

Books, computers, and the Pushmi-Pullyu

By Merrily E. Taylor

Balancing the past and the future

Those of you who as children were fond of the *Doctor Doolittle* stories (or who saw the film of the same name with Rex Harrison) will remember a peculiar creature called a "Pushmi-Pullyu." As I recall, it looked rather like a llama except that it had a head and forelegs at both ends. The idea, of course, was that the Pushmi-Pullyu wasn't very mobile, and could only look elegant by standing still.

Where new information technology is concerned, the Pushmi-Pullyu is a model which today's academic libraries are working very hard not to emulate—for one thing, the Doctor Doolittle story tells us that "Pushmi-Pullyus are now extinct. That means there aren't any more."

A colleague of mine, also a library director, tells a humorous, and true, story. Once, in the space of a single week, he received letters from two faculty members. The first letter writer took him to task for ruining the library by spending too much money on "computers" and failing to focus on his real business, which was, or should be, books. The second letter writer accosted him for running a "nineteenth-century operation" which had failed to make sufficient use of the obvious advantages offered by providing information in computerized form. In a moment of frustration, my friend made a photocopy of each letter, added a note saying "see comments below," and sent a copy of the first letter to the author of the second, and vice versa. Hence, the image of the Pushmi-Pullyu, exhorting by different communities to move briskly in (apparently) diametrically opposed directions.

Moving ahead

Why aren't most research libraries further along toward "the library of the future," with much of the collection digitized and a substantial amount of new scholarly information being acquired in that form? First, take it as a given that research libraries have invested seriously in electronic information. Most of us offer a wide array of reference tools on computer tapes or compact disk, often available through a campus- or librarywide network; many provide current contents or full-text databases through an online catalog or campuswide information system. A few research libraries already have sophisticated public computer clusters in-house, with machines which have the capacity to provide video and sound data as well as text; the rest of us intend to have such clusters. Still, many of us aren't as far along as we'd like to be—or as far along as the futurists think we should be.

For one thing, whatever the will of librarians, on many campuses the infrastructure for the "library of the future" is not yet in place. Many universities do not yet have fully installed campus networks (it is hard to see how a campus can be considered "networked" when the network does not reach every building, or when multiple networks exist, but do not talk to one another) and in those that do, few are fiber-optic, meaning that they are inadequate for transmitting the full variety of data essential for scholarly information. Even if the network is present, faculty members and students may not have equal access to it, lacking a PC in office or dorm room. In many of our libraries, a significant number of staff still have to go out of their way to use a network-connected device; the multifunction workstation by no means resembles the telephone, present virtually at every desk.

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At Brown University, thanks to the availability of public clusters, there is one PC for every ten students, and this is considered a very favorable ratio; on many campuses, students and faculty who do not have network-linked PC's of their own will not find such ready access. Until we have more ubiquitous access to our campus networks, libraries—charged with making their collections available to all faculty and students—cannot abandon hard copy in favor of the electronic version, even if that was universally desirable.

While buying and processing a book is by no means inexpensive, once having purchased the book a library is not obligated to acquire an expensive piece of machinery in order to make it readable. Often overlooked in discussions of the "electronic library" is the vast amount of investment required in order for an institution to make computer-based information accessible. Workstations, high resolution monitors, networks, network connections, software, printers, and other equipment must not only be acquired, but maintained and updated. Buildings, some of them predating electricity much less the computer, must be adequately wired.

On many campuses, a genuine effort has been made to protect the acquisitions budget despite "hard times"; the same cannot be said for equipment and supply budgets, which have either been cut or held flat and wounded seriously by inflation. It is a rare university which recognizes in its finances the crucial link between electronic information and the infrastructure which supports it.

Unlike the private sector, academic libraries cannot invest in such support systems and pass the costs on to the customer, or write the investment off on taxes. They must seek new funding from their parent institutions, carve funds out of their existing equipment and supply budgets, and, as Brown has done, be creative in seeking outside funding from donors and foundations, although only the most creative projects are likely to attract outside funding.

We need also to remember that a significant segment of our clientele, primarily but not exclusively in the humanities and social sciences, has as much interest in older information as in current, and that the greatest portion of the information now available to humankind remains in formats other than computer-based. So why aren't libraries making a greater

effort to get this older material into machine-readable form?

Obstacles to fully digitized libraries

Many libraries and associations are experimenting in this area, but obstacles remain. First, copyright; however desirable, librarians (or indeed, anyone else) cannot simply take an item in the collection, copy it at will, and distribute it on the campus network—not, at least, if it's under copyright. Second, labor costs. Many libraries have purchased, over the years, large microfilm sets on various subjects, sold by commercial vendors who visited libraries across the country to locate and film items from their historic collections in order to create these sets. But these publishers chose what to film based on one primary criteria: what would sell. Many important titles, of interest to a narrow spectrum of academia or in areas currently "unfashionable," remained unfiled.

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We cannot look to the commercial sector to digitize the vast majority of titles in our collections, and to the extent that human hands are still required to locate a book, open it, and turn its pages for that purpose, the costs are not inconsiderable.

Research librarians are, moreover, concerned about the long-term preservation of information, since by tradition we are the custodians of humankind's memory and since one of the strengths of a great library collection is the ability it gives a scholar to trace the development of an idea, custom, or practice over a long or short period of time. The fact is that we are less sure about the long-term viability of digital storage than we are about that of the book, microfilm, or several other "established" formats.

While experiments in digitizing for preservation purposes continue, the Commission on Preservation still recommends microfilm as the preferred format when deteriorating books need to be converted in order to save their content. Putting "everything" in the library in a com-

puter is an exciting and seductive concept, at least in some circles, but it becomes less enticing when one considers the current fragility of computer files which are vulnerable to computer pirates, disk crashes, the wrong key stroke, non-user-friendly search software, or a change in hardware which renders the software obsolete and the database unreadable. All these problems can be overcome, of course, but not if we ignore them, minimize them, or forget that the archival purpose of the research library is as critical as its responsibility to provide current information.

One more point

As to why books and other "traditional" materials remain important to scholarship, I need not dwell long on that. Many of the reasons were touched on above. There is, however, one point which has not been addressed and that is the fact that, as of today, a significant portion of the world's information is produced in noncomputerized cultures where the printed page continues to be the most efficient mechanism for transmitting knowledge. The average research library acquires 35% or more of its material from abroad. Until such time as all significant information is produced in machine-

readable form—and all our users are able, willing, and eager to make use of it in that form—librarians must continue to support both old and new mechanisms for information access, to go forward with an equal measure of enthusiasm and care, and to articulate as clearly as we can the values which have driven research libraries for centuries.

In fact, if librarians are to avoid being dragged down by the problems of the past, or overwhelmed by the promise of the future, we can learn one thing from the Pushmi-Pullyu, which was a beast notoriously difficult to sneak up on. In working to match our users with the information they need, we must remain open to all the possibilities, from the technologically glamorous to the seemingly mundane. "... You could not (sneak up on) . . . the pushmi-pullyu—because, no matter which way you came toward him, he was always facing you. And besides, only one half of him slept at a time. The other head was always awake—and watching."

Notes

¹All quotes are from Hugh Lofting, *The Story of Doctor Doolittle* (New York, N.Y.: Delacorte Press, 1988). ■

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