

Counterpoint

Chip Monks at the Gate: The Impact of Technology on Archives, Libraries and the User

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The “monk at the gate” has for some time symbolized the manner in which the monasteries of the early Middle Ages preserved wisdom and knowledge within their walls and, at the same time, through the great ecclesiastical bureaucracies which fed the state administrations of Europe, stood guard over their monopoly of literacy and used it to their advantage in an age of scarce literacy. By contrast, the secular “chip monks” of today control and manipulate the nature and flow of patterned knowledge as a protection against information overload in an age of abundance. But where then in this context, does technology make its impact?

The structure of this paper is based on experimental physicist Ursula Franklin’s 1989 Massey Lectures, *The Real World of Technology*, which extends the field of inquiry far beyond the crafts and machinery of material culture to the systems which are developed to render them viable and productive. In short, technology involves “organization, procedures, symbols, new words, equations, and a mindset.”¹ For the theologian Matthew Fox, wisdom is dying as a consequence of technological systems.

The Enlightenment produced so much knowledge and information that we have found it necessary to invent a multi-billion dollar industry to store it all and retrieve it all on command. Computers are the libraries of such a civilization. But what would it take to store all the wisdom we have accumulated these past three centuries? Where is the wisdom? Wisdom is of Mother Earth, for nature contains the oldest wisdom in the universe. Wisdom requires the right brain as well as the left, for it is berthed by both analysis and synthesis.²

Fox further believes that to speak of wisdom in a university today is a bit like talking of chastity in a brothel.³

This point is also taken up by the cultural historian William Irwin Thompson⁴ and Professor Franklin herself,⁵ who both maintain that the requirements of technological systems impose the utilitarian curricula which are in tune with the job market. In the university we should experience our place in the universe.⁶ In the ways in which we structure our information in archives and libraries, are we playing along with this

technological imperative? Technology can be used for good or ill. It is the systems we build around it which determine this.

Arthur Kroker, in his *Technology and the Canadian Mind*, examines the writings of Marshall McLuhan, Harold Adams Innis, and George Grant.⁷ Kroker sees Canada as lying culturally between Europe with its ancient continuities from guild and craft over against the USA with its drive for transcendent technology as the spearhead of modernity. In his view, Grant saw a lack of morality and vision in this technological dynamo, which also includes technocratic bureaucracies. Innis, on the other hand, saw Canada representing a balance between civilization and power. McLuhan was concerned with the impact of technological media, which include the media of record, on the user: this in the archival context, has been discussed at length elsewhere.⁸ What impact does technology, using Franklin's definition, have on the archivist and librarian?

Since most of us ply our trade within some form of bureaucracy, and since we are all limited by the literate mindset and the tools of literacy which make such structures possible, it is not surprising that we are diminished in our potential by these technologies. Jeffrey Katzer⁹, editor of *Library/Information Science Review*, deplors "too little research in our writings and too low quality in our research." What about the role of the American Library Association? There are those who would argue "that ALA is simply an organization of practitioners," in other words they are trapped in the daily operation of the library machine. Howard Zinn, in a lively address to the Society of American Archivists some years ago¹⁰ (which the very conservative editor of *The American Archivist* would not publish), pointed out that professionalism is a powerful form of social control resulting in almost total immersion in one's craft. Knowledge for Zinn has a social origin and a social use and reflects the bias of a particular social order (the Marxist position): hence, until recently, a neglect of the records of fringe movements making their way towards the centre. Assuming that libraries and archives are technologies based largely on printing and text in one form or another, how neutral and impartial are we? Are we as "user-friendly" as we think?

The impact of technological systems on libraries and librarianship can inhibit personal communication with users. As Beverley Lynch points out:

Professionals tend to chafe under perceived bureaucratic constraints and strive for greater participation in library affairs In many libraries the decision to change classification schemes was made on the grounds of greater efficiency, as managers sought ways to reduce the costs in technical service operations.... Rarely was the decision based on extensive analysis of classification schemes or on an assessment of how the particular library's clientele need the old scheme to find needed materials and information.¹¹

But professionals, through their training and administration and management, buy into the bureaucratic system and become managers themselves.

Archivists, for their part, often rely too heavily on finding aids designed more for their own use than for the client's research tools which mirror the bureaucratic structures which created the records in the first place, and neglect communication skills which would elicit what the user is really seeking. Whereas librarians have carried out a whole range of user surveys (though with limited success), archivists have been slow to

respond; some introductory studies have nevertheless appeared. Linda Long has shown¹² how the techniques used in counselling, such as active listening, feedback, and self-disclosure can be of considerable assistance. Our profession is not exactly overwhelmed with technological systems, but it is still locked into an approach which is not always as user-oriented as it should be.

So much for mindsets. As Franklin points out, however, technology also restructures social relations¹³, and the anthropologist Jack Goody has shown how writing was essential to the evolution of the bureaucratic state. I believe that *The Logic of Writing and the Organization of Society* should be on the bookshelves of all of us.¹⁴ His comparison of the ancient world and medieval society in terms of their record-keeping, with the oral cultures of Africa, is most revealing, especially in light of Ursula Franklin's discussion of what she terms holistic and prescriptive technologies - which is central to her thesis.¹⁵

"Holistic technologies (HT) are normally associated with the notion of craft," where the artisans control the entire process of their work and enjoy the fullest possible freedom of decision. Prescriptive technologies (PT), on the other hand, require discipline, planning, organization, and a command structure with very little latitude for personal decision-making by the operative. The work is fragmented, sequential, and monotonous; it is designed for compliance (as is much preparatory education).

Allied with these technologies, Franklin identifies the growth model (GM) where "the features of growth, the very process and cycles of growing, the diversity of the components of each growing organism, all have resonated through the historical written record In any given environment, the growing organism develops at its own rate."¹⁶ With the production model (PM) "all essential parameters will become controllable" and there is a noticeable disregard for context and natural surroundings.

Let us consider these typologies in relation to archives and libraries, where there is a striking contrast. Archives could be said to employ a holistic technology in that, wherever possible, the archivist is involved in all the operations of acquisition, arrangement, description and public service, and resists division by function among specialists. Archives also exhibit a growth model in accordance with their organic nature, although bureaucratic imperatives increasingly focus on production. Libraries, on the other hand, have long exhibited a prescriptive technology:

Much of the work performed in libraries is divided into specialized tasks and is conducted outside the framework of the client relationship. Rarely does a librarian participate in all the tasks required.¹⁷

Librarians in consequence often chafe at the limitation of their freedom, as noted above. The circulation of published material through loan and reference also tends towards a production model as the yardstick of effectiveness.

This is not to argue that in each case one is good and the other bad — a mix of holistic and prescriptive is probably essential when economics of scale are considered, which should take into account the human environmental context. The danger is that PT and PM will dominate to the detriment of archivists, librarians, and their users.

Insofar as archivists and librarians are communicators in the full sense of that meaning, communication studies can be helpful. James Carey makes a similar

distinction to Franklin between the *transmission view* involving the passage of information by technology, largely in a serial manner, where various textual references lead to the required work, followed by its receipt and return, as “the extension of messages across geography for the purpose of control” - Franklin’s PT and the *ritual view*, her HT, through sharing, participation, association, fellowship, that typify the oral elements in communications, which means “living with the contradictions and ambiguities of our culture as exemplified in the New England Town Meeting.”¹⁸ Prescriptive technology sees people as the source of problems; machines and devices as the source of solutions. Machines are so much more reliable, but what becomes of the human beings?

Another consequence of the technological orientation is the downgrading of experience and the glorification of expertise¹⁹ and the expert. One problem that leads to this reliance on “the expert” is that tools redefine the problem. This is particularly true of the “Arms Race”; it is equally true of word processing (WP). For Michael Heim, “the word processor is the calculator of the humanist” (which includes the archivist and librarian). He asks, “Will literature be eroded?” Does it crank out fastfood prose?²⁰ His critique is that WP eliminates handwriting, which is “a sign and signature of the self, the linkage of hand and thought through gesture.” The typewriter was originally a person operating the “typewriting machine.” The elimination of the person, as the machine takes over, is also true of the telephone.

Meanwhile, we struggle to make words become units in the technology of cataloguing and retrieval through one word, one meaning. This is perhaps a chimera, for, in J.C.R. Licklider’s words, “No one seems likely to design or invent a formal system of automating sophisticated language behaviour. The best approach, therefore, seems to us to be somewhere between the extremes - to call for a formal base plus an overlay of experience gained in interaction with the cooperative verbal community.”²¹ Allen Kent lists the following unsolvable problems with information systems: (1) What society will be like; (2) What words will mean; (3) How people will act; (4) How people will view events.²²

Diane Beattie’s user study on sources for women’s history²³ illustrates some of these points quite well as they affect archival perceptions, and discusses the way in which archivists in the past were victims of a social mindset and approach to history which virtually ignored women and ethnic minorities. Likewise, we do not know what society will be like in the future or how people will view events, and our information systems may be seriously flawed if we rely too heavily on technology. The archivist and librarian must provide “the overlay of experience” as they interact with the “verbal community.”

One historian describes “a new seam of history,” which

describes the reality of people’s lives in addition to the image they would have liked us to see or ... the way we would like to seem to them. In other words, the new history has unmasked heritage history ... and moves on from people’s individuality into an attempt to describe the culture within which and through which they express themselves. Perhaps the simplest word to use here is *lifestyle*.²⁴

How will our various research tools deal with this kind of approach?

Words do not always provide absolutes, and we are all in danger of diminishing both ourselves and the user in a lonely deadlock if our technologies become inappropriate and lacking a human context. Abraham Kaplan's article, "Age of the Symbol: A Philosophy of Library Education," though written in 1964, is still full of wisdom of which we archivists should also take note:

Everything in the library must ultimately be related to its uses, and these uses must ultimately depend upon the users. Words do not mean anything. *People* means things by words. Information means nothing, but *people* are informed and then take action or make informed decisions A library then is first of all an archive, a repository in which society can find what it has already learned.²⁵

It is this edifice at the gate of which, as monks, we serve those who seek to enter.

I have no doubt that the world of librarians is divided over the extent to which the scientific method should rule. With us archivists, librarians share the multi-media corpus of recorded information, and it is tempting to speak of library science and archival science, where it would be more accurate to speak of two technologies and their systems in Ursula Franklin's real world. However, the root of *scientia* is knowledge, not just science, from which should come *sapientia*, wisdom; but we have tended more and more to equate knowledge with scientific knowledge, to the exclusion of knowledge built upon information as ideas. Curtis Wright, in an extended investigation into the philosophy of librarians, notes that "Kaplan has consistently argued that librarianship is an intellectual discipline based on the philosophical study of ideas, not an empirical discipline based on the scientific study of facts."²⁶ This to a lesser extent applies also to archival science, concerned as it is with the relation between acts and facts in the real world of transactions between parties. It is significant that archival studies of appraisal and description are increasingly focusing on the purpose of the record, on the activity, rather than on being lost in the serbian bog of content. Likewise, Curtis Wright asserts that "if librarians go for content, ... they must either become encyclopedists, who go for all of it, or specialists who go for some of it."²⁷ Kaplan maintains that the first is no longer possible and the second would fail dismally to perform the broad knowledge functions of librarianship. Archivists and librarians alike are swimming for their lives in a sea of symbols, and technology is only of limited help. We must design our own rafts from the riches of humanism and a new cosmology which, for Matthew Fox, consists of "a scientific story, our psychic response to the universe, and art which translates science and mysticism into images."²⁸ What will archives and libraries be like then, I wonder? Whatever happens, the monk must never be sacrificed to the chip.

To return to Franklin again, as she discusses the elimination of the human element from "successful" automatic and automated processes:

Once the development and the social integration of the technology has been accomplished to the satisfaction of its promoters, once the infrastructure of needs had been eliminated, the technology began to remove the human links.²⁹

She then cites the virtual disappearance of the telephone operator, whose mediation rendered the telephone "user-friendly" in the first instance, adding that, "As the

technologies matured and took command, women were left with fragmented and increasingly meaningless work."³⁰ Let this serve as a warning to us all, especially in the context of David Bearman's announcement of the imminence of the wrist phone and data tablet on the lap (shades of the ancient world!), receiving satellite transmissions and storing them so that the "individuation of information resources" will be greatly enhanced.

Individuals will increasingly carry their knowledge and the means to access new information in any format from any place around with them - which for archivists is a prospect greeted with some foreboding.³¹

This surely is a neo-oral culture in which we carry our knowledge around in an extension of our brains.

In the light of all this, Eric Ketelaar wonders whether researchers, who will be able to process so much automated information for their own purposes relatively easily, will accept the information available in archival finding aids which served their purpose one hundred years ago. "Can, in future, someone who has consulted a data bank be expected to turn over pages and find nothing?"³² Will this lead to "fastfood research," to adapt Heim's expression?

Meanwhile, electronic technology is beginning to change the nature of recorded information in other ways which should also alarm the archivist. Ronald Weissman in a recent paper warns us that in the world of "hard copy," during which the archival profession came of age, "documents existed in clearly defined and separate classes of things."³³ Archivists of various media of record have developed their own disciplines and expertise "but, for an increasing number of document related types of work, the old world in which different types of information required the skills of different kinds of document specialists is rapidly disappearing."³⁴

Compound records composed of text, graphics, tables, sound and images, for all their complex nature, "stand alone" and can be isolated, separated, and preserved if necessary.³⁵ In contrast, the hypermedia database is a much freer form, controlled by navigational and data-oriented links by which

the content of one document can be embedded in another, so that, as changes occur in a table, corresponding changes in the underlying data in a spreadsheet or data base are automatically reflected in updated charts in word-processed reports. In a system employing 'hot links', changes in one document are reflected automatically in every document that "subscribes" to that source document's content. In a system employing 'warm links', users are given the option of updating documents as source documents change.³⁶

Weissman points out that this powerful flexibility is also a source of weakness, since there are "neither rules nor formalism."³⁷ In this kind of environment, documents as we know them will lose their separate formal identity and dissolve into a fluid mass of "tagged" content and information all too easily detachable from the initial documentary act, in the manner of Alice's Cheshire cat of which only the smile remained. Modern diplomats will have a hard time with all this. The virtual (original) document will become increasingly elusive and fragile as it is plundered by data bank users

transmogrifying sources through a multitude of links and object-oriented software “in a content mark-up architecture.”³⁸ We may need to rethink some aspects of archival methodology if we are to deal with this babble of electronic discourse. What is information in the *archival* context? Will the monk standing bravely at the gate be swept away in a flood of content without form? On the other hand, perhaps we attach too much importance to originals in this environment of neo-orality, echoing the impermanence of speech in contrast to the persistence of cultural memory.

A clue may be found in the archival administration of written records created by or for aboriginal peoples to preserve tribal history and traditions. For instance, the Maori approach to this knowledge is one of reverence and love within a cosmology alien to the *pakeha* (white) archivists, which demands an appropriate ritual whenever such records are used and, in particular, their location close to the tribe and the land. “There are spiritual connotations surrounding Maori manuscripts which contain traditional knowledge,”³⁹ which require accommodation. Perhaps, if we are not to drown, we too need to let go of our concern for the material minutiae of documentation grounded in scientific reductionism, and give thought to Matthew Fox’s new cosmology referred to earlier. Let Curtis Wright have the last word:

Does information reduce to something physical in the empirical world of matter and energy as in science? Or does it reduce to metaphysical patterns in the intellectual spirit world of ideas as in philosophy? Is information the machinery of communication? Or is it distinct from communicative machinery? Scientific theories of the physical are paralleled today by humanistic theories of the symbolic referent.⁴⁰

Our world of symbols surely requires human mediation to reveal their changing meanings, as we search for knowledge and hope to acquire wisdom.

Notes

- * This paper was originally read at the Annual Conference of the Archival Association of British Columbia, 25-27 April 1991.
- 1 Ursula Franklin, *The Real World of Technology* (Toronto, 1990), p. 12.
- 2 Matthew Fox, *The Coming of the Cosmic Christ* (New York, 1988), p. 21.
- 3 *Ibid.*, p. 22.
- 4 William Irwin Thompson, Chapter 2, “Walking out on the University”, *Passages About Earth* (New York, 1973).
- 5 Franklin, *Real World*, p. 28.
- 6 Fox, *Coming*, p. 22.
- 7 Arthur Kroker, *Technology and the Canadian Mind: Innis/McLuhan/Grant* (Montreal, 1984).
- 8 Hugh A. Taylor, “The Media of Record: Archives in the Wake of McLuhan,” *Georgia Archive* 6 (1978), pp. 1-10.
- 9 Jeffrey Katzer, “ALA and the Status of Research in Library/Information Science,” *Library and Information Science Review* 11 (1989), pp. 83-87.
- 10 Howard Zinn, “Secrecy, Archives and the Public Researcher,” *Boston University Journal* 19, (Fall 1931), pp. 37-44.
- 11 Beverley P. Lynch, “Libraries as Bureaucracies,” *Library Trends* (Winter 1978), p. 262.
- 12 Linda J. Long, “Question Negotiation in the Archival Setting: The Use of Interpersonal Communications Techniques in the Reference Interview,” *The American Archivist* 52, no. 1 (1989), pp. 40-51.
- 13 Franklin, *Real World*, p. 13.
- 14 Jack Goody, *The Logic of Writing and the Organization of Society* (Cambridge, 1986).
- 15 Franklin, *Real World*, pp. 18-24.
- 16 *Ibid.*, p. 27.
- 17 Long, “Libraries and Bureaucracies,” p. 264.
- 18 James W. Carey, *Communications as Culture: Essays on Media and Society* (Boston, 1989), pp. 15-18.
- 19 Franklin, *Real World*, p. 40.

- 20 Michael Heim, *Electric Language: A Philosophical study of Word Processing* (New Haven, 1987), pp. 1-4.
- 21 J.C.R. Licklider, *Libraries of the Future* (Cambridge, 1965), p. 204.
- 22 Allen Kent, "Unsolvable Problems," Anthony Debous, ed., *Information Science: Search for Identify* (New York, 1973), pp. 299-311.
- 23 Diane L. Beattie, "An Archival User Study: Researchers in the Field of Women's History," *Archivaria* 29 (Winter 1989-90), pp. 33-50.
- 24 Michael Honeybone, "The Nature of History and the National Curriculum," *Teaching History* no. 60 (July 1990), p. 9.
- 25 Abraham Kaplan, "The Age of the Symbol: A Philosophy of Library Education," *Library Quarterly* 34 (1964), pp. 296-297.
- 26 Curtis Wright, "The Symbol and its Referent," *Library Trends* 34, no. 4 (Spring 1986), p. 743.
- 27 *Ibid.*, p. 745.
- 28 Fox, *Coming*, p. 1, note.
- 29 Franklin, *Real World*, p. 107.
- 30 *Ibid.*, p. 110.
- 31 David Bearman, "Communications in the 90s," *Archives and Museums Informatics* 4, no. 3 (Fall 1991), p. 1.
- 32 Eric Ketelaar, "Exploration of New Archival Materials," *Archivum* 35 (1989), p. 172, quoting P. René-Bazin, "Vers une informatique archivistique," *Gazette des archives* (1985), pp. 114-115.
- 33 Ronald E.F. Weissman, "Virtual Documents on an Electronic Desktop: Hypermedia, Emerging Computer Environments and the Future of Information Management," Cynthia Durance, ed., *Management of Recorded Information: Converging Disciplines* (Munich, 1990), pp. 37-60.
- 34 *Ibid.*, p. 38.
- 35 *Ibid.*, p. 41.
- 36 *Ibid.*, p. 42.
- 37 *Ibid.*, p. 42.
- 38 *Ibid.*, p. 47.
- 39 Jane McRae, "Translating the Grey Maori Manuscripts for the Public," *Archifacts: Bulletin of the Archives and Records Association of New Zealand* (June 1985), p. 52.
- 40 Wright, "Symbol and Referent," p. 739.