of bibliographic instruction as a distinct professional activity that has transformed the way that college and university librarians define their roles. Despite the large number of students and librarians who are involved in BI, school administrations often fail to understand the role of the librarian in instruction. The author's argument, that libraries do not function as the "heart of the university," also involves the roles played by library directors. Most directors are not involved in campus decisions on information technology; no do they participate at the highest levels of the university's administration.

Grimes presents concepts of centrality through an examination of organizational theory and through studies on resource allocation and retrenchment. In an attempt to find out what chief academic and executive officers think of library centrality, the author conducted a survey of five universities. She describes the universities and discusses their leaders' responses. The results of the survey show that most administrators believe that the metaphor of the library as the "the heart of the university" is an exaggeration. They emphasized that library centrality can only be based on the library's contributions to the university's mission of teaching and research, as well as its national recognition or ranking.

The strength of Grimes's analysis is in her use of powerful theoretical and historical models to analyze higher education. Although she admits that there are weaknesses in the use of grounded theory methodology, she uses it successfully to generate conceptual categories from facts. Grimes has been very successful in identifying concepts and theories that reflect views of academic library centrality in actual library experience. *Academic Library Centrality* contains a wealth of references for those interested in pursuing this topic in greater detail. It is highly recommended to library administrators who hope to achieve library centrality at their own institutions.—*Constantia Constantinou, Iona College, New Rochelle, NY.*

Kilgour, Frederick G. *The Evolution of the Book*. New York and Oxford: Oxford Univ. Pr., 1998. 180p. \$35, alk. paper (ISBN: 0-19-511859-6). LC 97-14430.

The advent of electronic communication has triggered a boom in studies on the history and future of "the book." For much of the 1990s, it has been one of the major growth areas in humanities scholarship, invading disciplines and posing new questions of old material. "The book" has become code for anything and everything involved in the creation, production, dissemination, and reception of texts: authors authoring, scribes scribbling, printers printing, booksellers selling, readers reading. We have a veritable armada of monographs and articles on "the book" confronting us, much of it sensitive to new types of evidence appropriate for new questions and issues.

That being said, the appearance of a new monograph on "the evolution of the book" would seem to require some compelling justification. Professor Kilgour believes he has precisely that: "Through historical analysis of the societal needs that have invoked the transformations of the book, and the technologies that have shaped them, *The Evolution of the Book* aims to shed light on the present emergence of the electronic book." He finds his light in technology, and his monograph is a compact summary of successive technologies of nonverbal communication from the Sumerians to the present. His argument is, baldly put, that every improvement in the technology of the book has resulted in the speedier production and dissemination of knowledge and information. The problem is that neither the focus nor the argument has anything especially helpful to offer by way of a compass for the present.

Reducing the history of the book to a history of technology conveniently ignores the wealth of social, cultural, and economic evidence we now have available on the topic. Moreover, Kilgour's "bullet train" approach to the history of book technologies is an odd reprise of a style of history writing that I had thought

long gone. If anyone is anxious about the demise of the idea of progress, relief may be found in this volume, which enthusiastically catalogues the march of technological progress across the millennia. In Kilgour's narrative, the past ineluctably results in the present and points confidently to the future. This is an engineer's view of history—neat, clear, and linear, the story of successive successes.

Kilgour divides his story into seven "punctuations"—seven moments of "punctuated equilibria" when the status quo is suddenly interrupted and reoriented, when *longue durée* meets the spasm of innovation. These punctuations begin with the introduction of the clay tablets of remote antiquity and culminate in the "electronic book." Although he does not tell us how he arrived at seven such periods (a number beloved of cabalists, apocalyptics, and developmental psychologists), Kilgour does refer us to Niles Eldredge and Stephan Jay Gould for the notion of punctuated equilibria. This is an important reference for understanding how Kilgour conceives of the historical process. Eldredge and Gould are, of course, scientists, and their frame of reference is geology—the history of the earth. Although Kilgour is not doing a history of nature, he writes as if he were. Thus, when he uses the word *evolution*, he does so in ways that suggest a natural rather than cultural process. "By the second century A.D. the clay tablet was the

first form of the book to have become extinct." He really seems to believe that he has hit on some immutable process that regulates the course of technological creativity over time.

What is this process? Like the idea of progress, it undergirds, it is straight out of the eighteenth-century Enlightenment. Man encounters problem, man solves problem; man discovers need, man satisfies need. Some examples: "A century and a half after Gutenberg the need for timely information became sufficiently intense to bring newspapers into being." "The need to record and transfer information, a need created largely by the growth of trade, administration, and government in the city-states, gave rise to the invention of writing and the development of the clay tablet." The codex displaced the scroll because of "the obvious savings of money in using both sides of the papyrus, the increased speed in production, and the greater ease in retrieving information from text." This simple utilitarian model of historical process does not differ significantly from that encountered in any number of eighteenth- and nineteenth-century accounts of the progress of mankind.

Ascending through the punctuations, Kilgour gives us potted histories of peoples and civilizations, duly noting their particular "contributions" to the forward movement of history. Thus, the Greeks contribute an alphabet with vowels, parchment, pens, and ink; Islam introduces paper from China; the Middle Ages adds silent reading, subject indexes, and eyeglasses; and so forth, through Gutenberg, the industrial revolution, and the advent of the computer. The evolution of the book turns out to be a catalog of contributions, each of which builds on and improves its predecessors.

Kilgour has had a distinguished career and has contributed much to the evolution of research libraries in the later twentieth century. The problem is that in this book he is not on his own turf. He is not a historian, and the past he offers us is not really history at all (which is messy and defies simple models of rational utility) but, rather, teleology. And like much teleology, this one

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is grounded in a particular theology: the religion of progress. You have to be a member of this particular sect to appreciate whatever light it casts on the present. In the meanwhile, sceptics and agnostics will want to turn elsewhere for history and analysis.—*Michael Ryan, University of Pennsylvania, Philadelphia, PA.*

Naked Science: Anthropological Inquiry into Boundaries, Power, and Knowledge. Ed. Laura Nader. New York: Routledge, 1996. 318p. \$69.95 cloth, alk. paper (ISBN 0415914647); \$22.95 paper (ISBN 0415914655). LC 95-23650.

Nader, professor of anthropology at the University of California, Berkeley, convened a four-part symposium at the American Association for the Advancement of Science (AAAS) meetings in 1991 when she was head of Section H for anthropology. The papers in this edited volume stem from that multidisciplinary symposium, "Anthropology of Science and Scientists," and reflect its concerns: (1) "Is Science Universal?" (2) "The Study of Knowledge Formation and Its Use," (3) "The Behavior of Scientists," and (4) "Science Traditions across Cultures." Nader carefully sets the scene in the introduction, "Anthropological Inquiry into Boundaries, Power and Knowledge," and gracefully closes it with her epilogue, "The Three-Cornered Constellation: Magic, Science and Religion Revisited." The grounding in anthropological history is clear and present, but it does not intrude upon the accessibility of the intervening fourteen chapters, which read equally well as a whole or sampled here and there within the three parts. "Discovering Science" is devoted to ethnosience. It is followed by "Culture, Power, and Context," whose chapters deal with technoscience. The final part, "Conflicting Knowledge Systems," explores areas in which ethnosience and technoscience overlap.

Many conclusions could be drawn from the selections included, but Nader is clear that this is not the intent. Instead, she encourages us to open our "minds to other ways of looking and questioning to change attitudes about knowledge, to reframe the

organization of science—to formulate ways of thinking globally about science traditions." We are given ample opportunities to do this.

The ethnosience articles explore the idea of what constitutes science, from navigation systems in Micronesia to highland Maya ethnomedicine for gastrointestinal diseases, from Canadian James Bay Cree hunting practices to everyday mathematical procedures and concepts about immune systems in this country. The worlds of high-energy physicists, nuclear scientists, and molecular biologists are analyzed in the technoscience portion of the book, providing fascinating glimpses of the Human Genome Project, nuclear tests as ritual, and the position of the various branches of physics in the academic and economic structure of Japan.

Boundaries become more explicit in the third part of the collection where research on local knowledge is brought into juxtaposition with other knowledge systems. Chapters deal with fisheries management in New England, Inuit indigenous knowledge versus Arctic science, and the U.S. surveillance system developed to anticipate Soviet development of an atomic bomb. The last chapter in this section provides an illuminating comparison of the development of the field of primatology in Japan and the West, with implications far beyond the subject matter of the discussion. It is here that we are reminded again of how easy it is to fall into the trap of finding that which we are seeking.

This is a book for which table of contents indexing in library catalogs is so important because each of the chapters is complete unto itself and at a level of specificity quite distinct from "Knowledge, Sociology of" or "Science—Philosophy" or "Power (Social Sciences)." Obviously, these are the realms being considered: it is the generation of knowledge, uncolored by the vestments of science, which we are invited to explore. The usefulness of this lens is that it might enable us to view more clearly the issues involved in the management of knowledge.—*Joan Berman, Humboldt State University, Arcata, CA.*