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The Changing Research Library*

Douglas W. Bryant

FROM THE MOST ANCIENT STIRRINGS of civilization, when recorded knowledge first began to be collected — certainly since the establishment of the Alexandrian Library early in the third century B.C. — the undeviating purpose of librarians has been to gather the books and manuscripts needed for study and scholarship, to organize them systematically, and to make them readily available to readers. To continue to meet this obligation, it has been increasingly apparent in recent decades, particularly since World War II, that libraries — and the way those who use them think of libraries — were going to have to undergo quite fundamental changes. Some of the reasons dictating change have been a spreading concern for worldwide coverage of information; a vast enlargement in the output of the world's presses; publication in many new forms, such as sound recordings, microforms, video tapes, and magnetic tapes; and the opening of whole new realms of scholarly inquiry. In the last very few years, furthermore, libraries, like all institutions of learning, have been inescapably confronted by the sharp realities of the laws of economics.

This evening I want to share with this company, so dependent as you all are on the use of variously recorded knowledge, some of the thinking and planning that are current among librarians of research institutions and their scholar colleagues. We are embarked on a course, the outcome of which can be but dimly discerned, and yet which we know will deeply affect each one of us and our successors.

Research libraries are changing in many ways — in some ways, radically. It is useful to ask why the changes are coming, how they will be made, and what will be their manifestations.

By the last third of the twentieth century research libraries were destined for alteration owing, if to nothing else, to their very size and the multiplicity of the kinds of materials in their collections. As schol-

* This is the text, with minor revisions, of a talk given on 21 March 1974 at the Shop Club, a group of Harvard faculty members who meet to discuss matters of concern to their research or to their work in the University.

ars use these libraries and as librarians seek to manage the millions of volumes in them, with all their attendant bibliographic complexities, the pressure for change becomes irresistible.

Before proceeding, I should say that I shall be speaking essentially of university libraries. While it is true that two of the largest and most important general libraries, the Library of Congress and The New York Public Library, and many specialized independent libraries such as Folger, Morgan, Huntington, and The American Antiquarian Society are major elements in American scholarship, it is the libraries in universities which I propose to consider.

The Economics of Libraries

The economic factors that affect us most profoundly are plainly apparent. In the 1950s and 1960s university library costs in this country rose at a rate that simply cannot continue indefinitely, a rise roughly parallel to that of total expenditures of the universities of which they are a part. In the twenty years from 1949 to 1969 the expenditures of 59 university libraries in the United States climbed by an average of 10.5% a year, compounded — a rate that results in expenditures doubling in less than seven years and rising by eight times in two decades. In this period of twenty years, Harvard University Library expenditures went from \$1,700,000 to over \$9,000,000, an increase of 5½ times, as compared to the national average, which octupled. The reason for this lower-than-average increase here is simply that Harvard for generations had had a relatively expensive library by virtue of the breadth and depth of its collecting. In contrast, most other American universities were faced in the late 1940s with the necessity drastically to expand their library operations. I should point out specifically, moreover, that the rate of increase in university library expenditures I have noted does not include any reflection of the capital cost of construction to house larger collections or the money needed to maintain the buildings.

Several key causes of this steep climb in the cost of libraries can be enumerated. Across the country we have seen, since the Second World War, unprecedented expansion in the scope of teaching and research programs and in interdisciplinary study and research, which have had a direct impact on the requirements for library services. Another obvious cause has been the world-wide acceleration in publication, in-

cluding publication in parts of the world in which there was no significant output of any kind only a few years ago. In the United States alone, for instance, 7,800 hard-cover books were published in 1947; the figure has now reached 30,000 titles a year. These domestic figures are indicative, furthermore, of what is happening in most other parts of the world. Thus, it is apparent that libraries must acquire far more books in order just to continue at their existing level and scope of coverage of current publication. Since books acquired by libraries are the subject of a discriminating selection process, the cost of this library activity rises as additional specialized bibliographers are needed to scrutinize the product of the world's tireless presses.

Together with increased quantity of published output, there has of course been an astonishing surge in book prices, which have risen more rapidly than general commodity prices. In this country a new hard-cover book cost on the average \$3.62 in 1947 and \$13 in 1972. Periodicals have gone up at a considerably higher rate, particularly in science and technology. To compound this aspect of the problem, the cost of books and periodicals published abroad has risen *much* more than the cost of those published in this country. And here I should remind you that in the Harvard College Library 65% of all books acquired are foreign in origin.

A dramatic growth in student population over the past quarter-century has also contributed to the increase in library costs, but this has affected Harvard less than most universities. In Harvard terms, the library costs in support of instruction, including the Lamont and Hilles Libraries, represent a relatively small proportion of the costs of our University Library as a whole. The great bulk of our expenditures goes to support graduate programs and research, and this with little relation to the size of the graduate student body or faculty. Obviously, library resources adequate for true research are the same whether there are three or thirty individuals engaged in a particular field of study.

The Ways of Change

With respect to the ways in which libraries are changing, let me point first to a principal intellectual difference in the understanding of what research libraries are and can be. Through all the centuries since the Alexandrian Library, the aim of librarians and the hope of

scholars has been to amass in a single library all the resources for research in any branch of knowledge. Though this was always a chimeric notion, nonetheless, it has persistently seduced collectors and readers into pursuing unrealistic objectives and into making false assumptions as to the completeness of collections. This doctrine of self-sufficiency is finally coming to be realized for what it is: a will-o'-the-wisp. We are seeing at last the gradual abandonment of this creed, even for the very largest of libraries. That any library could provide all the resources for research required by its readers is now generally recognized by scholars and librarians, albeit reluctantly, as an unattainable aspiration.

Accordingly, a sharing of holdings among libraries is increasingly accepted as an ineluctable necessity and as the only realistic means of providing the full range of resources needed for scholarly research. To be effective, it goes without saying that access to materials not available in one's own library must be reasonably quick and altogether reliable.

Another approach to interlibrary cooperation will affect one of the most expensive of all library operations: organizing vast collections for use, entailing, as it does, precise cataloguing and other means of bibliographic control. Until very recently libraries have done most of their cataloguing on their own, which has meant inordinately costly duplication of effort, inasmuch as libraries across the country and around the world have been cataloguing the same books over and over again according to their individual standards. Again, as in book collecting itself, the cost of cataloguing must be accepted as a communal burden to be shared among libraries.

Another change in libraries which has been under way for at least forty years and which will inevitably accelerate, is that larger proportions of our collections will be acquired in various kinds of microform — microfilm, microfiches, microprint, etc. Many bodies of material will in the future be available only in this form, and furthermore it is the only economically feasible means of preserving very large portions of our collections that are printed on rapidly disintegrating paper. While I am sure no one of us really enjoys using any kind of microtext, it should be regarded as unavoidable and as becoming less unattractive and inconvenient as reading machines improve in both mechanical and human terms. Even so, it must be recognized that, for many kinds of research, microreproduction can never be an adequate substitute for original materials.

The Signs of Change

Let us now examine some of the manifestations of these changes.

As librarians and scholars come to rely more and more on materials not held in their own collections, it is clear that we shall have to develop means of providing comprehensive information on what materials exist and where they may be located. This kind of bibliographic information will have to be readily available in all libraries seriously concerned with supporting research. Development of interlibrary bibliographic information exchange, and reliance on it for access to the full resources for research, will provide strong incentive toward greater consistency in cataloguing practices among libraries. To reduce the now needless cost of duplicate cataloguing and to create reliable pools of common bibliographic data, libraries will have to take advantage of nationally and internationally established standards. In practical terms, this means that libraries will rely more generally than they have in the past on Library of Congress practice, which is becoming the working standard in world bibliography. Given general adherence to consistent standards and the application of the computer, we may have in any one library immediate access to information on library materials existing in other collections across the nation and elsewhere.

Once one has identified needed material and located it, modern means of telecommunication and transport will facilitate rapid and reliable access to such material. Depending on its nature, it may itself be sent to another library or it may be supplied in some form of reproduction, including telefacsimile for some kinds of information.

By means of sharing resources, libraries can assure students and scholars use of a far broader range of research materials than could conceivably be at their disposal in their own libraries. Except for the relatively few scholars — and they are probably mythical — who can continue to depend on self-contained research collections, this will be a boon beyond price.

Concomitant with these developments, I see the emergence of new patterns in library staffing. I think we shall see libraries with relatively fewer professional staff members, and these will have greater subject and technical specialization. The changes I foresee in the use of libraries will require more individual collaboration between librarians and scholars to insure that researchers really do find and take the fullest advantage of resources for their research, no matter where they may be.

To revert momentarily to the question of library finance, we must be able to master all these changes while at the same time lowering to an acceptable projection the curve of the rate of increase in the cost of libraries.

Computers and Libraries

I have alluded to the computer in the library --- a prospect variously seen as doom or boon. Whichever it is seen to be, the computer will henceforth be an inescapable component in libraries and shortly will be regarded as the same kind of commonplace as, say, adequate lighting. As elsewhere, we have here a fascinating historical phenomenon: just as size and bibliographic complexity threatened research libraries with the dinosaur syndrome — just then did the computer appear on the scene. The changes in libraries which will enable them to provide ever more, and ever more varied, resources for scholarship could not be contemplated without the application of sophisticated and sensitive computer technology to bibliography and library operations. In the near future the computer will become indispensable as a means of creating increasingly helpful guides to vast and diverse literatures; of facilitating quicker, cheaper, and better cataloguing; of providing quick and dependable interlibrary use of materials; and of improving such library operations as charging systems, serials receipts, and accounting.

We are not now, nor do I believe we will be for a very long time, speaking of converting actual texts to computer form. Rather, we are speaking of computer-based bibliographic information of many kinds designed to bring together the scholar and the texts he needs. I cannot leave this point, however, without noting that already we have large amounts of research data that exist only in digital, computer form, as, for example, such bodies of information as census returns, analyses of election results, historical international trade statistics, and the like.

And now a word of encouragement for the humanistic scholar who may view with foreboding, or even downright distaste, the advent of the computer and microtext in the stacks. Let me cite four examples of contributions to learning that would not have been possible without either microphotography or computer technology.

Publication is under way of the full, combined contents of all books published through 1800 that are in the two greatest libraries in the

history of economics and business, the Goldsmiths' Library in the University of London and the Kress Collection in the Baker Library of Harvard. The complete reprinting of the 30,000 titles to be issued in this publishing program would be economically inconceivable except in microform. The same may be said of the projected issuance in microfiches of the records of the Court of Arches, an ecclesiastical court of appeal for the southern half of England and Wales. Mediaeval in origin, the records of this court up to 1666 were lost in the Fire of London, but the 10,000 cases from then to the present day will henceforth be accessible to scholars who are beyond reach of the originals in the Lambeth Palace Library.

Thanks to mechanical, which is to say computer-assisted, manipulation of bibliographic data, we have been able to publish 47 volumes of Widener shelflists covering 30 classifications of subjects in the Widener stack. The shelflist entries themselves were first converted to digital, machine-readable form, after which they were mechanically reorganized so that the published volumes provide access to the Widener holdings in these classifications by four distinct routes: the systematic classification under which the books stand on the shelves, by author, by title, and chronologically by date of publication. Here is a unique, multiple approach to a bibliography of a subject field that would not have been practically feasible without the aid of the computer. And let us remember the recent publication by the Harvard University Press of the monumental Spevack Concordance to Shakespeare. Again, the compilation of this most detailed concordance to the nearly one million words in Shakespeare's works was possible only by putting the whole into computer form so that it could then be mechanically manipulated to produce the intricate text which was in turn converted to printer's copy, also by computer. Many other vastly ambitious enterprises, hitherto unthinkable, are either in train or may now be contemplated in the support of humanistic scholarship.

Implications for Harvard

Let me now try to focus on our own concerns here at Harvard. What are the implications of these changes for the hundred separate libraries that comprise the Harvard University Library system? Like the University itself, the Library is highly decentralized, administratively, financially, geographically, and — most important in our dis-

cussion this evening — bibliographically. Through the long years of its history, the individual parts of the Harvard Library have, for example, developed individualized systems of classification and cataloguing. In order for us to collaborate effectively with other libraries, as collaborate we must, it will first be necessary for us to increase the degree of consistency among our own libraries in matters affecting the bibliographic control of our total collection. Even without the advent of greater interlibrary cooperation, we should undertake these domestic improvements for the benefit of our own operations and for the convenience of Harvard students and scholars.

Cooperation with other libraries is no new thing to Harvard, for, as a national institution, it has over many decades loaned books to other libraries and has participated in many collaborative ventures. After the war, Harvard was influential in establishing the Farmington Plan, a cooperative scheme for insuring that foreign scholarly publications reached American libraries. In 1966 Harvard was one of the first libraries outside the Midwest to join the Center for Research Libraries in Chicago, an independent institution serving as a library's library for collecting and making available to its members research materials of significance but of relatively infrequent use. The Countway Library of Medicine for years has been associated with the National Library of Medicine and the New York State medical library network through various computer connections. Many parts of the Harvard Library have collaborative relationships with libraries in the Boston area, and of course Harvard was instrumental in founding the New England Deposit Library.

As many of you are aware, we have most recently been engaged in far-reaching discussions with three other major libraries: Yale, Columbia, and The New York Public Library. These exploratory talks have led to the establishment of the Research Libraries Group, a consortium of four great research libraries holding a total of 30,000,000 volumes. On the premise that libraries are increasingly going to be working together, it has seemed to us that these four libraries provide a logical and highly advantageous grouping. Each of them is encyclopaedic in character, and each is committed by long tradition to a policy of both extensive and intensive acquisitions in the support of major research in virtually all fields of inquiry. In addition to these common elements in their fundamental purposes, there are a number of practi-

cal considerations that draw these libraries together. All of them contribute to the national community of learning as truly national institutions. Their prestige is such as to make the consortium a powerful force in national library developments. And they are separated by no more than two hundred miles, a matter of considerable convenience both with respect to computer connections and telecommunications. In embarking on this ambitious enterprise, it is our intent to establish a combined resource for scholarship that will be profoundly beneficial to research in each of the four institutions, as well as in the country generally. This prospect is very long-range by nature, and its success will be measured in evolutionary, rather than revolutionary, terms.

In presenting these views of the future, and in closing, I want to be surely understood on a particular point. There are widespread and legitimate fears that cooperation among libraries may lead inevitably to a kind of leveling among them, to the homogenization which has been the unfortunate result for so many other institutions. This is something which I, and I am confident every one of us at Harvard, will steadfastly resist. What I have been discussing has largely been related to the vast bulk of library materials: books and serials of all kinds, as well as the wide variety of other forms of publication. Beyond these, there will always remain the permanent concern of librarians and scholars to assemble unique materials—rare books, literary manuscripts, and personal and institutional archives that will continue to be the hallmarks of libraries of great intellectual distinction. And beyond building research collections of all kinds of materials, there will also remain the continuing responsibility to organize those collections and to facilitate their use by scholars. Just as all the standardized cataloguing and all the computer applications and all the quantitative considerations cannot do the work of scholars, neither can they do the work that it is the abiding joy and historical purpose of librarians to do.

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