Cox is arguing that we have much to learn from other professions, the librarian profession in particular. Few would disagree, but too few have taken the message to heart, and the results may not be uniformly positive. This reviewer found Cox not entirely convincing on the connections between archives and public history. The latter remains a poorly defined (I was tempted to say "ersatz") profession, created largely because academic historians found their markets drying up. It had little broad support, and Cox is more sanguine about its ultimate survival than I would be. With our other professional cousins, however, he offers telling insights. Many government and institutional archivists, for example, dismiss rare book librarians as quaint antiquarians. Cox shows how the skills in analytical bibliography cultivated in those collections are appropriate to an expanded view of the archivist's task.

Improved professionalism relies on a defined body of knowledge and on a systematic means of conveying that knowledge to successive professional generations. Cox's view of this is clear, unabashed, and (I may as well say it) correct. In the great debate over whether there is such a thing as archival theory, he minces no words: of course there is. Virtually everything remains to be done to articulate that theory, but only the larger outlook it provides will offer archivists any hope of survival. More substantial archival education, too frequently ad hoc in the United States — and in Canada as well, until recently — must likewise develop. Here as elsewhere, Cox's great skill (and his great contribution) is to propose a "research agenda": what do we *not* know now that we must know if we are to meet the challenges of archives in the future — or, for that matter, in the present? Scoffers who respond "shut up, and just let me process my collection" will probably think this kind of intellectual exercise a waste of time. The sensible among them will reconsider after coming to terms with the sheer scope of Cox's suggestions; the remainder will join Ptolemy among history's discards.

In sum, this is a tremendously important book that deserves wide reading, wide reflection, and wide emulation. The ideas presented are as appropriate today as when the essays were first written: only one chapter, that on the report of the Society of American Archivists' Goals and Priorities Task Force, seemed dated to me. Throughout, the work is based on impressive research and serious thought. In fact, the amount of secondary literature that Cox has read, understood, and woven together is almost frightening in its sweep. If we have indeed entered the "Age of Archival Analysis" (the coinage belongs not to Cox but to a colleague), this book is its opening manifesto. The archival profession will thank its author not merely by praising him, but by responding to the challenges he offers.

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Management of Recorded Information: Converging Disciplines . CYNTHIA DURANCE, comp. Proceedings of the International Council of Archives' Symposium on Current Records, National Archives of Canada, May 15-17, 1989. Munich: K.G. Saur, 1990. 218 p. ISBN 3-598-10897-4.

Two years ago the National Archives of Canada, in cooperation with the Current Records Committee of the International Council of Archives, invited sixteen experts to address issues involved in recording, finding, and using information. More than three

hundred people attended from almost thirty countries. The proceedings are reproduced in this volume.

Given the wide-ranging span of the symposium, little more could be done in the publication than to record what was said in the sequence in which it was delivered. An attempt has been made to establish some kind of workable sequence, from early scene-setting pieces on what information may be and what records are, to problems of storing and using particular recording media, and to issues in records and information management policy. Nevertheless, the reader is left to sample a smorgasbord of experience and opinion, some of it nutritious.

At the outset, Basil Stuart-Stubbs suggested information technology may be dissolving boundaries between information-keeping institutions and between information keepers. He emphasized that the media used to record information has conditioned types of institutions and their keepers. Further, it is the creators of information who largely choose the recording medium, rarely the keepers. Faced with multi-media, much of it in vulnerable state, the keeper is confronted with providing expensive and complex physical storage, technology and access standardization methods, educational challenges for themselves and for information creators, and professional/institutional structural adaptations. He wondered whether the costs of preservation and access will ultimately have to be passed directly to the user of information.

Frank Evans followed with a rapid overview of records-keeping development and cautioned his audience to recognize that records are much more than simply recorded information. Records are basic tools required by public and private institutions and individuals as collective memory, enabling them to function and possess identity — often long after the records creators have gone. He stressed that methods of controlling the existence of records and facilitating access to them are critical matters precisely because records have such a profound significance. Electronic records systems are no exception.

"What is a document?" occupied Ronald Weissman. He portrayed the passing of an old "craft-guild" world where different kinds of information required the skills of various document specialists. Today, information technology research is promoting powerful document processing possibilities by computer. Information resources need to be integrated. Documents on a computer, through converging video and computing technology, contain text, images, graphics, animation, and sound. Weissman admitted that hypermedia systems were a dream come true for the technology researchers and a promising nightmare for the information manager. Documents have ceased to be tangible and information has become "virtual" and transitory, ever being reformulated. Users do not care about media distinctions and will not require archivists and librarians to mediate access to documents. The information science community's role is to bring order, discipline, and a coherent view of information through understanding the multi-media computing environment and designing standards and procedures to manage "this increasing chaos of analysis tools, data, and networks." In discussion with David Bearman, Weissman urged involvement with vendors to explain and demand creation of appropriate control tools.

Bearman took up this and related concerns in his paper on the management of multi-sensory data. He too described the disappearance of stable documentary precepts and

disciplines. Data retrieval rather than documentary exchange had become the object of electronic information networks. Bearman emphasized the need to bring control to "this new cultural reality" and asserted that "the kinds of intellectual approaches that distinguish archivists from other information managers" offer fruit. In an analysis of data control problems, he described how informational content cannot be defined without identification and explanation of the processing environment which controls and produces information. This requirement is right down the street of the archivist who employs "form and function in the description of records, rather than relying upon content analysis (as do most other information management disciplines)." Form allows for describing the kinds of records in a particular process, function makes the connection to the reason for the process. Bearman likened understanding of multi-sensory data to the grasp of "deep cultural rules" such as students of diplomatics seek in study of medieval codicils.

The involvement of archivists at the "front-end" of information creating processes — long an ideal of archivists involved with current records systems — is an undercurrent of the symposium's papers. Claus Granstrom appealed for archivists to be involved in the development of government information policy to be able to have a controlling effect on information technology application. Angelika Menne-Haritz took a more familiar tack in advocating archival insistence on sound classification structures reflecting office functions to ensure adequate information access when records are transferred to archival custody. Ralph Smith, not an archivist, speaking of the challenges presented by geographic information systems which index data by subject, location, and time, saw archivists as information managers at "a data base station on the electronic information highway" connecting current and non-current data records. Elio Lodolini, in contrast, spoke eloquently of the responsibility to retain memories for enabling human beings to keep "leurs propres racines et les valeurs qui constituent la plus importante caractéristique de l'esprit." He did not offer archivists advice on what kind of effective management would support this.

Sam Kula, in some despair at having to either maintain obsolete recording equipment for moving imagery or constantly convert information to new formats, urged archivists to pay more attention to selection strategies. He proposed that once selection had been made, shortly after creation, records ought to be converted to the archival storage medium, assuming that some agreement could be reached on what this wouldbe. He felt optical disc came as close to a "universal moving image storage medium" as had yet been achieved. Maura Mulvihill explained, from the perspective of the National Geographic Society's visual data base, how optical disc technology performed an excellent reference and management tool for photographic imagery. Much time should be spent on structuring the data base before converting to this new storage and retrieval techology.

Kula warned that archivists have trouble agreeing on technical standards. David Bearman made an important distinction between media or data interchange standards required by users of electronic data and "portability" of data, applications, and skills which would make systems "interoperable." The latter was of great interest to archivists in general, though not perhaps to data archivists whom he considered were "not building archives at all but reference files." Helen Wood's paper concentrated on data interchange standards because users are faced with so many differing proprietary systems that impede access to information. She offered an overview of progress made

during the last twenty-five years towards industrial, national, and recently international technology standards for information processing hardware, software, and communications data.

Three British visitors provided perspectives from non-archival points of view. On control of documentation, primarily from government, which is neither published in the traditional sense nor easily covered by the term "government record," David Wood described international attempts to grapple with "grey literature." Wood admitted that the control costs, such as the now defunct electronic archive set up in the U.K. to act as a knowledge warehouse for thirty-five publishers, were high and probably conducive, in some people's view, to information overload. Basil Stuart-Stubbs had wondered if we may see future auto-bumper stickers bearing the information that "Information Kills." Neil McLean examined the relationship between library and information science and publishing. He suggested that information be seen as a saleable commodity and packaged to increase national wealth by private sector market forces. The economics of information had been too little explored "as we tumble from one technology to another." McLean considers that a problem-solving environment (rather than an application environment) will force reappraisal of the role of information professionals. Diana Sangway described, somewhat prosaically, the British government's experience in establishing an information management policy since 1984. Canadians should look no further than the various publications emanating from the federal Treasury Board — they are much more helpful.

An interesting position paper by Kenneth Thibodeau looked at the shortcomings of the much-touted concept of Information Resources Management (IRM), at least as pursued in the American federal government. Thibodeau contended that IRM has become technology fixated and ignores management of records, an absolutely basic and critical function ("I am in business, therefore I need records"). Technology clearly has a major impact on records management but does not address the need for the creation and retention of records. David Bearman agreed by saying that "if IRM were taken seriously, information would be treated in the same manner as financial resources and managers would be fired for not ensuring its proper management."

The symposium's epitaph was probably given by physicist Peter Meincke: "Above all, remember the user," even if information disciplines do not converge. There was indeed some feeling that they were likely to collide. Meincke contributed thoughts on how technology can be managed to serve users of information instead of its own designers. He considered the task of managing change along the spectrum of recorded information to be "Herculean," but inevitable if social benefits were to be maximised. A *sine qua non* is how information is to be intellectually organized. Meincke echoed Stuart-Stubbs' observation that forms of stored information have influenced institutional functions but fell back on library classifications as solutions to access and overlooked David Bearman's form and function access prescription.

Management of Recorded Information is a useful snapshot in time. Ottawa and the International Council of Archives should do it again before the end of the century, ideally with some of the main protagonists, to see what the disciplines look like then.

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