

The Future of the Research Library

Mr. Rider is librarian of Wesleyan University. The editors asked him to try to summarize the main line of reasoning developed at length in his provocative new book, The Scholar and the Future of the Research Library, published last month. This article is the result of that request. Appraisal should be withheld until the book itself is read.

OF ALL THE PROBLEMS which have of recent years engaged the attention of educators and librarians none have been more puzzling than those posed by the astonishing growth of our great research libraries. My own interest in this subject has, over the years, resulted in a series of papers, some of them mainly analyses but others endeavoring to suggest specific answers to parts of what has sometimes seemed to be an almost insoluble puzzle.

I would be the first to admit that, as a whole, these papers were all tentative, inconclusive, even in places mutually contradictory. They made no claim then to be anything else. They were a "thinking out loud," an attempt to suggest directions along which solutions might possibly be arrived at rather than an offering of assured conclusions. But one very definite conclusion they did reach: that no emendations in library methods alone are going to solve our research library growth problem, for any savings so effected are quickly overwhelmed by its ever-increasing magnitude. More and more over the years I became convinced that our only possible

answer lies in interlibrary cooperation and cooperation on a much more sweeping scale than any we have ever envisaged. So when two years ago the committee headed by Mr. Metcalf made its epoch-making "division-of-fields" report, it seemed to me a very important step in the right direction.

It is now four years since the idea came to me which is the subject matter of the book of which this paper is intended to give a sort of preview. It was an idea that seemed so obviously and completely "right" that I was very definitely afraid of it! I distrusted my own judgment. So there followed four years of making and remaking innumerable samples of it, of attacking it, testing it, criticizing it. But it had a disconcerting ability: it seemed able to convert every new objection brought against it into a new argument in its favor.

In all the endeavors that we may make to solve the problem of research library growth we must always remember that no solution is going to be entirely satisfactory to the scholar if, directly or indirectly, it takes his books away from him.¹ Having the text of his material conveniently near his elbow is his *sine qua non*. Compared with this immediate availability of his text, every other service which we, as librarians, may offer him—no matter what it is—is, to him, relatively unimportant. But, obviously, if research libraries are go-

¹The *Scholar and the Future of the Research Library*, part I, chapters 4 and 6, discuss some of the "solutions" that do propose taking the scholars books away from him.

ing to continue to double in size every sixteen years (or every twenty years or every thirty years for that matter), we are not going to be able to keep the scholar's books at his elbow unless we can find some quite unprecedentedly inexpensive way to do it.

Four-Part Cost

And we must always bear in mind a second premise, that the cost of maintaining a research library is not a matter merely of the original purchase cost of its materials. These must be made amazingly cheap, to be sure. But purchase cost is only the first of four main categories of cost.² Our cataloging of them must also be made amazingly cheap, our binding of them amazingly cheap, our storage of them amazingly cheap. We must never forget that this problem of library growth of ours is always this four-part problem and that *unless we are able to accomplish a reduction in the cost of all these four parts we arrive at no real solution of it.*

But, if one sits back and views the whole problem quietly and quite dispassionately, it becomes increasingly obvious that any such extreme reductions in cost as the situation demands are quite impossible of realization unless we are able to develop some entirely new synthesis, some entirely new integration of our materials. This was the point at which I had arrived four years ago. This is the question which, it would seem, faces the library world now: is any such a new synthesis possible? *Is it possible that we are approaching the end of an era in our library methodology?*

It is now sixty or seventy years since, under the compelling assurance of Dewey and Cutter and Poole and their fellow pioneers, the library world crystallized a definite pattern of library technique which,

² Further discussed in *op. cit.*, part 1, chapter 3.

although it has been greatly amplified and refined, has never been basically changed. There has even been a tendency in some library circles to take it for granted that it was a final technique. But no technology is ever final or finished. Entirely new conditions arise. In the library world we see them already arisen: in fact they are pressing upon us for solution. Can it be that we are standing on the threshold of changes in our libraries that are going to be far more sweeping than those which the library pioneers developed six or seven decades ago?

Mass and Detail

Libraries are great complexes of tiny items, items which it is impossible to handle on a mass-production basis because each one, tiny though it is, is highly individualized and demands equally individualistic treatment. It is this combination of enormous mass and extreme individualization of detail that has made the problem of research library growth so difficult a one to solve. And our search for a solution has been further complicated by our insistence on viewing the problem, not as one, but as a whole line of problems, problems interconnected at various points to be sure but apparently not in any way that helped us.

We have tried—and this was just as true of my own efforts as of anyone else's—to solve the various phases of our problem one by one as though each existed in a vacuum, not tied up—as they are—in a veritable mesh of methodological interrelationships. We have tried to solve our problem of swollen cataloging cost as though it were a separate and independent problem and our book storage problem as though it also were something separate and independent. We have tried to economize

on binding costs as such, on circulation costs as such, on ordering costs as such, etc., etc. And the reason that we did this, the reason that we failed to integrate what were really interlinked factors of one single problem, was that we were blinded by the *status quo*. We insisted on continuing to accept as library axioms, unalterable and unquestionable, certain assumptions which had no validity as axioms, such pseudo-axioms as: libraries are collections of books, books are stored on shelves, library materials have to be cataloged, catalogs have to be made on cards, books must be arranged by their call numbers, etc., etc., etc. It is not until we have looked behind, and beyond, every one of these—and many other—supposedly basic axioms of library method and have seriously questioned their immutability, that we begin to make any real progress. For when we do this we are suddenly amazed to find the mismatched bits of our research library growth-puzzle falling, almost of themselves, into a quite astonishingly new synthesis.

A Sample of Micro-Reduction

Let us see if the phrase used above, "failed to integrate," can be made more concrete. Some months ago we here at Wesleyan bought, from the Readex Microprint Corporation, their reproduction of the two English literature volumes of the *Church Catalog*. Their micro-print copy of these volumes came to us on six leaves of paper, each leaf six-by-nine inches in size and each printed on both sides. The six leaves were delivered to us enclosed in a substantially made, linen-bound slip-cover box, six and one half by ten inches, and two inches thick, duly labeled on its back-strip edge so that it could be stored upright on the shelf like a book.

The point we are getting at here is this: the *Church Catalog* had, by micro-reduction, been greatly reduced in purchase cost, had been reduced in fact to about one twenty-fifth of its established auction price in book form. And, obviously, that is a very substantial accomplishment. But book purchase cost, we must always remember, is only the first of four categories of book cost. What had the Readex people done about the other three? Clearly they might, in some way, have done *something* about storage cost at least; because they had, through the magic of micro-reduction, shrunk twelve hundred large pages down to twelve small ones, *i.e.*, they had effected a more than 99 per cent decrease in storage bulk.

Failure to Integrate

But in this particular case, as in most of the attacks which we librarians have ourselves made upon the library growth problem, there had occurred at this point a *failure to integrate* all four of the factors of cost. What was the result? So far as storage was concerned our six leaves of micro-printed *Church Catalog* were delivered to us as a complete unit in a form that negated practically all of the saving in storage cost that micro-reduction had effected. We were, to all intents and purposes, put right back where we started: we were asked to handle and store a "book" again and a fairly bulky book at that.

What of the last cost factor, cataloging? About it also the Readex people did nothing. It never even occurred to them that it was any business of theirs to do anything. (And, very possibly, at this stage, it wasn't.) In any event their failure to integrate cost four into their over-all production picture meant that, when we re-

ceived our six-leaf "book" from them, we had to catalog it ourselves; and, in doing our cataloging of it, we had to follow exactly the same procedure, and had to incur exactly the same expense, as we would have had if we had been cataloging the *Church Catalog* in its original two-volume form.

This particular illustrative example has been picked out, not because the Readex people did anything short-sighted or at all out of the ordinary. Quite the contrary. They did exactly what all other publishers and all librarians have been doing. But what they did shows, in essence, why the micro-reduction of books for libraries has been, to date, so relatively disappointing a development. For—all propaganda to the contrary notwithstanding—it *has* been disappointing. We have had coming into our research libraries a mere trickle of micro-materials, where our micro-enthusiasts had hoped for, and had expected to have, a flood. And the reason why this flood has never come is the one just stated: micro-reduction has never yet really integrated itself into library practice. *Micro-materials have always been treated* (by their makers, by their users—and by librarians) *as though they were books*. A different sort of books, to be sure, an annoyingly different sort, and so problem-making instead of problem-solving.

Chance to Begin Again

No one seems to have realized that, abruptly, for the first time in over two thousand years, libraries *were here being offered a chance to begin all over again*. In this first half of the twentieth century A.D. the recorded words of men were coming in to us librarians, not in the form of the books in which they have been coming in to us for two milleniums, but in a brand-new form, an utterly, completely,

basically different form, a form that demanded and that, if we could only see it, would require an utterly and completely and basically different library treatment.³ Because we didn't see this, we tried our hardest to treat them in the way we treated books. And we became annoyed when this didn't seem to work out very well.

Did it work well? Consider what we have all been doing when we took in a twenty-page pamphlet which had been reduced for us to a ten-inch strip of micro-film. A ten-inch strip of film doesn't seem to fit into conventional library practice *anywhere*. How, for instance, have we tried to store it? Some of us put it in a box on the shelves. But, if we did that, we canceled—exactly as the Readex people did with the *Church Catalog*—all of the economy in storage space that micro-reduction has salvaged for us. Some of us put such a snippet in an envelope, and then filed the envelope in some sort of a vertical file. This worked fairly well, provided we had enough similar snippets to make a real file out of them, which most of us have not had. Some of us tried splicing a lot of such snippets together until we had created a composite reel of odds and ends. But this result was, of course, always a hodgepodge, awkward to use—and a sad mess to catalog.

Cataloging

"To catalog!" Here we are, back again to the fourth great factor of our growth problem, to that cost which, in actual fact, bulks larger than any one of the other three. Who has made any attempt whatever really to integrate micro-reduction and cataloging? Remember that now we don't mean drawing up a

³ For the "circulation aspects of the 'solution'" here proposed see *op. cit.*, part 2, chapter 6; for the cataloging side, see part 2, chapters 3 and 4.

set of supplementary cataloging "rules," to be duly inserted in our cataloging "codes," rules to cover such questions as: "What additional data, if any, should be given when we are cataloging materials in micro-form?" "What form of 'collation' is required when cataloging films?" "Who, in the case of films, shall be deemed the 'publisher'?" and such similar cataloging minutiae.

It can be granted that there is in the record any amount of *this* sort of cataloging discussion. But now we are talking about something far deeper and more fundamental. We mean: what thought has been given to the idea that micro-reduction *might* make possible some basically new concept of cataloging, *might* make practicable some entirely new approach to the whole cataloging process? For this sort of discussion one searches the literature of microfilm almost in vain.

Almost. In his comprehensive compendium, *Photographic Reproduction for Libraries*, published only a few months ago, Herman H. Fussler, of the University of Chicago, does give a hint—not much but still a hint—of the sort of thing that we are now talking about. He says (here abridging his comment but italicizing some significant phrases):

The use of microfilm by libraries . . . has not resulted in *basic changes* of methods or organization . . . the question must be raised as to whether . . . we have gone far enough. Is it possible . . . *to utilize reproductive techniques in new and radical ways* which would result in . . . greater efficiency . . . to library patrons . . . *in ways . . . entirely divergent* from our present conception of library organization methods?

And a little further along he answers this question of his in these words:

There is a body of evidence in the ex-

perience of nonlibrary and nonresearch organization and in the inherent nature of the techniques themselves, to point toward an affirmative . . . answer. . . . *The library profession cannot afford to be too complacent or too conservative . . . if the library is to keep its rightful place in these swiftly changing times.*

Dr. Bendikson's Work

For many years, if any of us had made any attempt to effect the sort of new integration that we are now talking about, we would have been handicapped by the form in which micro-materials were being given to us. Two thousand years ago books in roll form gave place to books in folded flat-sheet form. But, although some of us have felt strongly that, sooner or later, micro-materials in roll form would make the same transition, there had, until recently, been discovered no practicable way to accomplish it. And, although we further suspected—some of us—that the material that was going ultimately to be used for these flat micro-materials would be paper, or its equivalent, primarily because paper is cheaper than film but also because it is more resistant to handling abuse, we had found no way to make this change either.

But, because we had these two ideas, some of us felt that Dr. Bendikson, of the Huntington Library, had been on the right track in his work, a decade or more ago, with paper photo-micro-prints, and thought that the very significant pioneer studies that he then made did not receive as much attention as, perhaps, they deserved. He had, of course, been stymied at the time he made them by the difficulty of reading his small-scale micro-reductions in paper-print form; but one may suspect that he believed that some day the optical difficulties that stood in the way of this

sort of micro-reading, as well as the technical difficulties that prevented the printing of micro-materials on paper, would both ultimately be solved. If he did have this faith it was justified. When word came to me one day three or four years ago that the Readex people had found the answer to both of these problems I was so excited that I took the next train to New York to see exactly what they had accomplished. They *had* indeed made a vast stride forward: we as librarians are not yet fully aware how great a stride. Before our eyes entirely new possibilities in the use of micro-reduced materials were opening up: entirely new micro-concepts were at last taking practicable shape.

Of course Dr. Bendikson and Mr. Boni are only two out of a great many micro-pioneers. There was the unknown man—whoever he was—who *first* took a miniature camera shot of a printed page. There have been Binkley, Draeger, Tate, Pratt, Raney, Metcalf, and a long list of others, who have struggled intelligently, unselfishly, and successfully to make microphotography the practicable library tool that it now is. These micro-pioneers are not the ones responsible for *our* failure to integrate their work more closely into our own. That was not their job. They were interested primarily in the technical problems which their new medium presented. They almost had to be. And, as a result of their ingenuity and vision and sacrifice, we have now attained a relative perfection of technical result which places us very much, and forever, in their debt.

Use of Catalog Cards

The new idea that is the subject matter of the book of which this paper is a summary came into being, as many such things do, from a quite unexpected direction. In

attacking the library growth problem from all sorts of angles I had, for one thing, become acutely dissatisfied with some of the aspects of our conventional catalog card. And one thing about it that kept bothering me was the way it wasted perfectly good—and relatively expensive—card space. In the first place, the face of the card was wasteful. Measurement of the superficial area of a great many catalog entries showed that, in the great majority of cases, a half-size card (*i.e.*, a card $6\frac{1}{4} \times 7\frac{1}{2}$ cm.) would provide all the space that was needed. And such a small card could be read and handled almost as easily as our so-called standard-size catalog card.

But, although I even went so far as to suggest in one of my early papers⁴ the possibility of giving such half-size catalog cards serious consideration and although, here at Wesleyan, we have for several years been successfully using such cards—several millions of them—for another purpose,⁵ I was still not at all convinced that we ought to change to them for cataloging. For one thing, half-size cards would not, of themselves, do anything about the wasted backs of our present cards. And, because this waste was twice as great as the waste on the fronts of the cards, it intrigued me that much more.

Use of Waste Space

The waste of space on a standard catalog card—even though it is a waste of three quarters of every card and even though it is being repeated on billions of catalog cards all over the world—might not seem, to most people, important enough to spend very much time over. But, as I was thinking about it one day, this idea

⁴ "The Possibility of Discarding the Card Catalog." *Library Quarterly* 8:329-45, July 1938.

⁵ In the work of the American Genealogical Index.

came to me: *why might we not combine the micro-texts of our books and the catalog cards for these same books in one single entity?* In other words, *why could we not put our micro-books on the (at present entirely unused) backs of their own catalog cards?* And wasn't this that new "integration" of our basic materials that I had for years been looking for? I called this new concept, this new correlation of functions, a "micro-card."

The more I considered this new micro-card idea, the more it grew on me. For, with almost miraculous simplicity, it seemed, automatically, *to solve, not one, but all four of the factors of our growth problem.* In my remaining space let me—very briefly indeed—run over these four solutions.

The cut in first cost, the original purchase cost of the text, is obvious. In the *Church Catalog* case the saving made was about 99 per cent. In very few cases will it be less than 90 per cent.

Storage Cost

Second, storage cost. Any one familiar with microfilm knows that a fair amount of micro-text can be put on the back of a standard-size catalog card, but even some microfilm enthusiasts may be surprised to learn *how* much can be put there. We are assuredly today only in the first stages of micro-reduction technique, yet even today it is possible—by using some very simple new methods in our photographing⁶—to get as many as 250 pages of an ordinary twelvemo book on the back of a single catalog card. And there can be no doubt at all that, given just a slight further smoothness in film graining, just a little more technical skill in micro-photo-

graphing, just a little more improvement in lenses and in camera efficiency, we shall be able, and in a very few years at that, to put, if we wish, as many as five hundred ordinary-size book pages—in other words a regular full-size twelvemo book—*on the back of one single catalog card.*

Of course, as has just been suggested, we can't do this if we insist on following the conventional methods that we have always followed in the micro-photographing of our texts. But there isn't the slightest reason why we should follow them.

Furthermore, very often—in fact, in most cases—we shall *not* want to put 250 pages, or anything like that number of pages, on the back of a single catalog card, even if we are technically able to do so. Other and very important factors indeed⁷ are going to enter into this particular question, and it is these factors rather than ultimate compactness in storage that are going to determine the number of pages we put on each card.

100 Per Cent Saving

In one sense micro-cards will reduce our storage cost not 90 per cent or 99 per cent but a full 100 per cent. Now it must be admitted that to claim a saving of 100 per cent on storage cost sounds a little crazy. But consider. A single twenty-three-inch-long catalog drawer would, if it were full of micro-cards, hold twenty-three hundred author-entry catalog cards, for twenty-three hundred books. It would also hold, on their backs—if we assume for the purpose of this example that none of this particular lot of books happened to be over 250 pages long—*the complete unabridged texts of all these same twenty-three hundred books in micro-re-*

⁶ Discussed in detail in Rider, *op. cit.*, part 2, chapter 2.

⁷ These are discussed in *op. cit.*, part 2, chapter 5, part 2, chapter 10.

duced form. And, obviously, to get in one single catalog drawer twenty-three hundred complete "books," books which would require for their storage in normal book form a row of eight bookcases, each case seven shelves high and three feet wide, would seem in itself to be quite enough of a miracle. But we said that our storage saving was 100 per cent. And 100 per cent it literally is. For our twenty-three hundred volumes, when they have been reduced to micro-card form, *actually occupy no space whatever*, because what they occupy is *the white space on the backs of the cards that would have had to be in that catalog drawer anyway if we had not printed our micro-texts on it.*

Take next, the third category of research library growth costs—binding. With micro-cards, binding costs also have evaporated. They too have been cut a full 100 per cent.

Yet still we have not reached—in fact we have not begun to reach—the end of the economies which micro-cards offer us. There remains the fourth and last factor of our growth cost problem: cataloging.

For decades librarians have been talking about cooperative cataloging, and yet, through all these same decades they have

kept right on doing a large part of their cataloging over and over again, in each of their libraries, independently. Now micro-cards come to invite those libraries for which they are intended—namely research libraries—to save somewhere between 96 and 99 per cent of their present entire cataloging cost. "Invite" isn't a good word: "force" would be a better one. For with micro-cards it is hardly possible to avoid, even if one wanted to do so, the enormous economies of genuine and complete cooperative cataloging. Why? *Because whoever prints one side of our micro-card will in practice print the other side also.*⁸ And just as the cost of printing the micro-card text, already small though it is in total, is divided up between a hundred or two hundred subscribing libraries, so the cost of cataloging will also be divided between the same one hundred or two hundred libraries. This means that our present costs for independently done cataloging will, for micro-cards, shrink almost to the vanishing point. Instead of a dollar or so per cataloged item, they will become a matter of a cent per item or less.

⁸ The publishing of micro-cards is discussed in *op. cit.*, part 2, chapter 7, and in the two following chapters.

Periodical Exchange Union

THE COMMITTEE on the Periodical Exchange Union has just revised the procedures of the operation of the union and has changed the name to the Duplicate Exchange Union. Under the new procedure members can be admitted at any time. Information concerning the union can be obtained from Donald E. Thompson, chairman, Committee on the Duplicate Exchange Union, University of Alabama, University.

DONALD E. THOMPSON, *Chairman*
A.C.R.L. Committee on the Duplicate
Exchange Union