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College Libraries—Indicted Failures: Some Reasons—and a Possible Remedy

This paper identifies some of the sources of conflict between the academic library and the teaching faculty. Although "some kinds of contention are rather easily removed," others range in seriousness to such a depth that "realistically a solution is most likely not possible." The author proposes that some of the deeper seated conflicts result from fundamental differences in competing ends held by faculty members and librarians, some result from "characterological" differences between them, and others inhere in the sometimes opposing roles the two groups are called upon to play. Examples are given.

When judged by the purported end, college libraries are failures. That is the only conclusion one can properly draw.

A college's goals are plural and can be expressed in diverse ways; nonetheless, the statement that students are to fall in love with books—not just to flirt or to be engaged but rather to marry until death do them part—is a fair expression of the central aim that both faculty and librarians proclaim. Occasionally a college achieves puppy love, but such a casual and immature relationship must be proclaimed a failure.¹

That the performance is dismal is enigmatic, too.

Everybody says the library is the heart of the college. Everyone is for the library. (To be against libraries is perhaps a greater sin than to be against motherhood, especially if one is in higher education.) Even college presidents who can raise money for nothing else mount successful campaigns for new libraries. By and large the most handsome architecture has appeared in collegiate libraries. Their physical location is often ideal. Many now have seminar rooms and faculty offices as well as generous student accommodations. Smoking and no-smoking areas, reading rooms with magazines, attractive displays of new acquisitions, accommodations for the humanities faculty (such as tapes and records), typewriters, and on and on, abound. Almost the best of all possible physical worlds exists for libraries on many campuses today. Yet, the conclusion remains—FAILURE.²

¹ Remarks of this flavor abound in the writings of librarians and others. E.g., Ralph Perkins, director of library education, University of North Dakota, concludes in his study of over four thousand college seniors from sixty-nine colleges and universities from thirty-eight states that:

"'Currently any study of actual use of libraries as revealed by standardized tests designed to measure such knowledge must result in an indictment of teachers; an indictment of administrators; an indictment of librarians; an indictment of those who allocate vast sums of money for buildings for libraries as they are being used today by college students.' (The Prospective Teacher's Knowledge of Library Fundamentals. New York: The Scarecrow Press, Inc., 1965, p. 199.)

Similar findings come from the study by Guy R. Lyke, The President, The Professor, and The College Library. (New York: The H. W. Wilson Co., 1963, pp. 52-55.)

(¹) The reader should keep in mind that it is college, not university, libraries that I am describing. The small or medium sized private liberal arts college away from a metropolitan center typifies the mode under analysis here.)

Dr. Blackburn is Professor of Higher Education in the University of Michigan. The paper is reprinted here with permission from the Library-College Journal.
Why?
Paradoxes seldom have simple answers. What is offered here remains in the hypothetical category and merits whatever attention it might receive on the basis of the attractiveness and accuracy of the analysis that follows.

Our approach to dilemmas takes a path we have found fruitful in the past. When the physical arrangements seem in good order and rationality apparently dominates, then experience has taught us that beneath outward equanimity may reside rather deep personal conflicts. (The persons involved most likely will be quite unconscious of the frictions.) Said once more, when stated purposes are in agreement and where the physical arrangements predict success, the hypothesis that people are at the core of the failure is worthy of pursuit.

What follows, then, are arguments for the assertion that personal conflicts exist between faculty members and librarians. As was stated above, little experimental evidence exists to corroborate the analysis and thus what is advanced remains hypothetical. (It may, however, become suggestive of fruitful research.)

Resolutions for some conflict areas will be suggested. The position taken will be that some kinds of contention are rather easily removed, that some can be mitigated by understanding and by compromise of private desire for the larger goal, and that some of the conflicts between faculty members and librarians reside at such a deep level that realistically a solution is most likely not possible.

Once again, the enigma: Why is there an unsuccessful marriage based on love between students and books when both faculty and librarians claim this as their end and when all conditions seem to make the goal inevitable?

What is claimed here is that there is human conflict and that it arises from some fundamental differences in competing ends held by faculty members and by librarians, that some basic characterological differences, both in traits as well as in ego (status) dimensions exist between professors and librarians, and that the roles librarians and faculty members play, possibly because of the structure of the organization in which they both work, create frictions. Let us demonstrate.

Ends—Some conflicting desires of faculty members and librarians.

Very simply put, faculty members want to own (possess) books even more than they want students to love books.

Who owns the books they want? The librarian.

Furthermore, the librarian gets to order thousands of them every year, gets to unwrap them when they come, and is the first one to have journals and magazines in hand when they come in the mail. Faculty cannot even find time to

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As reported in Dissertation Abstracts, Vol. 21 (October-December 1960), pp. 910-11 for Henry H. Scherer's EdD thesis at the University of Southern California, "Faculty-Librarian Relationships in Selected Liberal Arts Colleges," I may be in error. Respondents to his questionnaire agreed that harmony between librarians and faculty members was vital and that it was "good." However, there is no data to support the reported beliefs, no personality variables are analyzed, and I fear he received the "party line" response rather than reality.

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The categories of ends, character (or personality), and role may not be the most profitable for analysis. The demonstrations below will point to instances of some complex of these three. It is sufficient here, however, is to exhibit the conflicts, not to exhaust the possible causes. Said another way, other variables might be more fruitful for research than the ones utilized here.
read all that they want to and obviously the librarian, sitting quietly and undisturbed in her office just reads, and reads, and reads. Faculty are outright jealous; she has what faculty want most of all and what is rightfully theirs, not hers. 

If faculty find a high priority goal of theirs thwarted by librarians in their ownership of books, librarians harbor a deep resentment of the faculty's ownership of the students, at least of what he reads. Thus a high priority goal of the librarian is unattainable. By virtue of assignments made and not made, the professor to a large measure controls what books students touch in the library. Also, the faculty regulate to an appreciable degree what books and what journals the library will have. Librarians know better than faculty what the best books are, know better than faculty what students really should read—what is good for them and what they would like, yet can have but little impact. Furthermore, faculty teach. This other entrée into the student's mind excludes the librarian from an authoritative and influencing role. In short, librarians are understandably jealous of professors.

Thus, ends other than the common one of producing a lasting romance between students and books are in conflict within the collegiate setting, all to the student's misfortune.

**Personality**—Some basic differences between faculty and librarians.

1. **Traits:** Faculty tend toward disorderliness whereas order, efficiency, economy and the like seem to be predominant in librarians. Librarians do not like unused books and they do like circulation figures, again a kind of preciseness that is contrary to what faculty value highly. Then there is the predominant maleness of faculty versus the predominant femaleness of librarians and the associations these bring forth (as in, say, doctor versus nurse). Punctuality, rules and regulations—unadmirable traits in the opinion of faculty—are integrated in a librarian's life. For faculty not to get book orders in on time certainly disturbs librarians.

In summary, acts which support both faculty and librarian stereotypes only make for difficulty in cooperation.

2. **Ego, or Status:** The librarian seems to have an inordinate passion for status. Bergen speaks of the librarian's "marginality vis-à-vis his client groups—the students and the faculty." An American Library Association monograph is exclusively devoted to this question. Faculty rank seems to be a sought after goal, almost as an end in itself.

However, one can wonder what the

---

1 "She" will be the pronoun employed for "librarians" and "he" for a "faculty member" even though there are female professors and most often men occupy the highest positions in a hierarchy of a large library system. But the sex differences dominate and the stereotypes are a part of my argument. See below.

2 I do not think money is the fundamental issue here. I believe a faculty member (no claim for "all" is ever made or intended in this paper; only that the variable is significant, sometimes dominant), given the undetectable ability to steal and having the choice between a ten dollar bill and a three dollar book, would, if he succumbed to the temptation, opt for the book. I could find no figures on theft of books from libraries, but my guess is that on a per-capita basis faculty members steal more than students do. Librarians at the University of Michigan can show that theft increases during summer sessions, the time when the enrollment proportion of teachers to students is significantly higher.

3 Lyle, op. cit., shows that more than half the use of books in the library is done in the textbooks brought into the library by the students. (p. 55.)


11 Once upon a time the librarian played a guardianship role, to never let a book be touched. But today's advocate speaks of emptying shelves every night, and it is she we are addressing. See, e.g., Kevin Guinagh, "The Academic Image of the Librarian" in Lyle's *The President, the Professor, and the College Library, op. cit.,* pp. 11-13.

12 Dan Bergen, op. cit., p. 81.

acquisition of academic rank accomplishes. Vice presidents for development sometimes possess academic titles but are not received into the society of faculty. The librarian works regular hours in a fixed locale and receives students without advance appointment. In almost all ways, the librarian is more like an administrative officer (say, registrar) and that alone excludes the librarian from the company of faculty membership, regardless of title bestowed. A faculty member cannot like an administrator, and that is what a librarian is. Furthermore, since the librarian is geographically separated from the inner and top core of the administration and also holds less power, she is particularly vulnerable to faculty wrath and abuse— as a convenient way of getting at a seemingly apparent source of discontent.

At the same time, but in quite different ways, the librarian poses an unrelenting threat to the ego of the faculty member. The professor's principal teaching device, regardless of the particular form it may appear in—lecture, quiz, lab, even in discussion or tutorial, is his authority. The faculty member holds it and the student must accept it—and usually wants to, whether he should or not. Books, of course, are a genuine threat to the faculty member's ego. Seldom does he place on his reading list books which do not support his basic beliefs.

Two events inevitably ensnare the faculty member, however. First of all, books with contrary views do infiltrate the library—from a former faculty member, a colleague, sometimes by the librarian, as "gifts." Secondly, books are authorities, especially when written by acclaimed scholars. They are genuine threats to the faculty member's ego. One can enhance his status by finding an error or a flaw in a renowned book, and they almost always have one. But the threat remains genuine. He knows that a book is as good a teacher as he is. It is much safer to keep the student out of the library. At best, keep him busy with some reference work or reserve assignments the professor can control.

So, libraries, and hence librarians, also threaten faculty. Ergo, conflict.

C. Roles—Some carrying out of functions within the college that produce conflict between librarians and professors.14

We have already seen that faculty hold certain positions of power in the college and that librarians are in a servant role. Even when accorded academic rank, librarians are seldom on educational policy committees or on the faculty personnel committee. They even are outnumbered on the library committee and cannot prevent strains on their meager budget when faculty wish to retain subscriptions to unused journals and order multiple copies of a textbook that will be used one term for one course and thereafter waste away on precious shelf space. Faculty can transfer student wrath from themselves to the librarian for books not in the library, ones which were ordered by the professor at least two weeks ago. Professors can complain about librarians to the Dean more easily than librarians can retaliate. Ordinarily librarians cannot use the power of the Dean even to recover a book the faculty member will not return. Besides, having to send the faculty member a notice that his book is overdue, or needed by Professor Jones, or by student Smith (horror of horrors) is an act that in no way enhances the librarian's role vis-à-vis the faculty member.

So, roles cause conflict too.

Let us conclude our case that there is deep rooted conflict between faculty members and librarians by simply point-

14 Lowell E. Olson, as reported in Dissertation Abstracts, Vol. 27 No. 6 (December, 1966), p. 1846A. His PhD thesis at the University of Minnesota, "Teachers', Principals', and Librarians' Perception of the School Librarian's Role" set his study in role theory. However, it focuses on secondary schools and deals more with the training and status of librarians than with the concerns I focus upon here.
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ing to some situations which differ from those already delineated only in that they are more complex, i.e., involve simultaneous conflicts in various combinations of the categories constructed for this analysis.

That librarians are obtaining beautiful and new buildings with fine offices before faculty acquire comparable facilities can create jealousies and affect ends. That librarians keep attractively displaying all the new acquisitions the faculty member covets (and suspects the librarian is reading) certainly frustrates the overworked college faculty member. ("Information overload" seems to be the new term; the library houses this source of frustration and cause of inadequacy feeling.) That the librarian can advance irrefutable arguments about how faculty should "make students make better use of the library" only produces additional guilt feelings.

Even more complex interrelationships acting on ends, personality, and role come readily to mind. For example, faculty do not know how to find everything they want in a library. Yet faculty are supposed to know, and humiliation is involved in asking a librarian for assistance. Furthermore, to ask a librarian a question presents her with a problem (and she likes to solve mysteries) and gives her the opportunity to display how skilled she really is and how stupid professors really are. Again, the student library assignment that stipulates no assistance from the librarian—a task defended on the grounds that a student must acquire library skills (a legitimate goal)—may in fact be a protective device on the part of the faculty member so as to not allow a librarian to reveal to a student what could actually be learned in such a building. (Furthermore, if students could really use libraries they might discover all kinds of things—arguments faculty cannot counter, books they have not read, . . .)

The reader will quickly supply many more illustrations to support our contention that for understandable reasons faculty and librarians have genuine (though most often unexpressed) conflicts. Furthermore, we no longer are surprised that collegiate libraries fail so grandiosely, that they do so little in contrast to what "everyone knows" they could and should accomplish.

What might be done? What conflicts can be removed? Which can be mitigated? Which can be solved by transposing them? How?

Our sagacity at this juncture is rather meager. We can only offer a few suggestions, hoping them to be "good" and trusting that what we have presented will be suggestive to others. We have a consummate faith in the ingenuity of librarians and faculty to solve problems.

When we take stock, we are encouraged by a solution already in existence, though we suspect the incident may be accidental. A typical library rule is for the user (say, a professor) not to reshelve the books he has strewn across the table. The librarian no doubt has established this regulation because faculty make errors in reshelving and thereby produce more headaches and time loss than by having a library assistant perform the task. Fine. The faculty member can relish the disorder he cherishes and the librarian can achieve the order she wishes. So, one solution serves diverse, even conflicting, wishes. No doubt there are others, but they do not deluge us.

15 See, for example, Patricia B. Knapp, "The College Librarian: Sociology of a Professional Specialization," in Robert B. Downs (ed.), op. cit., pp. 56-65, and her An Experiment in Coordination Between Teaching and Library Staff for Changing Use of University Library Resources (Detroit: Moniteith College, Wayne State University, 1964). The latter mammoth study, as exciting as it was enterprising, must in the end be judged a failure. Despite herculean efforts and funds, the librarian, Pat Knapp, was not fully accepted by a faculty who theoretically were the most receptive audience she could expect, and the use of the library by students remains but a fraction of its desired potential. Also, see her College Teaching and the College Library, ACRL Monograph No. 23, 1959 (Chicago: American Library Association), pp. 94-95 support the statements made regarding faculty ignorance.
But what can we create to make students fall in love with books? Patricia Knapp entertained the notion of having a coffee shop nearby. Our idea is different, but related.

Besides librarians and faculty members we find that proprietors of bookshops love books and love to own and possess books. The small shop, the one with some unusual titles from small presses, with paperbacks enticingly displayed, is particularly attractive and may very well have a profound impact on a student buying (falling in love with) books. A certain amount of casualness, even sloppiness, a librarian would certainly say, and the bearded man add to the atmosphere; so does his trust that one will respect his treasures.

Our basic suggestion, then, is to move the bookstore into the library—literally. The library cannot sell its possessions directly, but it could be the best bookstore in the entire world in displaying the titles available. All the library needs to add is an order desk. The student and faculty member simply fill out proper forms (or better, speak the order into a recording device), the library sends it off and notifies the purchaser when his package arrives.

And we would take advantage of other successful merchandizing techniques (if you will excuse the crassness of the term). Everyone would have a charge card. As an automatic part of his contract the faculty member would have a credit of $100 each September. If the business manager insists, students might have to pay in advance and have a credit of x dollars on their charge ticket.

We also would greatly capitalize on photoduplication services. Rather than simply having the machine available and working for a quarter, or whatever, we would have spaces on the student fee card that would automatically give him $10 worth of duplication service. The faculty would have a greater allotment. (As for the college’s expense, they might well be cheaper than having a journal stolen and/or pages torn from a magazine so as to obtain one article. Most people want just a small part of a book or an article for their personal possession and use. See that they can obtain (and own) it, fast and cheap.

In this same category an extra catalog card could be ordered for each new addition, the additional one simply being handed to the faculty member who ordered the book. Then he would have an already completed card for his file index and might even feel he has an intimate relationship (approaching ownership) with that book.

We could go on with our bookstore-library notion, but perhaps enough has been said to suggest that such an operation could well throw librarians and faculty and students together with books and their contents. (Female librarians cannot grow beards, we know; but they could more often have long, straight hair, leotards, and miniskirts.) The ends of all parties would stand a much greater chance of attainment. The library could take the proper credit for the total “through-put” of books—borrowed, bought, and reproduced, a much better measure of the intellectual climate of the college than the numerical count of the bodies that went through the front door each day or of the number of volumes checked out.

Our device has not solved some of the conflict areas, for it has not changed


17 One might learn from book salesmen. They take valuable faculty time, and have the goal of obtaining adoptions (selling) and soliciting manuscripts. Yet they are tolerated, for they send “samples.”

18 Reproduction and copyright problems cannot be considered here, although it is recognized that there are vital issues requiring resolution. Also, the student who will steal a page from a journal or a book so that his classmates will suffer on a forthcoming examination is a different problem, one not solved by our suggestion.
deep rooted personality differences. This arrangement would still not allow a librarian to teach a faculty member how to use a library without insulting him—but he might ask now, if he spends more time there, for he likes the bookstore aspect anyhow, especially the credit for free books. If librarians have a genuine fixation about order, our idea may be more disturbing than they can tolerate. (Our arrangement might attract to the profession people who now avoid it.)

The authority role with regard to knowledge the faculty member now assumes would be greatly threatened; he may not be able to adjust his ego and return to the status of fellow learner. And there would be other difficulties, we are sure.

We are basically optimists. We believe people can change, and we have an unshakable faith in the power of books. Manipulating a situation does not seem immoral to us when our goal is a confrontation all parties sincerely desire and when the activity, the wedding of ideas (as found in print) with people—librarians, students, and faculty—would be much better facilitated by enticing them together. We would even feel a little proud if we helped change the cliché, "the library is the heart of the college," from a pious platitude to a concrete reality.

19 Margaret Bennett (pseudonyms for two librarians) "DON'T Give Us Your Tired, Your Poor," The Atlantic Monthly, May 1965.
Seekers of information in libraries either go through a librarian intermediary or they help themselves. When they go through librarians they must develop their questions through four levels of need, referred to here as the visceral, conscious, formalized, and compromised needs. In his pre-search interview with an information-seeker the reference librarian attempts to help him arrive at an understanding of his “compromised” need by determining: (1) the subject of his interest; (2) his motivation; (3) his personal characteristics; (4) the relationship of the inquiry to file organization; and (5) anticipated answers. The author contends that research is needed into the techniques of conducting this negotiation between the user and the reference librarian.

Delbruck’s Principle of Limited Sloppiness

You should be sloppy enough so that the unexpected happens, yet not so sloppy that you cannot figure out what happens after it has happened.—in Eiduson, Bernice T. Scientists: Their Psychological World (1962), p. 126.

The major problem facing libraries, and similar information systems, is how to proceed from “things as they are now” to “things as they may be.” It is an illuminating exercise to extrapolate from present technology to describe the library of the future. However, such exercises have little to say as to how to proceed from “now” to “then.”

There are two possible alternatives to this process of change, with a whole range of options. First the revolutionary concept: libraries will wither away and their place in the communications network will be taken by some new institutional form, probably imposed from the outside. The second one, an evolutionary development, is that libraries themselves will gradually make the transition.

The work described here is based on the second alternative. The objective was to examine and analyze certain relationships between library system and library user. It is hoped that this paper develops sufficiently fruitful generalizations, so that further investigations can start at a different level, with new assumptions. It

Mr. Taylor is Director of the Library at Hampshire College, Amherst, Mass. The work described here was accomplished at Lehigh University, while the author was Director of the Center for the Information Sciences, and was supported by grant from the Air Force Office of Aerospace Research, AF-AFOSR-724-66. This paper is a summary of a report of the same title, issued as Report No. 3 (July 1967) in the Series, Studies in the ManSystem Interface in Libraries, published at Lehigh University.

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is further hoped that, as a result of future investigations in this area, the evolution of libraries from passive warehouses to dynamic communication centers will be less traumatic and more effective.

This paper is not concerned with the usual library automation, although the effect that automation may have on the interface between user and system is recognized. In time, the automation of routine processes, i.e., order, catalog, and circulation control, after the bugs are worked out, will allow a different level of interaction. But routine automation is merely an extension of the control and warehousing functions of libraries. The work described here is an early effort to understand better the communications functions of libraries and similar types of information centers, because this is what libraries are all about.

Consequently this paper is concerned with two phases of this interface, which revolve around the process of negotiating the question. This act of negotiation usually takes one or both of these forms: (a) working through a human intermediary, i.e. the reference librarian; (b) self-help, by which the user himself attempts, often unsuccessfully, to sharpen his question by interacting with the library and its contents.

Reference librarians and information specialists have developed, both consciously and unconsciously, rather sophisticated methods of interrogating users. These methods are difficult to describe, indeed some believe they are indescribable. No such assumption is made here, in the belief that there are gross categories or levels of information which are consciously sought and received by the librarian in the negotiation process. We are dealing here of course with a very subtle problem—how one person tries to find out what another person wants to know, when the latter cannot describe his need precisely. There are a few good but unsystematic papers on the reference functions, but very little has been done of an analytical nature.

In the self-help process, the user depends upon his own knowledge, frequently incomplete, of the system. It appears that there are a large number of users of information systems who, for a variety of reasons, will not ask a librarian for assistance. They develop their own search strategy, neither very sure of what it is they want nor fully cognizant of the alternatives open to them.

Both of these processes have some things in common: the development of a strategy of search, and frequently a change in the type of answer anticipated or acceptable as the search or negotiation continues. There is an implicit assumption in this paper, which intuitively seems valid. Most experimental work with retrieval systems and most attitudes toward reference questions look upon the inquiry and the relevance of answers as single events. This is mistaken. An inquiry is merely a micro-event in a shifting non-linear adaptive mechanism.

Consequently, in this paper an inquiry is looked upon not as a command, as in conventional search strategy, but rather as a description of an area of doubt in which the question is open-ended, negotiable, and dynamic.

The first part of the paper discusses and analyzes the negotiation process as practiced by reference librarians and information specialists. The author is in—


debted to a number of professionals who subjected themselves to taped interviews ranging in length from sixty to ninety minutes. The interviews were limited to special librarians and information specialists for several reasons. First, they are usually concerned with substantive questions. Second, their inquiries usually come from highly motivated and critical people who have an idea what is acceptable as an answer. Third, to find material, the librarian must understand and therefore must negotiate the question. In contrast, public and academic librarians, because of the nature of their clientele and institutions, have educational responsibilities and staff restrictions which limit their response to inquiry. One special librarian pointed out:

The levels of frustration in using libraries are awfully high for most people. It’s amazing, as hard as we work at making ourselves popular with these people, we still have them come in and stand diffidently at our desk and say, “Well, I don’t want to interrupt, but . . .” To which I reply, “If you don’t interrupt me I don’t have a job.” But it’s amazing how people can’t get over this. I think it would be a study in itself, that we grow up in school libraries, public libraries, and college libraries, generally where this kind of service is not provided. Consequently you are conditioned to feeling that the library is a place you almost have to drag something out of. The library is almost the last place they want to go, because they’ve been conditioned.7

The interviews were open-ended and unstructured. They were designed to elicit three things, described in the librarian’s own words:

1. What categories of information does a librarian attempt to obtain from an inquirer?
2. What is the role of system file organization in the negotiation process?
3. What kinds of answers will inquirers accept and what influence might this have on the negotiation process?

**QUESTION NEGOTIATION BY LIBRARIANS**

Without doubt, the negotiation of reference questions is one of the most complex acts of human communication. In this act, one person tries to describe for another person not something he knows, but rather something he does not know. Quantitative data about this process is non-existent. In spite of its complexity, however, it is possible to say certain things about it and to form a gross classification of the process. This is a first necessary step toward a basis for valid observation and the statement of testable hypotheses.

It is worthwhile in this consideration of the negotiation process to attempt to understand what a question is. Although reference librarians and other “question negotiators” count what are called “questions,” this is not really what this paper is concerned with. Let us attempt to reconstruct in general terms this negotiation process, that is, as it pertains to the interaction between an inquirer and an information specialist.

The inquirer has what D. M. Mackay calls “a certain incompleteness in his picture of the world—an inadequacy in what we might call his ‘state of readiness’ to interact purposefully with the world around him,” in terms of a par-
In Figure 1, at decision point A, the inquirer decides whether to discuss his problem with a colleague or to go to whatever literature or information center may be available. Before he disturbs a busy colleague, he is likely to make a minimum search of his own files. This will happen only, however, if he has analyzed his "inadequacy" sufficiently to be able even to look through his own files.

He also makes a second decision (B in Figure 1): to go to the library or information center. This is an important choice and reflects a number of factors: previous experience, environment (is this an accepted procedure in his activity?), and ease of access. Studies of information-seeking behavior indicate, for example, that "ease of access" to an information system is more significant than...
"amount or quality of information" retrievable.\textsuperscript{11}

At decision point C he makes another choice of paths: (a) to ask an information specialist; or (b) to help himself. Most important in this decision is the inquirer's image of the personnel, their effectiveness, and his previous experience with this or any other library and librarian.

All three of these decisions will have an influence, largely undetermined, on the negotiation process. It is not the intent of this paper to do more than list these prenegotiation choices as forming part of the context and background for the process itself.

Assuming that the inquirer has made these choices and has arrived at the desk of the information specialist, he then specifies in some form what it is he hopes to find out. "Arrived" can mean any of several communication modes: by letter, by telephone, or by direct face-to-face interview. It is at this point that negotiation begins. Before consideration of this process, it is first necessary to discuss various levels of questions. In general we can describe four levels of information need and the configuration of question which represents each level.\textsuperscript{12}

1. First of all, there is the conscious or even unconscious need for information not existing in the remembered experience of the inquirer. It may be only a vague sort of dissatisfaction. It is probably inexpressible in linguistic terms. This need (it really is not a question yet) will change in form, quality, concreteness, and criteria as information is added, as it is influenced by analogy, or as its importance grows with the investigation.

2. At the second level there is a conscious mental description of an ill-defined area of indecision. It will probably be an ambiguous and rambling statement. The inquirer may, at this stage, talk to someone else to sharpen his focus. He presumably hopes that two things will happen in this process: (a) his colleague will understand the ambiguities; and (b) these ambiguities will gradually disappear in the course of the dialogue.

3. At this level an inquirer can form a qualified and rational statement of his question. Here he is describing his area of doubt in concrete terms and he may or may not be thinking within the context or constraints of the system from which he wants information. By the way, he may view the librarian as part of the system at this level, rather than as a colleague. This distinction is important. As one interviewed librarian said: "For most people, I am the information system."

4. At the fourth level the question is recast in anticipation of what the files can deliver. The searcher must think in terms of the organization of particular files and of the discrete packages available—such as books, reports, papers, drawings, or tables.

These four levels of question formation shade into one another along the question spectrum. They are stated here only as convenient points along a continuum. They may be outlined as follows:

\begin{itemize}
  \item $Q_1$—the actual, but unexpressed need for information (the \textit{visceral} need);
  \item $Q_2$—the conscious, within-brain description of the need (the \textit{conscious} need);
  \item $Q_3$—the formal statement of the need (the \textit{formalized} need);
  \item $Q_4$—the question as presented to the information system (the \textit{compromised} need).
\end{itemize}


\textsuperscript{12} James W. Perry, \textit{Defining the Query Spectrum—The Basis for Designing and Evaluating Retrieval Methods} (n.p., 1961 (mimeo.)); Taylor, \textit{op. cit.}. 
Unless the inquirer knows the information specialist well, he is inclined to pose his first question in positive and well-defined terms, even to the point of specifying a particular package \((Q_4)\). If the specialist is accepted as a colleague, the negotiation process can start earlier and be much more fruitful. An important necessity for such acceptance appears to be subject knowledge. As one information specialist put it: "A person with a technical background will handle a technical subject in less than half the time and with more competent and thorough results." This is where the process of negotiation starts. The compromised question \((Q_4)\) is the information specialist's business, the representation of the inquirer's need within the constraints of the system and its files. The skill of the reference librarian is to work with the inquirer back to the formalized need \((Q_3)\), possibly even to the conscious need \((Q_2)\), and then to translate these needs into a useful search strategy.

This is a directed and structured process, although there are of course many different styles and many levels of competence and knowledge on the part of both librarian and inquirer. There are certain obvious traits which will help the librarian: empathy, sense of analogy, subject knowledge, and knowledge of files, collection, and clientele.\(^{13}\)

\(^{13}\) Francillon, op. cit.

The negotiation process is a form of communication. It is illuminating to contrast it with normal conversation, in which one person finds out in random fashion about another's interest. Figure 2 shows the stream of communicative acts on a variety of subjects between friends over a period of time. However, embedded in this conversation are elements of a subject of interest, which one person is communicating randomly to his friend. Communicative acts are shown by a dot; those which are relevant to the subject are circled.

In contrast, the negotiation process must compress both the boundaries of the interview and the time span. More information must be communicated in less time. This requires both direction and structure on the part of the information specialist. Figure 3 illustrates this compression, where relevant communicative acts are much more frequent.

From the interviews with librarians and information specialists there appear to be five filters through which a question passes, and from which the librarian selects significant data to aid him in his search. It is the structure of these filters, modified for the specific inquiry, that provides the compression of subject and time illustrated in Figure 3. These five general types of information necessary for the search definition are not mutually exclusive categories. The listing is approximately in order of occurrence, although they may occur simultaneously, i.e., relevant data for several filters may be embedded in a single statement by the inquirer.

They may be briefly stated as follows:

1. determination of subject;
2. objective and motivation;
3. personal characteristics of inquirer;
4. relationship of inquiry description to file organization;
5. anticipated or acceptable answers.

The problems associated with these "filters" are well known, even obvious,
Determination of Subject

Determination of the limits and structure of the subject of the inquiry comprise the content and aim of the first filter. The information culled at this level of negotiation is of course closely intertwined with that of the second filter (the objective and motivation behind the inquiry). However, the two filters appear to have a sufficiently different function and necessary style of negotiation to require separate consideration for each.

At the first pass the primary purpose of negotiated subject definition is to provide some general delineation of the area: from biomedicine to genetics to the genetic code in DNA. Continued dialogue on the ramifications and structure of the subject will define, expand, narrow, and qualify the inquiry.

X said he was interested in "contact terminals." Well, that's rather a vague term, and it probably took me a few minutes to find out what he meant by that. He might not even have started with that terminology. He meant "binding post" type of terminals. I probably asked him a question like: "Do you mean the type of spring terminals that are used in jacks, plugs and jacks?" He said, "No," and probably then said something about "binding posts." And I remarked "Oh, you mean soldered terminals." He probably replied, "No, that's where the contact comes into it, I mean the wrapped type." And so after a few exchanges like that, I would have gotten a picture in my mind as to what he was talking about. This is where my practical experience in radio engineering is helpful, because I can visualize these things.

At some stage, depending on the state of other relevant categories of information, it may be necessary to call a halt to this initial phase, in order to allow the librarian to make a brief search to determine the extent of the subject. He can then come back to the inquirer with "Is this what you mean?" or "Is this in the ball park?" From discussion in answer to these questions, the subject is further limited and qualified. This form of dynamic interaction may continue for some time, until the librarian is satisfied he knows what is wanted.

Engineer X will come in and say "Gee, I have these three references on subject A. I've got all the ones I know about. Are there any more?" He may just stop in passing. This may develop into a major project, just because the man is so busy, he is not aware of the vast amount of information available to him. Once the subject is defined, we define the peripheral areas that may bear upon this. We inform him of our basic search strategies so he feels he is part of the effort. And we inform him how he in turn can interact with us, depending on the time constraints. If it is a long term project, he will receive in the normal course of his work material we may not be aware of. In turn we ask that he input these data to us. And if it becomes necessary for one of our people to go to his office and physically go over and read some of the more important papers on the subject, we will do this. So there is a continuous interaction between the people in the information research group and the scientist and engineer asking for the material.

The fact that they write the question doesn't help one bit. We think if it's written it's clear. You know "put it in writing." But you get no feedback with writing. It's the dialogue, the feedback, that is the important
thing. For the librarian, the important thing is this awareness of the fact that you will need feedback in order to make sure of what you’ve got. You have to have this suspicion—a sensing of when it is you know what it is the inquirer wants, and when it is you are sure he has got it clear, and when it is you are not sure.

**MOTIVATION AND OBJECTIVE OF THE INQUIRER**

The second filter or category of information negotiated is probably the most critical: Why does the inquirer want this information? What is his objective? What is his motivation? This requires subtlety in negotiation, but usually has a high payoff in subject definition. It further qualifies the subject, or may even alter the entire inquiry. It also offers an opportunity to ascertain the point of view and influence the size, shape, and form of possible answers. Most of the librarians interviewed felt strongly that this type of question was critical to the success of any negotiation and consequent search. In those instances where this is not the case, the librarian’s approach is that the inquirer (a) knows what he wants, (b) knows more than the librarian, and (3) is aware of the search strategies necessary to satisfy his *need*. None of these assumptions appear to be wholly valid.

Unless you are sure what the why is, you can never be sure what it is the person really wants. What’s he going to do with the information . . . ? We can’t help him unless we understand his needs as well as he does.

It is an obvious truism to every librarian who works at an information or reference desk that inquirers seldom ask at first for what they want. When they reach the point of confessing, “But this is really what I want to know . . . ,” the acute librarian knows he is over a major hurdle.

Inquirers frequently cannot define what they want, but they can discuss why they need it. Consequently they are inclined to ask very specific questions, as if they were ashamed to hold up their ignorance for everyone to see. These may include an innocent and unambiguous request for a directory address, which develops into a search on molds; a request for a copy of *Aviation Week* which turns into a basic and broad company proposal on commercial aviation; an inquiry to verify if there is a place called P , which turns into a search for information on rat repellants. In these cases, as one interviewee pointed out, “My function is to help him decide what it is he wants.”

The first step is to be eternally suspicious and the realization that in most cases they simply don’t tell you what it is they really need. I think this is a matter of human communication—that we need the dialogue to frame up what we are after. I find this is true even in the simplest questions. There is that eternal suspicion that what they ask is probably not what they really want.

**PERSONAL BACKGROUND OF THE INQUIRER**

The third level or category of information necessary in the negotiation process has to do with the personal background of the inquirer. What is his status in the organization? Has he been in the library before? What is his background? What relationship does his inquiry have to what he knows? What is his level of critical awareness? Answers to these types of questions have relevance to the total negotiation process. It may well determine the urgency, the strategy of the negotiation, the level of any dialogue, and the critical acceptance of search results. In short, it is the context, the environment for the negotiation process. It determines what questions should and may be asked.

Because we get to know our clientele personally, we know the type of response they need and require. We know whether a person is a thorough individual, or a less thorough one. In the latter case, it may be somewhat frustrating at times when you
know you haven't gone far enough, yet they are satisfied.

Have I worked with him before? This makes a great deal of difference. If he is an old timer and I've worked with him before, I know pretty well what steps I can take in negotiating the question. If he is a stranger, or relative stranger to the information service, it presents a problem to me. Some of the questions I might ask are: What group are you working with? Who is your leader? Where he is situated in the organization is important. His status. Whether he is at ease or not. Sometimes we get people who feel very inadequate in coming to the library. They may come to us as a last resort, not knowing what they are getting into. They may feel that they are exposing themselves to someone looking over their shoulder. That is a position we don't want them to feel in.

There are many problems in this facet of negotiation. An instance cited by one interviewee is when an inquirer, who may be in his own right a highly competent researcher, is used as a high level messenger by, for example, the vice president for research. It is at this point, as the librarian pointed out, that experience and personal knowledge of the organization and people become important. The “messenger” frequently may not know the background and motivation for the inquiry. It is here that the librarian must make some educated guesses and associations based on experience. He must in some way bring the vice president into the dialogue, without undermining the reputation of the “messenger.”

**Relationship of Inquiry Description to File Organization**

An information specialist or a reference librarian is an intermediary, an interlocutor, between the inquirer and the system. As such, the negotiation process not only provides him with a substantive description of the inquiry, but also supplies him clues for devising his search strategy. He becomes a translator, interpreting and restructuring the inquiry so it fits the files as they are organized in his library. In the symbolism discussed earlier, he must construct a Q₄, or a set of Q₄’s, so that the total system can be searched efficiently.

The inquirer will state briefly his problem over the phone. This is not enough so we go to him. We very likely do not discuss the specific problem but rather the relationship of the problem to the work he is doing. How does it tie in? We work from the general to the specific. He will often use a blackboard. What are the limits of the problem? In many cases we redefine the approach because he isn’t familiar with the search strategy. So we redefine the problem to match the search strategy necessary. The inquirer is usually not aware of the sources available to him.

If we view the negotiation process as a “game of chess” as one librarian suggested, the librarian has a tremendous advantage. He is the one who knows the rules of the game; the inquirer doesn’t. The “rules of the game” are the organization, structure, associations, and specific peculiarities of the files. The quotation above hints this: “We redefine the problem to match the search strategy.” The implications of such a statement, if taken at face value, can have the effect of redefining librarianship.

It should be understood that the “files” refer not only to the catalogs, indexes, abstracts, and other standard files of the library. There is also the “who knows what” file, not on cards but in the librarian’s memory. There are special files: previous requests, news notes, recent items read, the unstructured notes (or pieces of paper napkins) in the librarian’s desk drawer. There is the sense, or activity, of building the inquiry into the system—the system including the information specialist and all the relevant files.

Referring people to other people is one of the methods we use. But before referring them, we ask “Whom have you talked to? Are you working by yourself or with others? Do you know X? Do you want to talk to X, or should we?” You see, we don’t want to go charging off in all directions, duplicating effort.

As much as possible, the librarians interviewed also tried to elicit from the inquirer any stray bits of information from his specialized knowledge that would give clues in support of a search strategy.

One of the standard questions we ask: “To your knowledge what will probably be the most fruitful area in which to search?” This opens up some leads . . . often, he will say something like, “Well, I think there was a Proceedings of the IEEE about 1963 and I thought I saw something in there. Maybe that will give you a lead.” In this particular case his hint was sufficient to open up the problem for us.

What the inquirer is saying is “Here is a paper. I’d like ones similar to it, or similar to it in this specific way.”

**What Kind of Answer Will the Inquirer Accept?**

When an inquirer approaches the reference desk, he has some picture in mind as to what he expects his answer to look like, *i.e.* format, data, size, etc.\(^1\) The problem of the inquirer’s acceptability of an answer is an important filter in the process of answering inquiries. One of the results of the negotiation process is to alter the inquirer’s *a priori* picture of what it is he expects. This picture is altered as the inquirer changes his question in response to feedback, as he becomes aware of the capabilities of both the library and the librarian, as he changes his search strategy in the negotiation process, and as he is forced in the negotiation process to place limits of time and size on his inquiry.

The sense of urgency in the inquiry definitely has an influence on the type of answer expected.

The inquirer may say “I need this in 30 minutes.” By doing so he has pretty well determined what form he will accept and what questions I can ask.

Whether or not the inquirer is asking for information in his own specialty will shape the kind of answer useful to him.

If a person is asking for a search in his own field, then you can sit down and talk to him. If he is asking in a field peripheral to his interest, then he has probably been asked to express an opinion on something. He doesn’t want a search, but rather something limited, for example a review or a state-of-the-art paper.

Undoubtedly the subject field of the library and its clientele has a bearing on the type of answer expected, in ways we do not even know about yet. For example, in the law\(^1\)\(^6\) it appears that the questions are very precise, but the answers are less precise. This is due to the nature of precedence in the law, in which a law, a court ruling, or an administrative regulation might be pertinent to a specific case, and are the only answers available. They don’t however answer the question. Training in the law appears to make a difference. As one librarian put it: “I can almost tell the law school by the type of question.”

One of the nagging problems in the delivery of answers seems to be the degree of evaluation the information staff can and should make. There are of course a variety of factors at work here: the librarian’s own capability; the inquirer’s attitude; and the available time. One interviewed librarian described the problem as follows:

Now the next level beyond this is one in which we have hardly done anything at all,


primarily because we don't have the manpower. But I think it is probably the most important... That is to make an evaluation of these materials. Just to hand someone a batch of raw abstracts is not enough; or even a list of numbers; paper A says the property equals this, paper B says it's that, and so on. Well, if they don't agree, shouldn't someone read the papers, and decide what were the experimental techniques, and give these a weight? That is, this is the most significant number, or the most valid number, or this is a significant average. We have just not been able to do it except in a few rare instances. Now the hope had been—when I say "hope" I don't mean only ours, but from the top of the Research and Engineering Department down—that, if we gave the individual chemist or engineer these other materials, he would do this evaluation. The evidence is that he doesn't do it. I would say only 1% actually do it. The others will take the first number at the top of the pile, some will average all the numbers, some will apparently take the number that fits their number best. You know, it's the human problem.

Perhaps the most important obstacle to evaluation by the librarian is the sense of puritanism on the part of both librarians and management who believe, for ethical rather than economic reasons, that everyone should do his own work. Such an ethos is at odds with the sense of service in librarianship, with the requirements of management for the best information as soon as possible, and with the growing complexity of libraries in a "data-rich civilization."

THE INFORMATION SEEKING STRATEGIES OF USERS

This paper makes an assumption which seems intuitively valid. In the self-help process, i.e. when an inquirer attempts to find information in his own way, we view the inquiry not as a command, but rather as an adaptive self-organizing system in which the question is open-ended and dynamic. In fact, as will be illustrated, the inquirer's original question may change during the search, as he adapts to the feedback of the search process.

Let us discuss briefly commands and questions, for an understanding of the difference between them is critical for the development of truly interactive systems.17 A command basically denotes the request for a specific item or specific subject combination which the inquirer has already assumed will satisfy his need. Whether his assumption is valid or not has been discussed before. For the moment we accept its validity. In response to his command, the inquirer is delivered, or he locates, a specific package. Here the process ends, and he is satisfied (by definition).

Libraries and other information systems have been developed and operated on these premises. However, one may suspect that the rise of reference services —historically, a rather recent development—and the care lavished upon indexing, cataloging, and classification schemes indicates a feeling that traditional "command" systems must have some form of feedback built into them.

There are of course many mechanisms by which classificationists, index designers, and other information system developers have attempted to develop strategies and alternatives for the inquirer. For the inquirer, however, these are frequently oversophisticated, at least in the display forms in which they presently exist. The inquirer is only concerned with getting an answer, not with system niceties. Nor is he interested in learning and maintaining currency with a system in which only a very minor part has relevance to him. An analogy may be made to the myriads of direction-al signs on an urban freeway. The signs seem to be designed for the benefit of natives and not strangers. Though the principle remains the same, the results

of a wrong decision in the latter case are apt to be somewhat more catastroph-ic, in the immediate sense at least.

There really has been little empathy for the unsophisticated (i.e. non-native) user. Within the conventional information system, the signs offered the inquirer pose too many alternatives without specification as to where each may lead or what each will do for the inquirer. It may be that better forms of display and interrogation by the system, in an interactive sense, can provide more adaptive interfaces.

The concept of the interface, in this context, must be extended beyond its usual meaning of a physical surface or panel of control buttons and knobs. It includes here not only the physical problems, e.g. ease of use, but also the subtle and personal interrelationship, however primitive this knowledge may be at present, between user and recorded knowledge.

Within this context, the question, as contrasted to the command, can be better understood. In the symbolism developed above, the command is $Q_4$, the question compromised by the rigidities of the system and by the specific need assumed by the inquirer. However the question moves back toward $Q_4$ and even toward $Q_2$. It is ambiguous, imprecise, and requires feedback from the system, or from a colleague, in order to provide an acceptable answer. This approach, without intruding on epistemological grounds, may also give clues to a better understanding of the differences between information and knowledge.

As a first pass at understanding information-seeking, approximately twenty undergraduate students in a course, “The Information Sciences” at Lehigh University were asked to report on the process resulting from a self-generated information need. Four of these searches are discussed here. The project had two purposes. First, from a pedagogical standpoint, it was intended to create an awareness in the students of themselves as information-seekers: the decisions they make; the sources they use; the complexities and failures of the systems they encounter; and the ambiguities and strategies of their question-asking processes. Second, it was hoped that some gross generalizations could be made of this process, notwithstanding the open-endedness and uncontrolled nature of the project.

The students were first asked to read the section on “Human Search Strategies,” from the report of the Advanced Information Systems Company.\(^{18}\) This was done to give them some feel for the scope and nature of the problem. They were then asked, following class discussion, to write a description of their search for specific information in any topic of interest to them at that time. This approach was felt to be better than one based on artificially generated searches, because (a) they could draw on their own experience and interests, and (b) they could determine when they had an acceptable answer. They were allowed to use any sources they wished and to ask advice from anyone. They were instructed to conduct the search in whatever way seemed easiest and most efficient. They were not restricted to the library, although they were requested to use the library somewhere in their search.

The following instructions were given orally and were briefly discussed:

1. Do not attempt to describe every motion or every decision in full detail. However, please pick out what, in your judgment, are some of the more important or significant decision points and record those completely.

2. In the beginning analyze your question: What do I know already? What will I accept as an answer? Note that your question, and your criteria of an-

Answer acceptability, may change as the search progresses.

3. Analyze possible search strategies and estimate probability of success. Note that new strategies may appear in the search process, or may be altered in a variety of ways.

4. The following activities are significant:
   a. the original question and any re-evaluation of it;
   b. interrogation of a source, both human and printed or graphic;
   c. decisions to try a new strategy or to re-evaluate the strategy;
   d. significant results of an interrogation, including important clues;
   e. memory or store, i.e. partial data thought pertinent to the search, which you hold in "memory," or record in some fashion;
   f. "dead end" of a search path, in which you could (1) go to new strategy, (2) re-evaluate question, or (3) consider the whole question not worth the trouble.

There are several observations and a few generalizations that can be extracted from the resulting search strategies.

1. All searchers used some human intermediaries, fellow students, or reference librarians, to give them clues or guidance.

2. No student thought in terms of a library strategy, that is, to view the total collection as a source and then devise one or several approaches to it. All of them however used certain library mechanisms of a strategic nature:
   a. To use the classification schedule as a means of searching:

   None of the books indicated looks promising. However they all have the same catalog number (510.7834). I'll look in the stacks at that number and see if any of the books are promising.

   b. To use the Subject Catalog (the library used a divided catalog).

   c. To search the Subject Catalog beyond the original subject heading for phrases, etc.

   Under CURVES there were nine books. . . So I was about to look at SURFACES when I noticed a card saying CURVES ON SURFACES.

3. Most of the inquiries posed could not be answered by any single book or paper. They represent, however, questions of the type that users (in this case, engineers) wish to have answered:

No. 1: What is the relationship for the rate of gaseous molecular bombardment of the walls of the gases container?
No. 2: What is micro-programming?
No. 3: What is a concise definition of "Gaussian Curvature?"
No. 4: How does the Philco F10 differential amplifier operate in the model 228 digital memory unit?19

4. The searchers generally made good use of tables of contents and indexes of single books examined. When they did not, they made poor judgments as to the usefulness of specific chapters to their inquiry.

5. Answers usually do not come in neat little packages in answer to a specific question of the type posed here. One, for example, had to put his answer together from seven different sources, albeit in a single book.

6. When available information sources do not provide enough information for an acceptable answer, it is necessary to alter the question. As the student with Question No. 4 found out:

The question will have to be generalized because specific data supply is exhausted. How is a general transistor differential amplifier analyzed?

7. For the type of questions posed, there is a great deal of noise in library catalogs, particularly in the Subject section. This may be characteristic of aca-

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19J. S. Green, "GRINS, an On-Line Structure for the Negotiation of Inquiries," Report No. 4, Studies in the Man-System Interface in Libraries (Bethlehem, Pennsylvania; Center for Information Sciences, Lehigh University, June 1966).
ademic libraries, whose collections are based on quantity rather than quality.

The results seem to support the belief that the inquirer's interaction with a library or information system has certain similarities to the negotiation process. If this belief has validity, it means that libraries are very frustrating to use and that library systems need considerably more experimental work to enhance this interface between user and library.

**SUMMARY AND CONCLUSIONS**

What has been gained by this investigation? Or does it merely reiterate what is already known? Is this, as someone has said about psychology, an elaboration of the obvious? In part, it certainly has been an elaboration of the obvious. But it has been more. It has attempted, by restructuring the obvious, to open up new ways of looking at libraries. The whole purpose has been, by organization and structure, to allow the reference and searching processes to be seen from a point closer to actual fact. This was done in the hope that a more intensive study of this process will result, and that elements could be isolated for fruitful analysis and eventual improvement of services.

**NEGOTIATION**

It has been shown in this report that the negotiation process, in its best form, is structured and can be analyzed. However, the five filters discussed above are neither absolute nor fixed. They provide a first pass at structuring a complex process. They appear to be valid at this state of investigation. Each filter, however, requires data, analysis, and testing. They could be, for example, further broken down, if it appears fruitful to do so, so that the more important elements could be better understood and utilized by information specialists in the future.

This approach to the negotiation process suggests ways by which library schools could re-examine course content in reference work. Is it possible, for example, to orient these courses more toward the dynamism of communication, *i.e.* negotiation, rather than concentrating solely on the static content of reference collections and classification systems? The former has been slighted, if considered at all, in the emphasis on the latter, the static approach. A newer approach should mean, for example, more attention to the social dynamics of definable parts of the population of library users, both actual and potential. This approach is already included in the training of children's librarians. It implies the total pattern of publishing, formal and informal communication, sociology, dissemination and professional education, if any, at whatever level of society a course is presumed relevant, from the "culturally deprived" to the "scientifically sophisticated."

A third result of this concern with the negotiation process is an understanding of the difference between a command and a question. A command assumes either (or both) of two things on the part of the inquirer. First, he knows exactly what he wants and can describe its form (book, paper, etc.) and its label (author and title). The second assumption is that the inquirer knows the functional organization of the system, the "rules of the game." It has been the argument of this paper that only the first assumption may be valid. The second assumption, with some exceptions, is not valid.

**SELF-HELP**

It is obvious that librarians and information specialists are unable, physically, to handle the present demands on their services, let alone potential user demand. It is equally obvious that, as a communication channel, libraries are frustrating and complex systems to use. The previous section implied that a different type of education for librarians might make
them more efficient in serving their various publics. That is, they could help more people. Such a course would by no means be sufficient to nullify the self-help process, even if we wanted to. Do we then wish to duplicate reference negotiation? Duplication of such a complex process is obviously impossible now. In spite of the glittering but distant potential of artificial intelligence, problem solving, and theorem-proving systems, the nature of print and other media may in fact require different approaches than those of human negotiation. There do appear to be several elements of the negotiation process worth investigating to see if mechanical systems might be feasible and useful.

Certainly substantive definition is one of these processes. Present subject naming systems however appear to be more concerned with the description of physical objects (books, papers, etc.), than assistance to the user in defining his subject. This is an important and critical differentiation, for present systems are object-oriented (static) rather than inquiry-oriented (dynamic). This is related directly to the concept of feedback—presentation to the user of various levels of display requiring a response from him. The inquirer’s response in turn guides, alters, or limits future displays, searches, and answers by the system. However, most important in the process of subject definition is the display to the inquirer of alternatives, with specification of what these alternatives mean, where they lead to.

A second element or negotiation filter relevant to self-help is the inquirer’s description of what he anticipates as an answer. Is it quantitative? descriptive? review? What is the level of sophistication? The very brief dialogue reported by one student in describing his search illustrates this process.

She began to look in a book of mathematical tables, and I explained to her that she would not find “Gaussian Curvature” there. I told her it was a theory, not a measurement. Whereupon she gave me a mathematical dictionary which looked as if it would help.

The important part of this process is that the user must be presented with choices, which match his type of anticipated answer with the forms available in the system.20

A third relevant filter is the process of translating from the inquirer’s terminology to system terminology. The idea here of course is to allow the inquirer as much latitude as possible in describing his need (Q3 or even Q2), and then funneling these into system terms (Q4).

The remaining two elements of the negotiation process probably cannot at present be built into the self-help process. However it may be possible at a primitive level to interrogate the user about the objective of his inquiry, what the information is to be used for. Using the ELIZA program developed by Project MAC21 or a related system presently being devised by James Green of Lehigh University,22 it is possible to extract from such questions as “What do you intend to do with this information?” additional concepts, phrases, and terms which would aid in specifying the subject. As such it may have a therapeutic effect on the inquirer, forcing him to define, limit, and analyze his inquiry, even though the system itself is not sophisticated enough to do much with the information in response to such questions.

The background or status of the inquirer does not appear to have much relevance to the self-help process, except as it may serve to determine a level of sophistication in the displays presented to him or in the answer delivered.

20 It is worth noting that the form divisions in the Dewey Classification anticipated this kind of approach.
22 J. S. Green, op. cit.
POSSIBLE SYSTEMS AND DEVICES

All present systems have forms and elements intended to aid the inquirer: see also and see references; broader term, related term, and narrower term; form division in classification; generic relationships in classification. As more research goes into these sophisticated and often intricate mechanisms, the more the inquirer must turn to the information specialist. As was implied earlier, these are librarian's tools and appear to have little relevance—in their present form—for the inquirer. The system that is best able to display itself in a useful and functional way for the inquirer will be the most effective. Like information itself, the system that provides ease of access, specifically physical convenience, will be more effective than those concerned only with the quality of the scheme of subject organization. Video, film, microform, and computer media offer a tremendous array of possibilities hardly touched for interactive systems at the operating, i.e. public, level. Even at the elementary level of description of collection and its physical arrangement, very little has been done to direct the user to areas of concern to him.

General instruction in the use of library and information systems is presently normally accomplished by tours, formal instruction, and handbooks, none of which are available when the user actually has an inquiry. One of the more interesting systems presently under development is the Videosonic system at Mt. San Antonio College. Controlled experiment with these devices indicates that students who utilized the system used the library more effectively and sought services from the staff less frequently than those not exposed.

The Recordak Lodestar Microfilm Reader-Printer with an Image Control Keyboard offers several possibilities for a programed learning and interrogating system relevant to the library. Each of approximately twenty-five hundred frames on a reel are available by dialing, or otherwise signifying an address on the keyboard. Michael B. Liebowitz of Lehigh University has done a preliminary design study for such a microfilm system in the field of metallurgy. In the system the user moves from index frames to subject network frames, then to bibliography, tables of contents, or data, as his needs indicate. The important part of this process is that the user is led through the system not in serial fashion, but by his area of interest as he responds to questions. He can also obtain hard copy as he moves along. There are some grave limitations in such microfilm systems. Updating for example becomes difficult, without redesigning an entire reel. However, the display of subject maps may allow a user a much better understanding of the relationship of his inquiry to terms within the system and to the interrelationships among terms. The presentation of tables of contents in this form may allow a user to scan quickly a summary of the contents of a specialized reference collection.

The study now underway at the graduate library school of the University of Chicago on the format, information, and public use of data on catalog cards may indicate more effective display of bibliographic information. The augmented catalog, now being experimented on by Project INTREX, will include such important forms of display as reviews and tables of contents. Although both of these developments will influence the display of information, they appear to be related more to command rather than to question. The work by


Engelbart and others at the Stanford Research Institute\textsuperscript{26} on the augmentation of human intellect by computers may generate interesting systems sometime in the future, but appears to have little pertinence at this time to the problems under consideration here.

If nothing else it is hoped that this first pass at the analysis of negotiation, both by human intermediaries and by self-help, may induce libraries and librarians to become critically aware of their role in this process. The advent of the MARC project, commercial processing of library materials, and the gradual disappearance of local cataloging operations will have a profound influence on operating libraries. It will become increasingly important for librarians to become interpreters and guides, developing both negotiation skills and displays for users of all levels of sophistication.

The contrast between the “wholesaler” and “retailer” of information may serve as an analogy here. However much they like to think otherwise, most libraries are “wholesalers” of knowledge, and the library is a warehouse (however grand the Gothic windows or beautiful the new carpeting) from which gobs of knowledge are indiscriminately doled out to whom ever happens to be captive of the system at that moment. There are exceptions—and they are noble ones.

\textsuperscript{26} R. S. Taylor, \textit{op. cit.}

Certainly most of the librarians who gave their time for this study are helping to make their libraries “retailers.” This is the difference between the supermarket or discount house and the local dealer who takes pride in serving his customers, \textit{i.e.} public. He is not pushing merchandise. He is matching a customer and his merchandise.

If libraries, at any level of service, are going to grow and evolve (and indeed exist) as integral parts of our urban technico-scientific culture, then they must know themselves. They must know themselves both as local and rather special institutions and as parts of very large, very dynamic, and very complex information and communications networks, which operate on both a formal and an informal level.

It may be, as someone has said of formal education, that the storage media which libraries handle are noise in the system. The real education and communication may take place outside or on the periphery of libraries and formal education. Indeed it may be that the reference interview, the negotiation of questions is the only process in libraries that is not noise. For it is through negotiation that an inquirer presumably resolves his problem, begins to understand what he means, and begins to adjust his question to both system and substantive noise in the store of recorded knowledge called the library.
Activities and Opportunities of University Librarians for Full Participation in the Educational Enterprise

A questionnaire was distributed to the directors of all members of the Association of Research Libraries and to all other state university libraries inquiring about their attitudes and practices regarding library staff participation in professional and community activities. Seventy-two respondents showed preponderantly favorable attitudes to such activities as teaching, research and publication, consulting, and participating in the work of professional groups. Although there appear to be explainable differences between such activities by librarians and by teaching faculty members, it is clear that most university librarians have reasonable opportunity to engage fully in the educational enterprise.

This study is one of a series made to collect and disseminate information regarding the status of librarians and its improvement in colleges and universities. The extent to which librarians have the opportunity (and take advantage of such opportunity when it is available) to participate in professional and community activities has been of concern to librarians for many years. The questionnaire on which this study is based was designed to elicit this information from the larger university and research libraries in the United States and Canada. The questionnaire was sent to the directors of all ARL members and to all other state university libraries. Replies were received from seventy-two librarians, most of whom were members of ARL.

General Summary

The questionnaire was divided into ten areas of activity in which librarians might participate as parts of the educational enterprise. The first question in each section explored the attitudes of the respondents—usually the library directors—toward participation of staff members in a particular activity commonly engaged in by teaching faculty. These questions were expressed in language equivalent to asking, “Do you encourage...” or “Do you think the library benefits by...” the given activity.
The responses showed strong sentiment in favor of all these activities, as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing and publication</td>
<td>100</td>
</tr>
<tr>
<td>Campus committee and similar assignments</td>
<td>100</td>
</tr>
<tr>
<td>Professional service on local, state, and national basis</td>
<td>100</td>
</tr>
<tr>
<td>Consulting work</td>
<td>99</td>
</tr>
<tr>
<td>Research</td>
<td>97</td>
</tr>
<tr>
<td>Surveys</td>
<td>96</td>
</tr>
<tr>
<td>Leaves of Absence</td>
<td>92</td>
</tr>
<tr>
<td>Participation in non-library professional association work</td>
<td>92</td>
</tr>
<tr>
<td>Participation in non-professional local activities</td>
<td>89</td>
</tr>
<tr>
<td>Teaching</td>
<td>71</td>
</tr>
</tbody>
</table>

Though the value of the precise figures may be questioned, there is a clear indication that library administrators, at least in public, strongly favor the participation of their staffs in professional university life. Some of the affirmative replies to these questions about attitude, however, may not have been very hearty, as indicated by the reservations and qualifications expressed by some of the respondents in volunteered comments. From the evidence of similar comments, on the other hand, some of the negative responses also appear to have been rather weak.

Other questions explored the extent to which this generally high estimate of the value of library staff activity is transformed into policies of support in time, money, and other resources. Many of the observations made by respondents indicated that this is difficult for some. Besides his own attitude, it appeared, the administrator has to take into account the attitudes of others, the costs in relation to resources, the peculiarities of the local academic environment, and other elements. Though the findings in the various categories of activity differed, it can be roughly generalized that about three-fourths of the library administrators who favored the involvement of librarians in university activities appeared able and willing to support such involvement at some level and in most categories. This seems indeed like widespread support. The volunteered comments of the respondents, however, indicated that such assistance is often small, it may be extended very selectively, and in some categories the over-all volume of activity on individual campuses is quite low.

**Teaching**

Of all the activities in which their staffs might engage, teaching was by far the least popular with library directors. Even so, the 71 per cent who said they encourage it constituted a very substantial sentiment in favor of it. Two-thirds of the respondents reported that librarians are given time from their schedules to do teaching, and a remarkable 89 per cent reported that librarians teach courses in their institutions. Librarians were found to teach library science and bibliography only slightly more than subjects outside the library field.

Several points of a qualifying nature should be made. Though most institutions reported some librarians teaching, the comments volunteered by the respondents indicated that the volume of such teaching on each campus tends to be very low. Only a few people on each staff, apparently, possess both the talents and the desire needed for teaching to take place. It is interesting to note that when conditions for teaching exist, library directors usually permit the staff member to go ahead regardless of the director's own attitudes in the matter: 86 per cent of those who encourage teaching reported that they had staff members so engaged, but 78 per cent of those who do not encourage it also reported the same activity. As to time off, the comments revealed that university policy, rather than internal library policy, often determine what arrangements are made,
or not made, to accommodate teaching. Librarians apparently follow prevailing campus patterns whether that be allowed time, extra compensation, or divided appointments.

**Research**

The response was almost unanimously in favor of encouraging librarians to do research. Most library administrators are also willing to support research activity: 76 per cent said they allowed time for research, and 83 per cent said they gave some sort of financial assistance. About 60 per cent answered that the research need not be related to library operations or problems, but even so the number of librarians reported as working on library subjects exceeded the number working on other subjects by a ratio of about two to one. For the libraries reporting the number of staff members who had engaged in research in the last three years, the range was from zero to twenty-five people, with the median falling at four.

Though the number of institutions supporting the research activities of staff members was high, support seemed, from the comments, to be extended cautiously, with an eye to the value of the project, the promise of the individual, and the cost to the library. A frequently expressed sentiment was that while assistance was available staff members should contribute substantially of their own time. Respondents referred to university and off-campus funding to such an extent that it seems likely that support from sources outside the library is playing a prominent role. The kind of in-house support reported to be given by libraries ran mostly to copying service and other easy-to-give assistance in the same categories suggested in the questionnaire.

**Writing and Publication**

Every respondent said that librarians should be encouraged to write and publish. About 78 per cent reported that they allow time for staff members to prepare articles, though a few stated that they also expect writers to work on their own time as well. Seven out of eight library administrators give some kind of recognition for writing and publishing. By far the most common action was to take this activity into account in recommending advancement in rank, salary, or tenure. Other recognition comes in the form of publicity, mention in official reports, and general commendation and encouragement.

**Consulting Work and Surveys**

Even though most library administrators regard consulting and surveying as beneficial, the comments indicated that the actual volume of work, free or paid, is very small; and, either because of lack of demand or because the consultant’s or surveyor’s employer cannot afford it, the volume is not expected to increase much. About 86 per cent of the libraries were reported to give time off for free consulting; 74 per cent would give the time when the consultant is paid. The corresponding proportions for surveys were 83 per cent and 72 per cent. As with some other activities, the staff member who is not given the time seems often to be allowed to charge his time against vacation or to make up the time.

**Campus Committee, Council, and Board Assignments**

If campus committee work were the chief criterion of librarian identification with the educational enterprise, the conclusion might be reached that librarians have progressed quite far in this direction. All library administrators indicated they were generally in favor of this kind of activity, and 98 per cent reported they had staff members serving on campus bodies.

There seemed to be a variety of attitudes toward actively trying to place librarians on faculty committees. About
74 per cent reported they make an effort, but some of these commented that their efforts are modest and infrequent. Some said or implied that on their campuses it is unnecessary, even unseemly, to seek assignments since they will be made by proper authority automatically.

Respondents were not asked to tell how many librarians on their campus hold committee posts, but enough volunteered this information to give the impression that the number varies considerably. The nature of assignments also varies greatly. In status they range from campus housekeeping chores, such as parking or safety, to high-level advisory responsibility. Some assignments (like teaching media, publications, archives) are in areas of some relation to librarianship, but others are of general academic interest. Some draw on the specializations of subject librarians, a conspicuous example (twelve instances) being committees for various area study programs. An interesting, but perhaps predictable, group of assignments (ten instances) has been to committees on computer centers, administrative data processing, and campus ID cards.

Professional Service on a Local, State, and National Basis

Library administrators not only believe in professional service in library organizations but also seem to support it as much as possible. All of them said they give time for professional activities and almost 99 per cent said they pay expenses. The greatest problem, as might be guessed, is the inadequacy of travel budgets. When resources are low, various schemes were reported for curtailing costs: fractional refunding, low per diem allowance, restriction on the number and length of trips, selectivity in persons permitted to travel, rotation of permission to travel, carpooling, selectivity in allowable purposes for travel, and others. Seventy-eight per cent said they paid some expenses to national meetings for staff not on programs or committees. Several who said this, however, indicated that these people were given a lower priority for funds and might in general receive less support than those who had business at the meetings.

Leaves of Absence

Directors of libraries generally (92 per cent) thought it beneficial to grant leaves of absence to librarians to study elsewhere, and many of them had had some opportunity to reap the benefits. Eighty-two per cent reported that librarians are permitted by university regulations to take leaves of absence for periods of time usual for other faculty members. It was clear, however, from the comments that the leave might be given with full pay, with reduced pay, without pay, or with some combination of these according to a formula; no data were gathered on which pattern prevails. Respondents from 43 per cent of the institutions reported that librarians had been given leave for study or foreign assignments within the last three years. The examples given showed that the travel had been world-wide and for a great variety of purposes.

Participation in Nonlibrary Professional Association Work

Though library administrators favor (by 92 per cent) staff participation in nonlibrary professional associations, their support for it lagged somewhat behind that for some other categories of activity. Time off is given by 85 per cent of the institutions, but expenses are paid (probably to a very limited extent) by only 47 per cent. The comments suggest that the same budget problems exist in this case as for the library associations, but that participation in these organizations is given a lower priority for funds. The questionnaire asked for examples rather than numbers of staff engaged in nonlibrary professional association activity. The examples, along with comments,
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however, suggest a rather high level of activity and showed remarkable diversity. The organizations mentioned included AAUP and other educational associations; AHA and other historical societies; a wide variety of subject-specialized associations in the arts, the social sciences, the natural sciences, and technology; and several organizations, such as the National Microfilm Association, connected with, or peripheral to, the library and information fields.

**Participation in Nonprofessional Local Activities**

Though library directors are less enthusiastic over the civic and other non-professional activities of their staffs than over any of the professional activities except teaching, an overwhelming 89 per cent reported they considered it advantageous to their libraries. Few, however, went further than merely to support this kind of activity. Of those who favored such activity, 39 per cent reported that they neither gave time nor paid expenses for it. Just on giving time, the response was fairly divided: 59 per cent give it—at least to some extent—and 39 per cent do not. Very few directors could justify paying any expenses; 86 per cent of those who say they generally approve of these activities reported they do not pay expenses for them.

**Comments**

It appears that college and university librarians are given extensive opportunity to participate in the educational enterprise when they have the desire and the capability of doing so. There seems to be an underlying fear, however, that participation in the peripheral activities might detract from the basic service function of the library. It is true that most librarians are required to follow a relatively inflexible schedule which cannot be relaxed to any great extent without causing service to suffer.

Because of the differences in the assignments and responsibilities of librarians and teaching faculty, perhaps librarians should not expect to have the freedom of scheduling that teaching faculty have. The library must accept as its main function responsibility for providing the materials of scholarship and research to students, faculty, and scholars. The library cannot meet this responsibility if its staff is allowed to operate on an unorganized or loosely organized basis such as the teaching faculty may do.

Perhaps there is not so great a problem as would appear at first glance. Probably librarians as a group should not be expected to engage in most of these activities—for example, research and consultation—to the same extent as the faculty. Most faculty either already have or are studying toward the doctorate. Most librarians do not have the doctorate, comparatively few are working toward it, and most library positions do not require it. Many librarians have neither the interest to do extended research nor should it be expected of them because of the nature of their work. Those who are capable and have the desire to do research seemingly have that opportunity in most libraries. Where this opportunity does not exist, the administration would be wise to provide it.

Even if the librarian cannot follow the schedules of the teaching faculty and engage in certain activities to the same extent as the faculty, the nature of his work draws him close to all the educational and research activities of the educational institution. Also he must possess particular academic qualifications and specialized knowledge which the teaching faculty does not have. These justify giving him faculty rank even though certain accommodations must be made. ■ ■
Uganda’s University Library

Concentrating primarily upon the library at Makerere University College, the author describes generally the state of the academic library art in East Africa. He points to many contemporary and forward-looking developments that have occurred in recent years, and he also animadverts upon unfortunate reactionary tendencies. Although all libraries there need increased support, it appears at this time that Makerere is in greatest need of top administrative understanding and concern. Circumstances appear promising, however.

THE COLLEGE. Makerere University College is the oldest, largest, and best reputed institution of higher learning in East Africa. It is, moreover, the big-brother college of the three constituent colleges making up the University of East Africa, the other two being University College Dar Es Salaam and University College Nairobi. The college is composed of six faculties: arts, science, social sciences, medicine, agriculture, and education. The three last named are designated university faculties. That is, although some basic courses in education, for example, may be taught at Nairobi and Dar Es Salaam, students wishing to take a degree in education are, at least for the present, sent to Makerere from the three East African countries. Likewise, students wishing degrees in law are sent to Dar, whereas those wishing degrees in accountancy or engineering are sent to Nairobi. After 1970, however, it appears that the three constituent colleges will develop into three separate universities with certain coordinating ties. Thus, already Dar and Nairobi are establishing medical schools, and Makerere can be seen to be laying the foundations for faculties of law and accountancy. Meanwhile, Uganda Technical College, offering courses on the secondary and junior college levels, is taking steps to upgrade its library to university standards, and some knowledgeable persons forecast its becoming the engineering and technical branch of the future Makerere University. All of these developments and possible developments, of course, suggest implications bearing directly on the Makerere University College library.

In addition to the above-named faculties, Makerere University College is the home of its well known school of fine art, the East African school of librarianship, the Makerere institute of social research (formerly the East African institute of social research), the department of extra-mural and extension studies, and the national institute of education. Altogether, the faculties, schools, and institutes at Makerere provide courses of study leading to fifteen different diplomas and degrees, including the PhD.

Total enrollment for the academic year 1967/68 was near two thousand, including some two hundred postgraduate degree and diploma students. Established posts for teaching staff exceeded two hundred, with another one hundred or so supporting research and technical staff. Staff and students at Makerere carry on vigorous research programs, and students
and scholars come from all parts of the world to engage in research and participate in its institutes and study programs.

THE LIBRARIES

Serving the complex library clientele described above is a system of three related libraries, consisting of the main library, the Albert Cook library (medical), and the National Institute of Education library, plus the autonomous Institute of Social Research library and numerous autonomous departmental libraries.

The main library. The main library building is a jewel of modern tropical architecture set centrally in a campus noted for its beauty. With floor-to-ceiling windows all round, it is light and airy. An arrangement of individual study tables placed one behind the other in a file next to the windows, with open book and periodical stacks to the inside, creates an atmosphere conducive to study and quiet. Several well-placed lounge areas on each of the three floors contribute to the deceptively relaxed appearance of the building. Altogether, seating in the building can accommodate a total of 382 readers. Facilities for readers do not include carrels. Several "research tables," however, are available for staff and postgraduate students engaged in research. These are tables considerably larger than the individual study tables mentioned previously which may be reserved by individuals for periods of up to two months, the number available being somewhat limited. There is not a great demand for those research tables located in areas open to public access, but the tables in the restricted Africana section usually have a waiting list.

Problems related to the building are mostly administrative and perhaps stem from inadequate planning. For although the building is beautiful and a lovely place in which to work, it is limited functionally. There is considerable wasted space, and the work areas are so arranged that so far it has not been possible to produce an entirely satisfactory and efficient flow of work. The size of most work areas has become inadequate. A great deal of time is wasted in moving materials up and down, and back and forth, instead of in a steady forward flow. No doubt when a new extension is planned the present building will be re-studied and many of its present deficiencies remedied.

The original part of the present building was new in 1958. An extension, about one-third of the present structure, was added in 1962. Planned to accommodate about two hundred thousand volumes, the building is again becoming overcrowded. Another extension is anticipated perhaps for 1968. The first extension was linear, and, unfortunately, the new extension will also have to be linear or lateral. Although the present building is strong enough to bear books at any point on its two upper floors, it is not strong enough to be extended upward. Administratively, upward extension would be preferable to linear or lateral extension, and aesthetically it would probably be preferable also. If the new extension should not be forthcoming soon, the librarian will be faced with such choices as to whether to provide more stacks at the expense of the growing demand for seating space or whether to resist the demands for more seating accommodation in order to provide required additional shelving. An alternative which would give only temporary relief would be to move existing shelves closer together. Such a move would sacrifice the comfortable aisles presently enjoyed by readers and library staff alike.

Organization of the main library. In addition to the traditional orders and cataloging sections, the main library consists of a periodicals section, a special collections section, and a bindery and a printing press combined with photographic services. As an organiza-
tional entity a reference section is conspicuously missing, though a ragtag collection of general reference books does exist. Bibliographies are shelved separately in an area somewhat remote from the general reference books. The loan desk is managed by clerical staff and gets whatever supervision harried professional staff members can spare it.

Refusal of the old-school academics and the central administration to concede the necessity of departmentalization in a modern university library has hindered the work and the desirable development of the library. The attitude which prevails above all others outside the library is that the library does not have catalogers or order librarians—it just has "librarians." The failure to recognize that the library has grown into a complex organization with essential needs for both specialists and generalists on its staff has caused a fine library to deteriorate drastically.

This outmoded attitude at Makerere is particularly difficult to understand in view of the fact that the question of "recognizing" departmentalization of the library has not arisen at other African libraries. Departmentalization is understood to be a sensible method of organization in other institutions of higher learning, and both librarians and administrators and other colleges and universities in the area are surprised to learn that the question has even arisen at Makerere. At Dar Es Salaam the library is equated as a faculty, and the librarian has all the prerogatives of a dean except in salary and heads of administrative units, and commensurate salary. Organizationally, the central library has just been reorganized into two major divisions: The technical services division and the readers' services division. Each division is administered by a specialist librarian with the rank of associate librarian. The technical services division consists of the acquisitions and cataloging departments, each headed by a specialist librarian. The readers' services division incorporates the circulation, documents, periodicals, and reference departments, each in charge of a specialist librarian.

**Services.** In addition to serving the teaching needs of the college, the Makerere library is called upon to provide materials to serious students and researchers all over Uganda and through its photographic services and interlibrary loans to researchers and scholars throughout East Africa. In the absence of an effective public library service or national library, Makerere library finds itself obligated to assume responsibilities in those directions as well, though the needs of schools are left to the In-
stitute of Education library. Having the greatest resources and the most comprehensive research collections in all of eastern Africa, it can hardly refuse. Some elements outside the college, however, are dissatisfied with the services available at the Makerere main library and advocate the establishment of a national research library. To follow this line would involve a costly and extravagant duplication of library resources in a small and poor country. This would seem to be particularly so in view of the relative ease with which facilities and services at Makerere could be expanded and developed at a much lower cost. In Zambia the matter of whether the university library will also be recognized as the official national research library has already gone as high as cabinet level in the government, whereas Makerere has not even got around to thinking about the matter.

It is not surprising that persons requiring and wanting good library service should feel resentment toward an institution which maintains a vast storehouse of information yet has never felt the need of developing a reference and information service. In this respect, it is not far wrong to say that Makerere does Uganda and East Africa a disservice, for the prevailing attitude in the college is that old-fashioned notion that an academic library is a building in which library resources are stored and in which students find a quiet place to study their lecture notes. Makerere has yet to discover that a library which fulfills its rightful function is a service organization. This is not to say that there are no academics at Makerere with an appreciation of what a library should be; it is just that their voices, when raised at all, are ignored. One surprising phenomenon is that foundations and other aid organizations have contented themselves with the potentials of service from the Makerere library and have not insisted that the library be adequately equipped as a service organization before pouring great sums of money into the college for teaching and research programs.

It would seem advisable when evaluating teams are sent to universities in developing countries that they include competent librarians to assess library resources.

The collections. The total accessioned book collections of the main library stood at 100,100 volumes in May 1967. The rate of accessions is approximately six thousand volumes a year. The library receives currently some twenty-two hundred and fifty periodical titles, and in the academic year 1966/67 it added more than five thousand separate items to the documents collection. The combined collections of documents and bound volumes of periodicals total perhaps eighty to ninety thousand. The library also has significant holdings of newspapers, microfilms, photographs, manuscripts, and archival materials. Its collection of East Africana is the envy of visiting Africanists. [Further and more precise details regarding the collections may be found in the Librarian's Annual Report for 1966/67.]

Staff and staffing problems. To man the organization thus far described the library had through the years acquired a total of six established posts for professionally trained librarians, despite the fact that the college grew steadily from an institution of sixty teaching staff and 272 students in 1956 to an institution of two hundred teaching staff and nearly two thousand students in 1966. While the library's collections have grown steadily, the college community has more than quintupled, and demands on the library have increased enormously along with all kinds of development in all of East Africa—the library's established professional posts have remained virtually static for the entire ten-year period.

Working conditions in the library de-
teriorated to the point that during a period of approximately one year ending in October 1966 the entire professional staff of the main library, some of whom had been with the library for ten or more years, resigned to accept better prospects elsewhere. The lone exception was an Ugandan librarian who had been with the library about two years. Because of the seriously inadequate provision for professional staff in the library, essential work chronically went undone or was done either poorly or incorrectly by inadequately supervised clerical staff.

During the academic year 1966/67 agitation began in the library for adequate staffing in both the main and medical libraries. The typical attitude of the central administration and its old-school academic advisors which the library faced at the beginning of its crusade (and still faces to a somewhat lesser extent) was expressed by one of the highest officers in the central administration who insisted at the beginning that "all that routine work in the library, such as cataloging" can be done by high school graduates. Fortunately, despite considerable opposition from certain academics, the campaign waged by the library resulted in considerable modification of the attitudes held by the central administration and in some of the new posts so urgently required by the library.

The library's campaign resulted in the establishment of two additional professional posts from July 1967, plus one additional post in July 1968. These additions bring the library's established professional posts (including medical) to nine in 1967 and ten in 1968. This compares with twelve established professional posts at Dar Es Salaam in 1967, plus two trainees overseas for professional studies who will be added to the establishment upon their return, bringing established professional posts at Dar to fourteen in 1968. Whereas Makerere ex-

pects to have ten established posts in 1970, Dar Es Salaam expects to have about seventeen.

The University of Zambia has established fifteen professional posts for 1967 and expects to establish more as demands on the library increase. Haile Sellassie I University has twelve established professional posts for its libraries in 1967, plus five additional to the establishment. Since it has several sub-libraries, this showing of strength in numbers is not quite as impressive as it might appear at first sight.

Recruitment of staff. Recruitment of nonprofessional staff presents little problems. More and better qualified applicants for clerical positions become available all the time. The big problem relative to nonprofessional staff is, as it is in so many other libraries, how to get rid of deadwood. The employees' union at Makerere is so strong that it is virtually impossible to get an undesirable employee dismissed. To be successful, the librarian has to be prepared for a long and gruelling campaign of compiling documentary evidence in the way of written notices of unsatisfactory work sufficient to sustain dismissal charges.

The library, like the rest of the college, has through the years been dependent on expatriates to man its professional posts. Consequently, recruitment problems are more acute. Obviously, selecting staff on the basis of their paper qualifications and on the results of interviews overseas which the librarian has not attended presents difficulties. Oddly enough perhaps the big problem is not a dearth of applicants, despite the scarcity of librarians everywhere. Makerere library continually gets inquiries about work opportunities and unsolicited applications. Probably the biggest hindrance to successful recruitment is the inefficient, cumbersome, and outmoded recruitment and appointment procedure followed by the college for all academic, professional librarian, and
senior administrative posts. Even candidates strongly desired by the library or teaching departments and begging to be allowed to work at Makerere finally give up in despair and accept other posts.

Another problem that the library faces is that most of the applicants are inexperienced, whereas under present staffing conditions the library has not been able to take on anybody who does not have enough experience to work with a minimum of supervision. The library establishment, moreover, is too small to permit experimentation in shifting staff about. Ignorance of conditions in Africa in general, and of Uganda and Kampala in particular, very likely prevents some librarians who would most probably enjoy working in Africa from investigating the possibilities. But the working conditions at Makerere for librarians have not been inviting, either. If they were answered honestly, it would take only a few pointed questions to let an interested librarian know that conditions at Makerere have been extraordinarily difficult.

All this is bound to change for the better, however. Already the climate in the college has warmed considerably toward the library’s requirements. New posts have been added to the library’s establishment, and it does not now seem to be over optimistic to expect that eventually the library’s staffing will be somewhat more commensurate with its needs. Moreover, a very hopeful note is the college’s willingness to inaugurate a recruitment program aimed at attracting local college graduates into librarianship by awarding them scholarships for professional training and then by bringing them back to a library with a new atmosphere, one in which they can hold their heads high, proud to be a part of it. The library now has two Ugandan graduates with library qualifications on the staff, and from 1968 it expects to have five.

**The medical library.** The Albert Cook library, named for a medical missionary to Uganda, is located in the modern Mulago Hospital complex on Mulago Hill, just across a little valley from the main Makerere campus on Makerere Hill. The original part of the library building was new in 1951, and a new extension was completed in 1966. The extension increased the floor space by some 63 per cent. The library now provides seating accommodation for 160 readers and shelf space for approximately fifty thousand volumes. The total accessioned stock, including bound periodicals, stood at about 25,400 in May 1967. The annual rate of accessions over the past four years averaged about sixteen hundred volumes.

Over the past ten years the medical school has increased from thirty-three teaching and research staff in 1956 to 145 in 1966. The medical student body has grown from sixty-two to 324 in the same period. The collection has grown from 12,621 accessioned volumes to over 25,000 in that period, and the number of paid subscriptions for periodicals increased from 171 in 1958 to 290 in 1966. The total number of periodical titles currently received in the medical library exceeds four hundred.

In addition to the staff and students of the medical school the library serves the staff of Mulago Hospital and provides library services, including photocopies of journal articles, to more than one hundred doctors and research workers throughout East Africa. Requests for medical library services from outside the medical school increase every year.

Despite the tremendous demands on the medical librarian, which the above statistics make obvious, the college still has not seen fit to establish more than the one professional post which the library “enjoys.” One consequence is that when the medical librarian takes leave (up to three months’ entitlement in alternate years) the medical library remains
without the services of a professional librarian if staffing conditions in the main library do not permit the sending of a relief librarian. Another consequence is that the medical librarian is continually confronted with the dilemma of choosing which professional duties to defer to the nonprofessional staff. In a way, there really is not much choice, when one considers the understandable reluctance of the medical school staff and other doctors and researchers to accept reference service from clerical staff, who rarely have been above the level of high school graduates. It may be worth bringing out at this point that only in the professional libraries at the medical school and the institute of education have reference and information services been developed to any extent at all at Makerere. A few years back provision was made for a secretary/assistant to the medical librarian. Sometimes the medical librarian has been fortunate enough to have a college graduate filling the assistant's post. One grave consequence which has arisen from the circumstances described here is that, although the medical librarian has continued to do the classifying, the cataloging has generally been done by the secretary/assistant (more recently called “special assistant”). The author catalog and the classified catalog have perhaps suffered little from this arrangement, since LC cards are used and the classifying is done by the medical librarian. But any skilled cataloger who has ever had to edit and revise a subject catalog maintained for many years by catalogers poor in experience does not need a detailed report to understand the deplorable state in which the subject catalog at the medical library finds itself today. He has only to draw on his own experience to conjure up an accurate picture of all the unwise decisions, wrong choices, and inaccurate representations which have got themselves involved in that catalog.

The medical library has a desperate need for an experienced medical cataloger to edit and revise its subject catalog. Moreover, it is in desperate need of at least a second post for a professionally trained librarian. What is true of the catalogs at the medical library is true of the catalogs in the main library to a lesser extent.

The medical library subcommittee fully supports the medical librarian and has pleaded in vain with the central administration for additional professional staff. It is an unfortunate circumstance for both the medical and the main libraries that those with the most influence in the college with regard to library matters have been academics who do not avail themselves of the library’s facilities and who do not see any real value in libraries anyway. And it is of considerable significance that the chairman of the parent library committee may be numbered among that group.

The institute of education library. Until 1965 the institute of education library was completely autonomous from the college librarian. In that year and through the efforts of the college librarian it was “brought into a relationship with the main library similar to that of the Albert Cook library. Owing to the different constitution and financial support of the institute the connection is not identical, but a library committee with members from the institute and the college, including the librarian, has been formed to decide policy matters and a subcommittee to consider book and periodical purchases.” [cf, the Librarian’s Annual Report 1965/66.]

The library serves the faculty of education and its BEd and postgraduate DipEd students, as well as the institute of education, which conducts a one-year upgrading course for tutors in Uganda teacher training colleges. It also extends borrowing privileges to the staffs of training colleges and schools throughout Uganda. Altogether the institute of
of education library catered to slightly more than four hundred registered borrowers at the end of the academic year 1966/67. As facilities increase and services can be expanded, the demand will, of course, become greater.

The library has been manned by one professional librarian, who performs all professional duties in that library, including ordering and cataloging. It is expected, however, that an additional professional post may be added in the near future. The total stock includes over twenty thousand books, of which some seven thousand constitute a textbook collection. Acquisitions of books, substantial pamphlets, and textbooks for the year 1966/67 totaled more than twenty-five hundred. The library receives currently some eighty periodical titles. Total loans for the year were in the vicinity of fifty-six hundred. The education librarian puts out a bulletin/accessions list called "Notes and News." About twenty issues appeared during the year 1966/67.

Administratively, the institute of education library ought to be completely under the college librarian, preferably as a service unit only, with its ordering and cataloging done in the respective departments of the main library, as it is done in other universities in eastern Africa. The divided responsibility for finances should not present insuperable obstacles, and the benefits to be derived from the points of view of both economy and service recommend such realignment and reorganization.

The Institute of Social Research Library. The institute of social research library is a small working library of some three thousand books, plus a substantial collection of dissertations, conference papers, and unpublished manuscripts oriented to the needs of one of the most vigorous research programs of the college. About one hundred and fifty readers use the library regularly. It apparently has never been in charge of a professional trained librarian nor of anyone who has worked full time. The ties between the institute and main library seem never to have been adequately and clearly defined. It appears that the college librarian at one time exercised some degree of administrative control over the institute library but that somehow this influence got lost along the way. From all points of view it would be highly desirable that the institute of social research library be incorporated into the main library at least administratively if not physically.

Other autonomous departmental libraries. It is a regrettable policy which permits college funds to be used to hire unqualified persons to serve as librarians without any responsibility whatever to the college librarian and to squander college money on the establishment of wasteful and unnecessary duplicate collections on campus.

There is no justification for departmental libraries over which the college librarian is allowed to exercise neither influence nor control. If the college actually needs departmental libraries, and opinion is divided as to whether it does, they would more properly be planned in cooperation with the college librarian and placed under his administration. The present practice results in wasteful expenditure of college funds through unnecessary duplication and in undermining the main library.

Ostensibly, funds are allocated to the departments for the purchase of reference materials which are required so frequently that purchase for retention in the department is justified. The heads of some departments, however, go far beyond this intention and set themselves up in competition with the legitimate library service of the college. One such library is that of the department of mathematics, a library of some three thousand titles. Through the years the department, one of the smallest in the college, has acquired unto itself one of
the largest allocations of college funds for the purchase of so-called reference books and periodicals. Why, one may well ask, does the department of mathematics require £200 per annum for books and periodicals ostensibly for office use, whereas the department of surgery requires only £20, and fine art, political science, and religious studies £40 each?

The obvious answer seems to be that in the case of mathematics the professor has set himself up as a rival to the college librarian. He has managed for himself a departmental book allocation larger than the allocation from the main library's book funds for mathematics. Thus the mathematics department library is growing at a greater rate than the mathematics section of the main library's holdings. Moreover, the mathematics department library is a circulating library to students, though no account of this has apparently ever been made to the college librarian. It would seem to be a possible conclusion that the professor of mathematics cum chairman of the library committee has been empire building at the expense of the main library.

The case cited here is not the only one which could bear some investigation to the college's benefit. Considering certain factors, however, it seemed to be the one most worthy of pointing out.

In the matter of autonomous departmental libraries, Makerere could well learn from the younger universities at Dar Es Salaam, Lusaka, and Addis Ababa. In all of these institutions it has been recognized that autonomous departmental libraries can be wasteful and cancerous growths, and steps have been or are being taken to eradicate them. University of Zambia library makes permanent loans to departments, but the books remain the property of the central library. Haile Sellassie I University goes even further in defining the prerogatives of its central library and librarian and in protecting the interests of its library. Everything is set forth clearly and unequivocally in the university's "Statute on the Library" of 1965, a document which merits careful study by any university or college authorities wishing to reappraise the status of their own library.

Whereas other universities in the area have taken firm measures against autonomous departmental libraries, Makerere has buried efforts to put its librarian in charge of all library materials in committees. [cf. The Librarian's Paper on Departmental Collections, LC/65/1; Library Committee Minutes Nos. 1/65-2/65; Academic Board Minute 2404 (Library Committee Minutes) of its 179th meeting on 24 March 1965.]

The library committee. The composition of the library committee at Makerere is similar to that at University College Dar Es Salaam and University of Zambia, with, however, certain significant differences. Whereas at Makerere the deputy librarian is officially present only as a nonvoting observer, at both Dar Es Salaam and Zambia the deputy librarian is, ex officio, a voting member of the committee. At Zambia the deputy librarian is also, ex officio, the secretary of the committee. This arrangement is especially good in that it relieves the librarian of the responsibility of taking notes and leaves him free to concentrate on the main business of the meeting. In contrast to the situation at Makerere where the librarian sits on academic board without friends, so to speak, the chairman of the library committee at Dar Es Salaam takes the library committee minutes in academic board and presses the library's interests, with the librarian sitting as his advisor. This, of course, requires a chairman who is fundamentally concerned about the quality of the university library and the service it renders as well as one who is both informed and willing to be informed on modern library practice.
The situation at the University of Zambia is even better, in that the vice chancellor is not only genuinely interested in the library and regularly avails himself of its facilities but he also chairs the library committee and takes an active interest in library affairs. This contrasts sharply with the situation at Makerere, where the principal apparently has never even attended a library committee meeting and only sets foot in the library when some important official, such as an ambassador, requests him to accept a gift to the library in the library. In fact, one of the serious shortcomings at Makerere is that neither the principal, the former vice principal, the secretary/registrar, nor the chairman of the library committee use the main library so they have no idea of what goes on inside a modern library.

At Haile Sellassie I University the library committee is “a standing committee consisting of one representative of each Faculty, School, College, and Institute of the University, the Librarian and, ex officio, of the Academic and Business Vice Presidents.” [cf. its Statute on the Library.] Thus from the point of view of its library committee the library at Haile Sellassie I University is also on a par with the faculties.

A view to the future. There seems to be little reason to doubt that conditions in the libraries and library service at Makerere University College will continue to improve if leadership in the library remains vigorous. There is, however, uncertainty as to whether Makerere library will retain its imminence. Until recently Makerere library has been the most eminent library in eastern Africa and second only to Ibadan University library in all of Black Africa. In recent years the three new university libraries discussed above have arisen in eastern Africa to present a strong challenge to Makerere’s leadership in library service and development. In fact, about the only university library in eastern Africa which does not present any challenge to Makerere, with the possible exception of the University of Malawi library, is University College Nairobi library.

The University College Dar Es Salaam library, though much younger than the Makerere library and presently serving a college about one-third the size of Makerere University College, has been much better provided for in the way of permanently established posts at all levels. In 1967, for instance, whereas Makerere has provisions for nine professional librarians for both the main and medical libraries, Dar Es Salaam will have twelve. Dar Es Salaam as yet has no medical library, but when one is established, it will have an establishment additional to that of the main library. It is not surprising, then, to observe that library service is much more advanced in many ways at University College Dar Es Salaam than at Makerere. Nor is it surprising that the complaint should arise that the development of library services at Dar Es Salaam is held back by Makerere’s backwardness in library affairs. Since the university grants committee passes on the budgets and sets the total expenditure on all three of the constituent colleges of the University of East Africa, these discrepancies are noted, though not always correctly interpreted.

The University of Zambia library, like the University College Dar Es Salaam library, is fortunate not only in having the keen and active support of the university as a whole but also in having in the country a soundly established public library service with competent and vigorous leadership.

In fact, a librarian’s visit to Dar Es Salaam and Lusaka turns out to be an exciting and stimulating adventure. At the two universities themselves the existing library building at Dar and the proposed building at Zambia, planned (Continued on page 212)
Implications for Libraries of the National Sea Grant College and Program Act of 1966

The National Sea Grant College and Program Act of 1966 provides that $20,000,000 will be spent for the development of Sea Grant Colleges. Congressional approval of this act characterizes a general awareness of the need for development of marine resources and recognition that institutions of higher learning are the best agents for training manpower and conducting basic research in this field. The educational and library implications are far reaching.

The National Science Foundation is presently considering proposals from a number of institutions which possess the necessary laboratory facilities, research vessels, and curriculum development to qualify for receipt of Sea Grants. The effect upon the institutions designated as Sea Grant Colleges will be felt immediately in a proliferation of research projects and marine science curriculum development.

Under the National Sea Grant College and Program Act of 1966, PL 89-688, the National Science Foundation is charged with administering $20,000,000 in federal funds through the fiscal year ending June 1968, for the establishment and development of Sea Grant Colleges and research programs in the fields of marine science, engineering, and related disciplines. According to the Act, development of marine resources includes conservation and economic utilization of natural resources; development of marine commerce and engineering; oceanography; and study of the economic, legal, medical and sociological problems arising out of the management and control of the natural resources of the marine environment. The Act defines the marine environment as the oceans, the continental shelf, and all submerged lands to a depth of two hundred meters, as well as the Great Lakes, and all similar submarine areas adjacent to the United States and its territories.

The proposal for a Sea Grant College was first introduced in 1963 at the ninety-third annual meeting of the American Fisheries Society. The term “Sea Grant College” was used to draw a parallel between the present need for ocean resource development and the need for development of land at the time of the Morrill Act of 1862 which established the Land Grand Program. The idea attracted support and resulted in the Conference on the Concept of a Sea Grant University at Newport, Rhode Island, in

1 U.S. Statutes at Large, LXXX, 998.

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October 1965. At this conference the concept crystalized and the process of developing the enabling legislation began as more than two hundred delegates from thirty states, representing institutions of higher learning, private industry, and state and federal governmental agencies discussed the need for and promise of development of marine resources.

The long-range implications of the Act are far broader than first examination might indicate. The past two decades have witnessed a proliferation on a world-wide scale of an awareness of the vast potential of the seas and their profound effects upon the land. Improving the efficiency of fisheries, control of water pollution, mining the sea floor, experiments with undersea dwellings, farming the sea, desalination of sea water, and weather modification are but a few of the areas in which research is presently being conducted. This trend toward development of marine resources and exploration of the seas can only be expected to continue to increase, and virtually every field of science is likely to conduct research related to the marine environment.

The true significance of the National Sea Grant College and Program Act of 1966 lies not in its relatively modest beginning of funding a few more research projects, but rather in the fact that the Congress has shown by its enactment an awareness of a need for developing the potential of the oceans and furthermore has rightfully placed the responsibility for this development, especially the training of manpower and basic research, upon the shoulders of the institutions of higher learning.

At the present time there are sixty-four institutions of higher learning with curricula oriented toward the marine sciences. Thirty-four offer programs leading to a PhD degree in either oceanography, marine science, ocean engineering, or fisheries; thirty-five offer master's degree programs, and fourteen offer bachelor's degrees. Forty-seven institutions offer marine sciences courses at the graduate and undergraduate levels which may be applied to related degrees, but do not offer degrees specifically in the area.

In the next decade we may expect a very large increase in the number of graduate and undergraduate level courses being taught relating to the marine environment, as well as an increase in the number of institutions teaching them. The development will affect many parts of the university curriculum. Courses can be expected to be developed in areas now generally considered to be unrelated to the marine environment and to extend into such diverse fields as medicine, law, sociology, economics, political science, and business, as well as engineering and the traditional sciences.

Library collections will, of course, be expected to keep pace in order to support the teaching and research resulting from this new thrust seaward. A considerable increase may be expected in the volume of publication in the field. In addition to the usual problems associated with acquiring and processing this expected flood of publications, the problem of easy access to library material must be solved.

Consolidation and improvement of bibliographic control over the technical reports, translations, and government documents, as well as over trade books and journals will be a necessity. The indexing is presently scattered throughout many sources and is often inadequate. There is a need for a rapid information-transfer network such as is currently

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being developed in the medical sciences. Finally, methods for supporting teaching and research at a growing number of coastal marine research institutes and stations, often hundreds of miles from the parent institution, either through collection duplication or rapid transmission of information, must be developed. While on-site research is not unique to marine science, it is, by the very nature of the subject, characteristic of it.

The National Sea Grant College and Program Act of 1966 is significant legislation which will probably alter the direction of curriculum development and research in many institutions of higher learning. The extent to which this is true is, of course, dependent upon the continuation of the current trend for the federal government to support development of marine resources. All indications seem to be that this trend will both continue and increase.

UGANDA

(Continued from page 209)

as university library buildings from the start, are a far cry from the inadequately planned development of the physical plant at Makerere, which remains nothing more than a small residential college library. Moreover, one cannot help contrasting the enthusiasm and high morale in these two libraries with the cloud which has hung over the Makerere library during the last year or two.

If one accepts as fundamentally sound the following statement made by the university grants committee in England as far back as 1924, he can make his own deductions accordingly from the information adduced herein. Commenting on the condition of university libraries in England, the committee expressed itself thus: "The character and efficiency of a University may be gauged by its treatment of its central organ—the Library. We regard the fullest provision for library maintenance as the primary and most vital need in the equipment of a University. An adequate Library is not only the basis of all teaching and study; it is the essential condition of research, without which additions cannot be made to the sum of human knowledge." It seems hardly worth pointing out that the University Grants Committee was not composed of librarians.

However one looks at it, the future of Makerere University College is integrally tied to what it does with its library. In this respect, it would hardly seem unfair to conclude that the Big Brother of universities in eastern Africa has become a doddering reactionary, sitting at a fork in the road, looking backward over the way he has come and muttering foolishly about his own supposed greatness, while his more vigorous and progressive younger brothers overtake and stream past him up both forks of the road.
Foreign Press and Academic Libraries

In an effort to determine the extent to which American college students may gauge current trends in foreign thought, a questionnaire was sent to 350 academic libraries requesting them to check their holdings of foreign news serials.

The results indicate that academic libraries appear to give greatest news serial coverage to world powers and pro-western nations in their serial acquisitions, and that it is doubtless difficult for most college students to find a balance in the coverage of international events.

The last half century has seen the United States forced, politically and economically, to abandon its isolationism in world affairs. A large share of the problems of rebuilding Europe, of formulating a China policy, of preserving Korea and Vietnam, as well as of preventing nuclear disaster and total war has been thrust upon a people who had spent the greatest part of their history believing the best foreign policy was one of nonentangling alliances. With William McKinley went an era in which the American minded his own business.

A democracy which deals effectively in world affairs needs a mature population which can understand foreign affairs with tolerance and understanding. Whether it be in Saigon, Berlin, or Tel Aviv, our foreign policy can rise only as high as the American people will let it rise.

Sociologists have concluded that it is best to understand the actions of a group in the light of their own culture and traditions. The best way to judge the actions of foreign nations is likewise in terms of their predominant cultural thought and activities. Is it possible for the American citizen to locate sources which reveal the current trends in foreign thought and the reaction of foreigners to the day-to-day events of our time? Is it the responsibility of college and university libraries to provide this information?

A foreigner visiting the United States wishing to become acquainted with the most recent trends in American public opinion could find it reflected in the country's daily press and "slick" magazines. But can American students find similar information on foreign countries in their college and university libraries? The present study seeks to answer this question.

A questionnaire was mailed to three hundred and fifty college and university libraries which were selected from the American Library Directory. The sample comprised every third library in the United States with a total budget of over $25,000. The questionnaire contained a list of foreign news serials which librarians were asked to check against their holdings.

The list of serials was selected from those cited in Atlas, a monthly news and literary magazine which translates editorials, short features, and news articles from foreign serials. In formulating the list, seventeen issues of Atlas were examined, or every third issue from 1961.
to 1965. All serial titles mentioned two or more times in separate articles were placed on the list.

Of the three hundred and fifty questionnaires sent, two hundred and fifty-eight, or 73.71 per cent, were filled out and returned. Table 1 shows the total list of titles and the number of libraries which hold each title.

### TABLE 1

<table>
<thead>
<tr>
<th>Name of Journal Receiving</th>
<th>No. of Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Ahram (Egypt)</td>
<td>4</td>
</tr>
<tr>
<td>Al Akhbar (Lebanon)</td>
<td>1</td>
</tr>
<tr>
<td>Al Gomhouria (Egypt)</td>
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<tr>
<td>Anhembi (Brazil)</td>
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</tr>
<tr>
<td>Arts (France)</td>
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</tr>
<tr>
<td>The Asia Magazine (Hong Kong)</td>
<td>6</td>
</tr>
<tr>
<td>Carrefour (France)</td>
<td>1</td>
</tr>
<tr>
<td>Christ and Welt (Germany)</td>
<td>13</td>
</tr>
<tr>
<td>Corriere Della Serra (Italy)</td>
<td>6</td>
</tr>
<tr>
<td>Dagens Nyheter (Sweden)</td>
<td>1</td>
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<td>Daily Express (England)</td>
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</tr>
<tr>
<td>Daily Mirror (Australia)</td>
<td>0</td>
</tr>
<tr>
<td>Daily Telegraph (England)</td>
<td>0</td>
</tr>
<tr>
<td>Deutsche Zeitung (Germany)</td>
<td>4</td>
</tr>
<tr>
<td>Diario De Noticias (Brazil)</td>
<td>0</td>
</tr>
<tr>
<td>Drum (Ghana)</td>
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<tr>
<td>Eastern World (England)</td>
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<tr>
<td>The Economist (England)</td>
<td>180</td>
</tr>
<tr>
<td>Eleutheria (Greece)</td>
<td>1</td>
</tr>
<tr>
<td>Epoca (Italy)</td>
<td>20</td>
</tr>
<tr>
<td>Estado De Sao Paulo (Brazil)</td>
<td>2</td>
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<td>L'Express (France)</td>
<td>43</td>
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<tr>
<td>L'Expresso (Italy)</td>
<td>4</td>
</tr>
<tr>
<td>Far Eastern Economic Review (Hong Kong)</td>
<td>46</td>
</tr>
<tr>
<td>Le Figaro (France)</td>
<td>42</td>
</tr>
<tr>
<td>Le Figaro Littéraire (France)</td>
<td>67</td>
</tr>
<tr>
<td>Forum (Republic of South Africa)</td>
<td>4</td>
</tr>
<tr>
<td>Forum Service (England)</td>
<td>0</td>
</tr>
<tr>
<td>France Observateur (France)</td>
<td>3</td>
</tr>
<tr>
<td>Frankfurter Allgemeine Zeitung (West Germany)</td>
<td>34</td>
</tr>
<tr>
<td>Hindu Weekly Review (India)</td>
<td>33</td>
</tr>
<tr>
<td>International Affairs (Russia)</td>
<td>47</td>
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<tr>
<td>Izvestia (Russia)</td>
<td>42</td>
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<tr>
<td>The Jerusalem Post (Israel)</td>
<td>16</td>
</tr>
<tr>
<td>Jeune Afrique (Tunis)</td>
<td>5</td>
</tr>
<tr>
<td>Journal Do Brasil (Brazil)</td>
<td>2</td>
</tr>
<tr>
<td>Kurier (Austria)</td>
<td>2</td>
</tr>
<tr>
<td>Link (India)</td>
<td>13</td>
</tr>
<tr>
<td>Literaturnaya Gazeta (Russia)</td>
<td>31</td>
</tr>
<tr>
<td>London Observer (England)</td>
<td>34</td>
</tr>
<tr>
<td>London Times (England)</td>
<td>76</td>
</tr>
<tr>
<td>Ludas Matyi (Hungary)</td>
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<tr>
<td>Mainichi Shimbun (Japan)</td>
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<tr>
<td>Manchester Guardian Weekly (England)</td>
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<tr>
<td>Manchete (Brazil)</td>
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</tr>
<tr>
<td>Le Monde (France)</td>
<td>84</td>
</tr>
<tr>
<td>Le Monde Diplomatique (France)</td>
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</tr>
<tr>
<td>Il Mondo (Italy)</td>
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<tr>
<td>La Nacion (Brazil)</td>
<td>10</td>
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<tr>
<td>Nevszabadsag (Hungary)</td>
<td>0</td>
</tr>
<tr>
<td>Neue Zürcher Zeitung (Switzerland)</td>
<td>10</td>
</tr>
<tr>
<td>Neues Deutschland (East Germany)</td>
<td>2</td>
</tr>
<tr>
<td>Les Nouvelles Littéraires (France)</td>
<td>60</td>
</tr>
<tr>
<td>New Commonwealth (England)</td>
<td>8</td>
</tr>
<tr>
<td>Novy Mir (Russia)</td>
<td>40</td>
</tr>
<tr>
<td>L'Osservatore Politico Letterario (Italy)</td>
<td>1</td>
</tr>
<tr>
<td>New Statesman (England)</td>
<td>147</td>
</tr>
<tr>
<td>Palante (Cuba)</td>
<td>0</td>
</tr>
<tr>
<td>Paris Match (France)</td>
<td>162</td>
</tr>
<tr>
<td>Peking Review (China)</td>
<td>85</td>
</tr>
<tr>
<td>Philippines Free Press</td>
<td>5</td>
</tr>
<tr>
<td>Pictures of Greece (Greece)</td>
<td>0</td>
</tr>
<tr>
<td>Polish Perspective (Poland)</td>
<td>100</td>
</tr>
<tr>
<td>Polityka (Czechoslovakia)</td>
<td>1</td>
</tr>
<tr>
<td>Pravda (Russia)</td>
<td>64</td>
</tr>
<tr>
<td>Preuves (France)</td>
<td>20</td>
</tr>
<tr>
<td>Quadrant (Australia)</td>
<td>7</td>
</tr>
<tr>
<td>The Queen (England)</td>
<td>1</td>
</tr>
<tr>
<td>Quest (India)</td>
<td>15</td>
</tr>
<tr>
<td>Renmin Ribao (China)</td>
<td>7</td>
</tr>
<tr>
<td>The Reporter (Kenya)</td>
<td>30</td>
</tr>
<tr>
<td>Review of International Affairs (Yugoslavia)</td>
<td>24</td>
</tr>
<tr>
<td>Spectator (England)</td>
<td>105</td>
</tr>
<tr>
<td>Der Spiegel (West Germany)</td>
<td>92</td>
</tr>
<tr>
<td>La Stampa (Italy)</td>
<td>4</td>
</tr>
<tr>
<td>Statesman; Week-End Review (India)</td>
<td>23</td>
</tr>
<tr>
<td>Statist (England)</td>
<td>11</td>
</tr>
<tr>
<td>Stern (West Germany)</td>
<td>20</td>
</tr>
<tr>
<td>Suddeutsche Zeitung (West Germany)</td>
<td>8</td>
</tr>
<tr>
<td>Sunday Telegraph (England)</td>
<td>0</td>
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<tr>
<td>The Sunday Times (England)</td>
<td>18</td>
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</tbody>
</table>
As would be expected, the libraries with smaller budgets have fewer of these publications. Table 2 indicates the number of titles held for five different sizes of libraries.

The average holding per library was 8.4 titles. For the libraries with budgets under $100,000, foreign news coverage is very limited and in some cases non-existent. Eleven libraries hold none of the titles listed.

Representation by areas and countries show that libraries tend to represent major world powers, and generally pro-Western powers, at the expense of neutrals and lesser Communist nations. The holding of one hundred copies of Polish Perspective is an obvious exception to this generalization.

Table 3 is a numerical comparison of the countries’ representation on the original list with their appearance in American libraries.

### TABLE 2

<table>
<thead>
<tr>
<th>Number of libraries</th>
<th>Budget range (in dollars)</th>
<th>Average number of titles held</th>
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</thead>
<tbody>
<tr>
<td>34</td>
<td>0-49,999</td>
<td>3.2</td>
</tr>
<tr>
<td>78</td>
<td>50,000-99,999</td>
<td>5.2</td>
</tr>
<tr>
<td>78</td>
<td>100,000-499,999</td>
<td>8.6</td>
</tr>
<tr>
<td>14</td>
<td>500,000-999,999</td>
<td>19.3</td>
</tr>
<tr>
<td>15</td>
<td>1,000,000-</td>
<td>30.0</td>
</tr>
</tbody>
</table>

### TABLE 3

<table>
<thead>
<tr>
<th>Country</th>
<th>Titles Listed per Country</th>
<th>Percentage of List per Country</th>
<th>Titles Held per Country</th>
<th>Percentage of entire holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>1</td>
<td>1.07</td>
<td>1</td>
<td>0.04</td>
</tr>
<tr>
<td>Australia</td>
<td>2</td>
<td>2.15</td>
<td>7</td>
<td>0.28</td>
</tr>
<tr>
<td>Austria</td>
<td>1</td>
<td>1.07</td>
<td>2</td>
<td>0.08</td>
</tr>
<tr>
<td>Brazil</td>
<td>6</td>
<td>6.45</td>
<td>18</td>
<td>0.73</td>
</tr>
<tr>
<td>China</td>
<td>2</td>
<td>2.15</td>
<td>92</td>
<td>3.72</td>
</tr>
<tr>
<td>Cuba</td>
<td>1</td>
<td>1.07</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>1</td>
<td>1.07</td>
<td>1</td>
<td>0.04</td>
</tr>
<tr>
<td>Egypt</td>
<td>2</td>
<td>2.15</td>
<td>4</td>
<td>0.16</td>
</tr>
<tr>
<td>England</td>
<td>19</td>
<td>20.43</td>
<td>870</td>
<td>35.65</td>
</tr>
<tr>
<td>France</td>
<td>11</td>
<td>11.82</td>
<td>507</td>
<td>20.77</td>
</tr>
<tr>
<td>Germany, East</td>
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<td>1.07</td>
<td>2</td>
<td>0.08</td>
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<tr>
<td>Germany, West</td>
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<td>9.67</td>
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<td>11.27</td>
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<td>1</td>
<td>0.04</td>
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<tr>
<td>Greece</td>
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<td>2.15</td>
<td>1</td>
<td>0.04</td>
</tr>
<tr>
<td>Hong Kong</td>
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<td>2.15</td>
<td>52</td>
<td>2.15</td>
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<tr>
<td>Hungary</td>
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<td>2.15</td>
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<td>0.00</td>
</tr>
<tr>
<td>India</td>
<td>4</td>
<td>4.30</td>
<td>84</td>
<td>3.44</td>
</tr>
<tr>
<td>Israel</td>
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<td>1.07</td>
<td>16</td>
<td>1.04</td>
</tr>
<tr>
<td>Italy</td>
<td>6</td>
<td>6.45</td>
<td>40</td>
<td>1.63</td>
</tr>
<tr>
<td>Japan</td>
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<td>1.07</td>
<td>4</td>
<td>1.04</td>
</tr>
<tr>
<td>Kenya</td>
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<td>1.07</td>
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<td>1</td>
<td>0.04</td>
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<td>Nigeria</td>
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<td>1.07</td>
<td>5</td>
<td>0.20</td>
</tr>
<tr>
<td>New Zealand</td>
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<td>1.07</td>
<td>1</td>
<td>0.04</td>
</tr>
<tr>
<td>Philippines</td>
<td>1</td>
<td>1.07</td>
<td>5</td>
<td>0.20</td>
</tr>
<tr>
<td>Poland</td>
<td>1</td>
<td>1.07</td>
<td>100</td>
<td>4.09</td>
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<tr>
<td>Russia</td>
<td>5</td>
<td>5.37</td>
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<td>Sweden</td>
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<td>0.04</td>
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<td>Switzerland</td>
<td>3</td>
<td>3.22</td>
<td>63</td>
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</tr>
<tr>
<td>Tunis</td>
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<td>0.16</td>
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<tr>
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<td>1.07</td>
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<td>Yugoslavia</td>
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<td>0.98</td>
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TABLE 4

<table>
<thead>
<tr>
<th>Language</th>
<th>Number of Titles Listed</th>
<th>Number of Titles Held</th>
</tr>
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<tbody>
<tr>
<td>English</td>
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<td>1381</td>
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<tr>
<td>German</td>
<td>13</td>
<td>296</td>
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<tr>
<td>French</td>
<td>12</td>
<td>512</td>
</tr>
<tr>
<td>Italian</td>
<td>6</td>
<td>40</td>
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<tr>
<td>Portuguese</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Russian</td>
<td>4</td>
<td>177</td>
</tr>
<tr>
<td>Arabic</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Hungarian</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Albanian</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Chinese</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Czechoslovakian</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Greek</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spanish</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Swedish</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The English and French titles alone make up almost two-thirds of the titles listed. Significantly, the number of times these titles are held makes up over 55 per cent of the total foreign serial holdings.

The “language barrier” is sometimes given as the reason for low holding in foreign news serials. The languages represented on the original list are shown as Table 4. (Titles are counted as English when there is an available English edition.)

Yet the colleges and universities represented in this study teach foreign languages as shown in Table 5. (Titles are counted as English when there is an available English edition.)

TABLE 5

<table>
<thead>
<tr>
<th>Language</th>
<th>Number of Colleges or Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>8</td>
</tr>
<tr>
<td>Chinese</td>
<td>18</td>
</tr>
<tr>
<td>Czechoslovakian</td>
<td>2</td>
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<tr>
<td>French</td>
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<td>Japanese</td>
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<td>Portuguese</td>
<td>22</td>
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<tr>
<td>Russian</td>
<td>142</td>
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<tr>
<td>Spanish</td>
<td>235</td>
</tr>
<tr>
<td>Swedish</td>
<td>6</td>
</tr>
</tbody>
</table>

Any conclusions drawn from a survey of this type are, of course, limited by the fact that an arbitrary list of serials was used. It would be difficult, however, to discredit its findings entirely on that basis.

One might conclude from this brief study that the American student finds it difficult to locate balanced daily foreign news coverage. It seems further that students are more likely to get foreign news coverage from countries such as Germany, France, England, and Russia, which are thought of as world powers. African countries, smaller Communist nations, as well as neutral countries receive little coverage. Since this does not appear to be due entirely to a language barrier, it is tempting to suspect that it might be attributed to a bias toward nations with power and prestige.
Ida Angeline Kidder: Pioneer Western Land-Grant Librarian

The subject of this paper was appointed librarian of Oregon State Agricultural College in 1908, a position in which she served for twelve years. Her work in the early organizing of the library, as a teacher of library use, in guiding young readers in their search for inspiration and stimulation, and as a hospital librarian during World War I, are described.

IN 1908 the library of Oregon State Agricultural College was languishing, as indeed it had throughout most of its uncertain and checkered existence. There came in that summer to direct it, as its first professional librarian, Ida Angeline Kidder, nee Clark. From then on things would be different, very different.

Mrs. Kidder was, at the time of her appointment, fifty-three years old and only two years out of the University of Illinois library school. In the twelve years it would be permitted to her to serve, she was to upgrade and improve the library markedly in every aspect, placing it on firm and enduring foundations. Far transcending these notable achievements, she was to enter into the lives, interests, and affections of the Oregon State students to an extent unparalleled in American library history.

Mrs. Kidder's first professional position was with the Washington State library in Olympia. After a few months there she became, for two years, a Library Organizer for the Oregon State library in Salem. It was from this position that the new President W. J. Kerr of Oregon State Agricultural College brought her to organize and develop the college library then containing 4,284 somewhat neglected and poorly organized volumes housed in a single room of the administration building.

Immediately there was a new spirit and a new vigor in the little one-room library. Mrs. Kidder fully realized that she had much to learn about agricultural college libraries. What she lacked in knowledge, she made up for in ambition. It was her purpose to make the library "one of the best agricultural libraries of the country." So off went a letter to Claribel Barnett, librarian of the U.S. Department of Agriculture asking for help. She opened her heart, she said, "very freely to her . . . I told her that I knew very little but that I had a great ambition to learn . . . I threw myself on her mercy to teach me. . . ." On July 21, 1908, back came a six-page single-spaced letter which is a key document in the history of the Oregon State University library. On August 25, 1908, there followed a two-page letter. These letters and ensuing correspondence, reflecting the complete dedication of both of these two outstanding librarians, were the beginning of a lifelong friendship.

Immediately, too, there began a series

Mr. Carlson is Director Emeritus of Libraries at Oregon State University, Corvallis. This paper was read to the Library History Round Table at the San Francisco Conference of ALA.
of notes, letters, verbal requests, and recommendations to the President's office for more help, more books, more money, more space. While the results of these requests were not startling in terms of today's multimillioned libraries, they were, for that time and that emerging college, in comparative terms, remarkably successful.

During her twelve years, Mrs. Kidder increased the library some eight-fold in volume content. She brought the staff from the one single position she accepted to nine. She achieved, as what she considered her crowning glory, a new and well planned library building of some 57,000 square feet. Notable as these things were, all part and parcel of her philosophy and ambition, they were not the most significant aspect of her librarianship. Capable librarians elsewhere in comparable situations have achieved as much.

The uniquely outstanding things Ida Kidder brought to the little college, eventually to become a university, were of the spirit. While she was a doer in concrete, physical terms, and the results of her doing were and still are available for all to see and use and profit by, she considered it important to be as well as to do. It was through her outgoing living of this philosophy that she gained the love and respect of the students, and of the faculty too, to an extent rarely if ever equalled in American librarianship. Hers, however, was no lofty, impractical idealism. It was grounded in the realities of time and circumstance as her substantial measurable achievements, in developing books, staff, and building, clearly showed. It was, in one sense, from her spirit and her enthusiasm, and her energy in giving both free play, that these material things flowed.

ORGANIZER AND TEACHER

With sure instinct Mrs. Kidder turned first, in developing the library, to organization. With the help of a professional cataloger brought in for summer assistance in her first year, she undertook to start the books already on hand toward their first professional classification and cataloging. She also placed the acquisitions and business aspects of operating the library on sound foundations.

As early as her second year, Mrs. Kidder was offering a "library practice" course required of all freshmen, then some two hundred. It was only because she had felt that she needed to know the college and the library better that she had waited a year to introduce this instruction. Within another year, she was also offering lectures on the library in the winter short courses for farmers. These resulted, for a period of years, in voluntary contributions of about $100 annually to the library. In those days, and for this impoverished library, this was important money. Later she lectured on the library in courses for the advanced training of secretaries. She also found time somehow to make trips out into the state to talk to farm groups. Letters and commentary from her students, as well as from farmers, make it clear that her talks were truly inspiring. It was through them that she began to enter so completely into the affections of the students and the college community. Her lectures, said one colleague, were as apt to be concerned with life and literature as with the use of the library.

AN INSPIRER OF YOUNG PEOPLE

Mrs. Kidder was keenly interested in building inspiring ideals among the students. She was continually concerned that the Oregon State students, many of whom came from farm homes with limited cultural advantages, should be exposed to literature and particularly to poetry. She shared with her students the inspiring literature she enjoyed herself. She felt, and frequently said to her superiors, that the college, in its empha-
sis on technical education, was neglecting cultural and humanitarian instruction.

Her faculty colleagues have recorded that in her short talks on practical ethics to students, she generated a wonderful influence for good. She regarded the opportunity to meet students as the greatest privilege granted to a librarian whose aim is service. In exercising this privilege she had readings for groups of students in her rooms at Waldo Hall. She also studied with them individually her favorite Emerson, the Bible, Shakespeare, and other authors. She felt that students of the Bible should read it, not read about it.

Great as was Mrs. Kidder’s appreciation of literature and poetry, her appreciation of people was even greater. She managed always to single out the best and finest characteristics of students. She helped them to bring these things out in themselves. She was particularly helpful to foreign students. One young Hindu student, asked later if he had known Mrs. Kidder said, “She was wonderful. She opened the world to me. She showed me all the world akin.”

The chief characteristics which brought Mrs. Kidder so quickly into the affections of the college were her appreciation of the fine things of life, her interest in people, and her energy and good will. In her later years when failing health required her to use an electric cart (a great novelty in those days) in her trips around the campus she scattered cherry greetings along the way. There was, someone said, a kind of “Schumann-Heink-ness” about her.

It just came naturally, apparently, for the students to begin to call her “Mother” Kidder, a designation with which she was greatly pleased. As early as 1912 she was being referred to in no other way. She was continuing good copy in the student yearbooks, the Orange, later to become the Beaver, and the student newspaper, the Barometer. The Orange of 1918 had a picture of her in her electric cart surrounded by young women. It was entitled “Mother and her Rookesses.” In that year a Co-ed Edition of the Barometer was dedicated to her. In the Beaver of 1919 the Women’s section was dedicated as follows: “We dedicate our section to the most universally loved woman on the campus, ‘Mother’ Kidder. An inspiring teacher and the best of friends.”

Perhaps her crowning student recognition within her lifetime came in 1918 when Homer Maris, writer of the new Alma Mater song which has endured ever since, dedicated it “to ‘Mother’ Kidder in recognition of her ennobling influence and great love felt for her on the part of all who have met under the old ‘Trysting Tree.’”

PRACTICAL AND FIRM ADMINISTRATION

Not all was sentiment and idealism with Mrs. Kidder. While she was endearing herself so completely to the students, she was also developing and operating the library with a firm hand. Her relations with the faculty were friendly and congenial, but it was her rules that prevailed and well they knew it.

To one offending professor she wrote: “Last year you exceeded your fund and, therefore, took away from the amount for general books which the library very much needs. Such a thing must not occur again because I will not endure it. It is an injustice I will not stand.” In protesting this matter to the business manager she urged, “Please stiffen up on this case and make him pay for this book. He understands perfectly that he is not expected to order books without any authority.” This letter was signed “with indignation and resolution.”

Mrs. Kidder was in no way provincial in her all-out efforts to bring her library into the forefront of agricultural college libraries. To further improve herself, she
made a trip in 1911 to visit libraries in the Midwest. She went to Illinois, Purdue, Minnesota, Wisconsin, Iowa State, and John Crerar "in order to get into close touch with the work as it is carried out in other institutions." Her progressiveness was reflected in opening the library for evening service when the staff consisted only of herself and student help, in establishing Sunday open hours when this was practically unheard of, and in issuing to the faculty a monthly list of new books in the library when this was far from a common procedure.

Along with her outstanding Oregon colleagues, Mary Frances Isom of the Portland Library Association and Cornelia Marvin, State librarian, Mrs. Kidder was definitely a feminist as far as the library profession was concerned. Writing to her good friend, Miss M. E. Ahearn, editor of Public Libraries, she said, "...so far as I have come in contact with library workers of the country, the women have seemed to me much more alive, broadminded, and progressive. I have certainly received my inspiration from them rather than the men, with two or three exceptions."

Along with the routine operation of the library and maintaining contacts with students, the college administration was kept constantly aware of the increasingly acute housing problems of the library and the need for a new building. In the autumn of 1909 evening library hours were instituted for the first time for the faculty. By December these hours were extended to students, with attendant publicity about relieving pressures and congestion.

In the autumn of 1912 the Barometer complained that a chair in the library reading room deserted only momentarily would be found "filled by a life-size student of the green cap crowd. Let us offer a bunch of prayers for a library building in which this nuisance may be remedied." At that time Mrs. Kidder assured the students that "every effort is being made to render conditions as tolerable as possible until we can have larger library quarters."

Pressures and needs such as this culminated in a request of the Board of Regents to the 1917 Legislature for an appropriation of $158,000 for a library building. Everything must have been in readiness because with late spring approval of the requested funds, the construction contract was let in June. By World War I Armistice time in November of 1918 the building was ready for occupancy but understandably without its steel stacks.

**War Worker**

As the new library home was under construction, the young male students were going off to the armed services, and the girls, including some library staff members, were going, or wanting to go, into Red Cross or other war work. So off went Mrs. Kidder too, by then universally known as "Mother," to Camp Lewis, near Tacoma, Washington, to serve as hospital librarian for the summer of 1918. This was to be one of the greatest experiences of her life.

Reporting back to her staff from Camp Lewis, she said that her first experience, "was to go before a fine, dignified old Army Colonel to be examined as to whether I was old enough and ugly enough to be innocuous. I qualified splendidly."

It was quickly evident at Camp Lewis that the same instincts and attitudes which had endeared her to the college students would bring her into the affections of the young soldier patients. She wrote back, "In most cases they [the soldiers] needed a Mother as much as a Doctor . . . they would brighten up and take a new heart of courage at the appearance of a lame gray haired woman who came to them with a motherly spirit in her heart."

It was entirely in character that Mrs. Kidder should so quickly become a
friend of the young patients and that she should soon be known to them, too, as “Mother.” Some of them arranged a wager among themselves that she was so well known that a letter addressed to her only “Mother Kidder, Oregon” would reach her. On her departure they sent her a letter so addressed. When she reached Corvallis it was there waiting for her.

Mrs. Kidder was so enthused about her work with the soldiers that in writing to her assistant librarian, Lucy Lewis, at midsummer, and mindful, too, of duties and obligations at home and the new building under construction, she said, “I wish there were a hundred of me and each one had the strength of a lion and the days were one hundred days long.”

Mrs. Kidder’s remarkable effectiveness in helping the soldiers and in entering into their affections is epitomized by a letter she received from a soldier in France:

Dear Mother, [began this young soldier,] That is how I must address you because I could not honor the one who sent me that most interesting letter of March 24th by any other name . . . don’t you again dare to call yourself “old.” That applies only to people who have ceased to be interesting, who have outlived their usefulness and are social liabilities, not to such dynamos of kindness, sympathy, and understanding as you. Mother, you will never get old for the companionship of your incorruptible boys and girls and the immortals who live on your bookshelves have endowed you with a personality that defies the march of time.

September of 1918 found Mrs. Kidder back in Corvallis. From there she welcomed numerous invitations to talk about her Camp Lewis experiences. There were not, however, one hundred of her, and the days were not one hundred days long, so early November and the eagerly awaited time for the moving of the library to its new home found her flat on her back with a heart attack. Writing to a colleague when she was recovering, she said, “I had to endure the cruel discipline of letting someone else superintend the move.”

She comforted herself in that the plans were well laid, that her staff was competent, and that the move had gone smoothly. It was November 6, 1918, with momentous events shaping up on the war fronts, when the last book truck made the trip to the new building.

Commenting to the Barometer on the volunteer faculty assistance through which the library was moved, Mrs. Kidder said, “One of the beautiful things to cherish in our memory and tradition is the fact that our faculty helped to move our Library, and that the new home was built in this tremendous time in the world’s history.”

**The End Approaches**

After World War I, with her beloved library safely housed in an attractive and commodious new home about which she easily could and did go into rhapsodies, Mrs. Kidder became more and more of a legend in her own time. Even though now in failing health, she never lost her interest in or warm contacts with the students. Her electric cart which helped her to get about the campus and community as she became increasingly lame only added to her fame as someone different. Her active and wide-ranging mind continued as sharp and stimulating as ever. Her concern about broadening the cultural backgrounds of technically educated students in no way diminished.

Letters from former students came to Mrs. Kidder frequently in her later years. They wrote to ask her to help select books for their children, to congratulate her on the new building, to let her know of their doings, and sometimes just to wish her well. Always these letters were in warm and intimate terms. One man
working in the Bureau of Markets in the U.S. Department of Agriculture, asking for advice in selecting books for his three-year-old daughter said, "I know of no one who is as well qualified to give it as you."

In an interview with the Barometer in June 1919, Mrs. Kidder complimented the students on their good manners in the Library.

Nobody, she said, has to teach or admonish them. They know I love the Library and love them so much that I would be very hurt if the quiet of the Library should be disturbed . . . kind consideration for me then is one of the things that restrains the impulse to talk in the Library.

It was fitting that one of the very last letters Mrs. Kidder was to receive should come from Claribel Barnett of the U.S. Department of Agriculture library, as had also one of the first, that basic and influential letter of July 21, 1908, to the ambitious and eager novice seeking help. Advice was no longer needed by the exceptionally successful librarian Miss Barnett had helped so much. Her letter of January 29, 1920, told instead, and with obvious pleasure, of what a young Oregon State graduate who had been using the USDA library had said about the librarian who had helped to set him in good paths.

He spoke so beautifully of you. I am sure it would have done your heart good to hear him. Everyone who comes from Oregon speaks the same way. You have certainly endeared yourself to all who have been there.

With her health more and more precarious, Mrs. Kidder wrote President Kerr in mid-January of 1920 telling him of her continuing illness with heart trouble and asking him for a leave of absence without pay. She received a friendly and solicitous response sympathizing with her illness and granting her request, but telling her that her leave would, of course, be on full pay. He would, the President said, come to see her in a day or two. He expressed hope that her recovery was merely a matter of time.

Time was, however, for Ida Angeline Kidder, running out. Within a week of this exchange of letters with the President, which she must have found both comforting and reassuring, she was dead. In recording her passing the Portland Oregonian spoke of her as the "grand old lady of the College Library known familiarly and lovingly to three generations of College Students."

The Time of Parting

The reaction of students, past and present, was as intensive as it was unusual. The Barometer of March 2, 1920, said this:

The life and influence of Mrs. Kidder has been an inspiration to all who knew her. She held a greater place than probably any other person and this endearment gave her the name of 'Mother' Kidder. Her greatest thought after building up the Library was inspiring ideals among students. One of the groups that knew her indeed as Mother was the Cosmopolitan Club composed of students from all over the world.

"Mother" Kidder’s final hours among her students and on the campus, placing an exclamation point to the universal esteem and affection in which she was held, were unique in all American library history. At the request of the students her body lay in state on March 2, 1920, the day of her funeral, in the library building of her planning. Classes were cancelled from 10 to 2 and honor guards were at the casket. The funeral services were held on the steps of the library. A student body resolution of appreciation was read at the services. Floral tributes were so numerous that they could not all be accommodated at or near the casket.

"Mother" Kidder left her library and the campus not in a hearse but on the shoulders of young friends among the
students, who carried her to the railroad station, approximately a mile distant. She was followed by a faculty honor guard and the college band playing Chopin’s Funeral March. Her body went by train to a crematorium in Portland. Even there her students, mostly alumni, were with her. There was music but no services.

The library world too honored Mrs. Kidder in her passing. The Agricultural Libraries Section of the American Library Association passed a memorial resolution praising her contributions to agricultural librarianship. Her friend and colleague Cornelia Marvin succinctly said this about her in Public Libraries of April 1920: “Her influence on the students of Oregon Agricultural College was greater than that of any other member of the faculty.”

The small western college in which Mrs. Kidder chose to invest her brief but dedicated career was remote from the bibliographical centers and cultural capitals of the world. It was, therefore, its doubly great good fortune that there should come out of the East this warm and dynamic personality and able librarian to set its struggling library in good paths, to develop it extensively, to inspire the students, and to give of herself to all with whom she came into contact. She did much with little. By her doings and her “being” she added an enduring luster not only to her library but to the entire profession of librarianship.
Nonconventional Data Sources and Reference Tools for Social Science and Humanities

This essay attempts to provide an introduction and guide to the emerging literature on nonconventional information systems and centers which serve social science and humanities in the United States. Coverage includes the changing bibliographic and data needs; the centers that are offering nonconventional, library-type services; the services offered; the coordinating organizations; computer-compiled reference tools; and other sources of information for librarians assisting scholars who wish to employ new approaches to research in the social sciences and humanities. Included is a list of publications and articles which in combination may serve as a directory.

Innovations in scholarship in the social sciences and humanities are reflected in published studies which are being added to library collections across the country. The new approaches to research are made possible by the application of computer technology to the analysis of quantitative data, to information processing, and to the study of literary style. Thomas J. Condon, an executive associate of the American Council of Learned Societies, expressed the possibilities of some of the nonconventional techniques when he said:

The computer holds out . . . the promise of providing the scholar in the humanistic and social science disciplines with the kind of information, the quality of information, and the access to information that he scarcely ever permitted himself to imagine possible. From the level of activity that could well develop if the scholar and the machine can work in tandem may come a closer approximation of the ideal of a unified culture than we ever managed before.

Effective reference librarians and research assistants have long had at their disposal directories listing sources of specialized information. Referral of the user to a special collection held in another library or to other sources of needed information has shortened the search for many a scholar. In order to fulfill their usual role as guides in the search for available information it is essential

Examples of recently published books which have resulted from new trends in scholarship are the following:


Mrs. Gulick resides in Potsdam, New York.
that today's social science and humanities librarians have knowledge of the nonconventional as well as the conventional sources.

Nearly all librarians are now using reference tools that are compiled with the assistance of computers. For more than twenty years science librarians have been aware of the possibility of literature searches done at special centers which employ extensive subject indexing of their collections. The methods of data and bibliographic control which were first developed to serve science have only recently been employed to serve social science and humanities. Financial support (foundation, business, and government) for their continued development is increasing.3

This article, with the references which follow, will serve as an introduction and guide to the emerging literature on nonconventional information systems and centers which serve social science and humanities in the United States. Librarians and subject specialists exploring these possibilities for the first time will ask such questions as:

What research is being done toward meeting the bibliographic and data needs of the social sciences and the humanities?

Where are the centers that are now offering nonconventional, library-type services?

What are the services offered?

What organizations are concerned with coordinating the services of the developing network of centers?

What are the advantages of the new bibliographic tools which have been made possible by the use of nonconventional techniques?

DEFINITIONS

The terms "system" and "center" require definition. The distinction can be made clear by first defining information retrieval as the total process of gathering, analyzing, indexing, filing, and making available items of recorded information. An information retrieval system is an organized combination of the elements (human and/or hardware) especially designed to carry out the information retrieval process.4 The center is the place where the process is carried out.5 A "nonconventional" system is one which uses such searching devices as Uniterm cards; interior or edge-notched punched cards; standard punched cards; punched paper tape; magnetic cards, tape, discs, or drums; or unit or serial microform for the storage of document indexes. The system is also "nonconventional" if unique classification, indexing, or coding techniques not commonly associated with usual library practices are employed.6 The purpose of a center using a nonconventional system may be for (1) the storage of references; (2) the storage of data or data compilations; (3) the production of bibliographies and indexes; or (4) any combination of these three.

Information which is the raw material of the social scientist is of two types: source data (statistical reports, survey results, voting records, etc.) and the literature or the texts that have resulted from the analysis of the source data. The

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3 For consideration of the bibliographic and data needs of the social sciences and humanities, see:
Eric H. Boehm, Blueprint for Bibliography: A System for the Social Sciences and Humanities (Santa Barbara, Cal.: Clio Press, 1965).
Eric H. Boehm, "Dissemination of Knowledge in the Humanities and Social Sciences," ACLS Newsletter, XIV (May 1963), 3-12.

storage of the source data through the use of nonconventional techniques creates what are now termed "data banks" or "data archives." Storage may require reduction of a natural language text to a standard card size or film, or it may involve coding for storage on punched cards, magnetic tapes, discs, or drums. Bibliographic control of the literature of the social sciences may be accomplished through the use of techniques which permit rapid compilation. The process is one of storing an extensive index which can be searched by subject, author, title, geographic unit, or any other aspect deemed relevant and entered on the record.

The raw material of the literary scholar and critic is the literary text. Computer-compiled analytical indexes and concordances have become familiar tools. The first step in using data processing techniques for text analysis is the entering of the text on magnetic tape or disc via punched cards. Once the text is so recorded, it can be copied onto other cards, discs, or tapes. Computer programs for various kinds of analysis as well as the recorded texts can be useful to scholars other than the ones for whom they were first developed—if the accessibility of the coded texts and programs is known. As in the case of the social sciences, electronic information storage and retrieval systems can be used for bibliographic control of the literature of the humanities.

**EXISTING CENTERS AND COORDINATING ORGANIZATIONS**

With the support of the National Science Foundation and the collaboration of existing data archives, the Council of Social Science Data Archives was established in 1965. Ralph L. Bisco, technical coordinator for the organization, describes it as a planning, policy making, and information-disseminating group for coordinating and publicizing the activities of a confederation of social science data archives, most of which are in the United States. Its basic purpose is to make machine-readable data and supporting documentation readily accessible, at minimum cost, to scholars. The concern of the Council of Social Science Data Archives extends only to those archives that routinely provide machine-readable data to users outside the original research group or data collection agency. One of the first projects of the Council has been the compilation of a directory which describes the holdings of twenty-five such archives, *Social Science Data Archives in the United States—1967*. Further information about the Council and its member archives is available upon request from the Executive Director, William A. Glaser, 605 West 115 Street, New York, New York.

Archives which provide machine-readable data to users outside the collection agency are of two types. One is the general purpose service archive which makes its holdings available to the entire community of social scientists; the other is the local service archive which provides data for a more limited group of users.

One of the most influential general purpose service archives in the United States is the Inter-University Consortium for Political Research. It is a nonprofit partnership between the Survey Research Center of the University of Michigan and...
gan and over ninety universities and nonprofit research organizations in Canada, Europe, Great Britain, and the United States. The collection includes most of the major political survey research of the past thirty years, the 1950 and 1960 censuses, and major election statistics and population characteristics, by county, from 1820 to the present. In 1964 the collection was described as including ten thousand interview forms of unevaluated data, eighty reels of tapes, twenty linear feet of project cards (collected at the rate of fifteen thousand cards a year), and four linear feet of technical reports. The basic storage medium has been magnetic tape. Data services offered by the Inter-University Consortium range from a simple reproduction of card and tape files of complete studies, through the preparation of special analysis or work decks or tapes tailored to the analysis needs of particular researchers, to the provision of percentaged tables and multi-variate analyses of data.

In addition to the Inter-University Consortium for Political Research, examples of the general purpose service archives are the Roper Public Opinion Research Center at Williams College, the International Data Library and Reference Service at the Survey Research Center of the University of California at Berkeley, the Bureau of Labor Statistics, the Bureau of the Census, and the Louis Harris Political Data Center at the University of North Carolina. Examples of the local service archives are the Center for International Studies at Massachusetts Institute of Technology and the Political Science Research Library at Yale University.

Other collections of social science data have been organized in nonconventional form although their files are not machine-readable. Such files are usually maintained on cards or film and use unique classification systems which are recorded on cards that can be sorted manually or mechanically. The most venerable examples are the Human Relations Area Files and the Classified Abstract Archive of the Alcohol Literature. A careful perusal of the descriptions of the special libraries listed in a 1965 publication of the National Referral Center for Science and Technology, A Directory of Information Resources in the United States, Social Sciences, will reveal descriptions of fourteen centers using nonconventional systems of data storage. Half of the nonconventional systems listed do not maintain machine-readable files. Some offer to perform searches upon request; other supply duplicate sets of punched cards. Nearly all permit academic researchers to apply for access to the collections.

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14 The Bureau of the Census Catalog, issued quarterly and cumulated annually, lists in addition to the publications issued by the Bureau unpublished material including data files, selected special tabulations, and nonstatistical materials such as maps and computer programs. In addition the Bureau of the Census in 1967 established the Data Access and Use Laboratory which edits Small-Area Data Activities, a newsletter issued occasionally for the purpose of informing readers of developments in the field of small-area data, and Data Access Descriptions, a publication which covers specialized aspects of access to unpublished census data. The first two issues of the latter were published in March and August of 1967. Additional information may be requested from John C. Beresford, Office of the Director, or from Mrs. Constance Citro, Data Access and Use Laboratory, Bureau of the Census.


17 Mark Keller, "Documentation of the Alcohol Literature: A Scheme for an Interdisciplinary Field of Study," Quarterly Journal of Studies on Alcohol, XXV (December 1964), 725-41.
Since 1964 the American Council of Learned Societies has offered grants-in-aid to scholars in humanities and social sciences in order to encourage computer applications in their research. In June of 1966 a special supplement of the ACLS Newsletter listed 263 social science and humanities projects involving the use of electronic computers in progress in the United States.

The fields of archeology, anthropology, history, language, literature, and music were most represented, although a few projects were underway in such diverse fields as religion, psychology, and architecture. Publication of the list provided a means of communication among scholars of similar interest. The American Council of Learned Societies has more recently undertaken the Center’s Journal Editors project. This is a pilot project to test the feasibility of interdisciplinary bibliographic control through computerization. Thirty journals published by the constituent societies of the ACLS are involved. A merged quarterly index which is available simultaneously with the publication of individual journals is anticipated. The Center, while accumulating a data bank, will develop techniques of selective dissemination of information for interdisciplinary work in the humanities and social sciences, produce specialized indexes reflecting interdisciplinary concerns, and prepare an annual merged index of constituent society journals.15

The United States Office of Education created the Educational Resources Information Center (ERIC) program in 1964 as a means of increasing the circulation and use of research reports and research-related materials covering education at all levels.16 The present eighteen ERIC centers for acquisition have been located where outstanding collections on the various fields of education already existed. At present, report coverage is available on the following subjects: counseling and guidance, the disadvantaged, educational administration, exceptional children, foreign languages, junior colleges, linguistics, reading, school personnel, science education, small schools, vocational education, adult and continuing education, teaching of English, library and information sciences, educational media and technology, educational facilities, and early childhood education.

At the acquisition centers the abstract of each document and the index terms which reveal its total content are combined to form the résumé. The original report is then copied on microfiche for deposit in a centralized reproducing and distributing center in Cleveland. Announcement bulletins entitled Research in Education are published monthly. The bulletins include the abstracts and list author, location of study, and length. Requests are made by the users to the distribution center which will supply either microfiche or hard copy text of the complete report.

Under the present arrangement, each ERIC clearinghouse performs two services in addition to selection, abstracting, and indexing. Each center responds to inquiries from the educational community which cannot be handled with ERIC’s routine services and prepares special reports such as critical reviews, selected bibliographies, and state-of-the-art papers as they are needed.

The Urban Renewal Administration of the United States Department of Housing and Urban Development in cooperation with the New York City Planning Commission and the City University of New York prepared a paper prepared for delivery October 24, 1967 at the 1967 Annual Convention of American Documentation Institute. May be requested from the authors at the U.S. Office of Education.


The Interuniversity Communications Council (EDUCOM), an association of over sixty institutions of higher education, was created in 1965 chiefly for the purpose of informing staff members of the member institutions about new technologies which can be used in education. Nonconventional techniques for storage and retrieval of information and computational and linguistics uses of computers will continue to receive EDUCOM encouragement.

Fifteen organizations and agencies dealing with information handling in the social sciences were represented at a conference sponsored by The Galton Institute in October of 1966. The meeting has been described as the first step toward cooperative resolution of difficulties encountered in the processing, storing, disseminating, and retrieving of documents and data in the fields of mutual interest. As an outgrowth of this meeting a new division of the American Society for Information Science (formerly the American Documentation Institute) was created. It is called the "Special Interest Group in the Behavioral Sciences." The newsletter, SIG/BSS Newsletter, is edited by William G. Jones, P.O. Box 1248, Ann Arbor, Michigan 48106. Another Special Interest Group in the Arts and Humanities was formed at the 1967 annual meeting of the Society. Emphasis here is to be given to computer-directed research and information retrieval in those fields. Details may be obtained from Professor J. Gordon Spaulding at the University of British Columbia.

### NEW BIBLIOGRAPHIC TOOLS FOR SOCIAL SCIENCE AND HUMANITIES

Indexes and bibliographies, both current and retrospective, produced by using the information storing, sorting, and printing capacities of computers are becoming available in increasing numbers in both the social sciences and humanities. The most common type is the KWIC (Key-Word-In-Context) index which is reproduced from computer printout usually through the use of offset presses. The time saved in compilation can greatly reduce the time gap between publication of an article or book and the appearance of citations in indexes and bibliographies available to researchers. Cumulative indexes can also be made more rapidly once the initial process is computerized. Another advantage of the computerized listing is the availability of one-subject bibliographies which can be printed-out on demand.

The indexing of keywords from titles produces a somewhat less effective tool for social science and humanities than it does for science since in science the title is more likely to reflect the actual content of the book or article indexed. This difficulty can be overcome by summarizing the articles in the form of subtitles or abstracts and indexing the subtitles and/or descriptive terms in a KWIC format.

The concept of a computer-compiled integrated bibliography for English studies was first discussed by Lewis

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Sawin and Charles Nilon in 1958. A pilot study for testing the feasibility of the proposal has now been completed at the University of Colorado under a grant from the U.S. Department of Health, Education, and Welfare. The journal coverage of the proposal, the arguments presented against its practicality, and now the report of the pilot study provide a good introduction for the librarian or library school student who is considering the new techniques for the first time.\(^{20}\)

Some early examples of KWIC indexes in the social sciences and humanities were Kenneth Janda's *Cumulative Index to the American Political Science Review*, Vols. 1-57, 1906-1963 (Evanston, Illinois: Northwestern University Press, 1964)\(^{21}\) and the *Kansas Slavic Index; Current Titles: Social Sciences, Humanities* (Lawrence, Kansas: University of Kansas Libraries, 1963).\(^{22}\) *Comparative Education Index and Bibliography* was first produced at the University of Michigan in 1964. As early as 1964 and 1965 indexes to *PMLA* were done by electronic data processing; the Modern Language Association expects to have a completely automated bibliographic system in operation after 1968.\(^{23}\)

The first issue of *RILM Abstracts of Music Literature* was published in August 1967. It is an abstracted, computer-indexed bibliography of current scholar-


ly literature on music. Eventually RILM (Répertoire International de la Littérature Musicale) will undertake publication of a series for retrospective material. The project is jointly sponsored by the International Musiological Society and the International Association of Music Libraries. It has received support from the American Council of Learned Societies and is serving as a pilot project for that organization's proposed interdisciplinary National Bibliographic Center.\(^{24}\)

The project is directed by Professor Barry S. Brook, Queens College, The City University of New York.

The first of a proposed ten-volume series of bibliographies and indexes on political science, government, and public policy was issued by the Universal Reference System in 1965 (*International Affairs. Universal Reference System, Political Science, Government and Public Policy Series*, Vol. I.). Nine additional volumes and an updated version of the original volume should be available in 1968. The method of production employs a unique classification system and intensive indexing as well as computerized handling of the data involved. The published volume is called a "codex" instead of an index because most of the descriptors have been truncated in code words and the descriptors have the inherent ability to be crossed with any set of descriptors. The codex has two main parts, a catalog of annotated titles and a much larger index-in-depth. Each document in the bibliography may have from ten to twenty entries in the index. Coverage includes books, magazines, and other forms of documents ordinarily listed separately. Another departure


from tradition is that the descriptors used for indexing not only cover the subjects usually found in library subject cataloging but are also used to reveal previously unindexed aspects of documents such as the ethical base of the authors and the methodological techniques used in the research. When the complete system is available, each of the ten fields of political science which will be covered by a codex will also be covered by a quarterly gazette which can be used to keep the scholar abreast of current published material. Each quarterly gazette will cumulate the previous issue up through the first year of the cycle. An updated codex in each of the ten fields is proposed for publication every two years. Gazettes are currently available in seven of the ten fields. The service to be offered, a computerized documentation and information retrieval system, will be year-round on a two-year cycle. Further information is available from Princeton Research Publishing Company, 32 Nassau Street, Princeton, New Jersey.

The interdisciplinary approach to social science research has resulted in a need on the part of the scholar for access to literature outside his field of specialization. One of the more recent index journals which attempts to meet this need for those working in the behavioral-biological-social science field is Perceptual-Cognitive Development. Each issue includes a computer-compiled bibliography, a keyword-in-context index, and an author list. Its broad coverage and the possibility of listing an article within two to five months after publication are given as its chief reasons for existence. The citation index is another innovation resulting from the use of computers. Because compilation of a citation index requires a minimum of human intellectual effort, it can be available to users sooner after publication of the books and journals covered than can conventional indexes or even computer-compiled indexes which are based upon abstracting. With the present extended coverage of Science Citation Index, Eugene Garfield, its creator, is proposing its use by social scientists who want to "keep up" with related scientific fields. Within the next few years the Institute for Scientific Information expects to extend its coverage to more than three hundred key journals in such fields as sociology, political science, anthropology, history, and other areas of the behavioral sciences. A personalized current awareness service of the type now offered for scientists can then be available for social scientists.

DIRECTORIES

No single directory exists which can be used as a guide to the sources of social science and humanities information held in centers which employ non-conventional storage systems. Likewise, no single directory of computer programs for data processing exists. The following publications and articles indicate developments to date and for the present they may serve the function of directories.


Published since 1965 by the Galton Institute, P.O. Box 35336, Preuss Station, Los Angeles, Cal. 90035.


Carlson, Gary (comp.). "Literary Works in Machine-Readable Form," Computers and the Humanities, I (January 1967), 75-102. (A list of 224 literary works in machine-readable form and the names and address of 66 researchers with whom interested persons might correspond.)

"Computer Programs Designed to Solve Humanistic Problems," Computers and the Humanities, I (November 1966), 39-55. (Lists 36 programs for text manipulation, 8 for music, 2 for graphic display, 4 for social science—all with descriptions of purpose and name and address of developers.)

"Additional Programs to Solve Humanistic Problems," Computers and the Humanities, I (January 1967), 108. (A list of eight programs not included in the previous issue.)


BASIC BOOKS

Librarians and subject specialists who for the first time are investigating the techniques and potentials of nonconventional information storage and retrieval as well as computer applications in the social sciences and humanities may find the following volumes of interest.


29 Of the 175 nonconventional information systems serving science and technology which are described in this volume, at least four maintain collections which are of interest to social scientists. They are the International Data Library and Reference Service at the University of California at Berkeley, the U.S. Atomic Energy Commission's Serial Record System, the National Institute of Mental Health's National Clearinghouse for Mental Health Information, and the National Bureau of Standards' Clearinghouse for Federal Scientific and Technical Information.
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SELECTED PERIODICALS

The total number of journals which occasionally carry articles of interest to persons wishing to be continually informed on this interdisciplinary topic is beyond the scanning capacity of the average person. It is possible, however, to watch the regular publications of a few journals which give better coverage to the topic than do others. The following nine are suggested: Computing Reviews. New York: Association for Computing Machinery, 1960-30


This review journal covers worldwide publications. Excellent indexes make it easy to use. Contents are classified. Under Section 3, "Applications," will be found subsections on social and behavioral science, humanities, and information retrieval. It is very useful for both books and articles; it does include items critical of certain computer applications.

This is a recent addition to the list of available abstract journals. Quarterly publication is planned under sponsorship of the American Documentation Institute, the Division of Chemical Literature of the American Chemical Society, and the Special Libraries Association. Of particular interest for this topic will be the sections "Information Centers and Special Libraries" and "Supporting Research" which has a subsection, "Social Sciences." Address inquiries to Documentation Abstracts, Inc., P.O. Box 9018, Southeast Station, Washington, D.C., 20003.

To be carefully examined is Field 5, "Behavioral and Social Sciences," with its subsections covering administration and management; documentation and information technology; economics; history, law and political science; human factors engineering, humanities; man-machine relations; psychology; and sociology.

Volume VII, No. 10 (June 1964) was devoted to "Information Retrieval in the Social Sciences"; Computers and the Humanities: A Newsletter. Flushing, N.Y.: Queens College of the City University of New York, 1966-34


OTHER SOURCES

A good source for current information from the moving edge of any field that enjoys governmental support of its research is the government report. Information contained in journals today may have been available as government reports a year ago. On the other hand, some valuable information may never become available in any form except that of the government report. Hence, the anonymity of the unsuccessful research project. The Government-wide Index to Federal Research and Development Reports (Washington: U.S. Department of

Volume X, Nos. 5 and 6 (January and February, 1967) were devoted to "Advances in Information Retrieval in the Social Sciences."

Published with financial assistance from the IBM Corporation and the U.S. Steel Foundation. Address inquiries to Prof. Joseph Raben, Department of English, Queens College, Flushing, New York 11367.

This publication is being distributed without charge, experimentally, among the faculty at member institutions. Membership is open to all accredited colleges and universities in the United States, Canada, and Mexico. Address inquiries to Carle Hodge, Editor, 4200 Fifth Avenue, Pittsburgh, Pennsylvania 15213.

Much of Volume XVI, No. 1 (1964) was devoted to "Data in Comparative Research."

Published monthly (October-May); available without charge. Address inquiries to the American Council of Learned Societies, 345 E. 46th Street, New York, New York.

In the future a special section concerning data archives will be regularly included in this publication. Volume IV, No. 3 (September 1965) was devoted to data production, storage, retrieval, and processing.
Commerce, 1965- ) serves as an index to most unclassified reports on federally financed research. Through the Fast Announcement service of the Clearinghouse for Federal Scientific and Technical Information persons interested in specific fields can be assured of notification as the reports become available.

Not to be overlooked are the sources from which information can be obtained upon direct request. Unpublished papers which were presented at meetings and periodic reports of organizations involved in research and development are important sources of information relevant to nonconventional, library-type services for social science and humanities.39

39 Examples of relevant unpublished papers are:


The last book on the general subject of library surveys appeared as an integrated topic in 1940. This was The Library Survey, written by Errett W. McDiarmid, Jr., and published by the American Library Association. Mr. Line's book may mark the appearance of other books on the subject. The present reviewer and Irlene Roemer Stephens have edited a volume titled identically, issued in November by the Columbia University Press (Maurice F. Tauber and Irlene Roemer Stephens (eds.). Library Surveys. New York: Columbia University Press, 1967. xix, 286p. [Studies in Library Service, Number 6]). This latter volume is a collection of papers prepared for a conference in New York in June 1965. Since it is quite different from Mr. Line's work, it is mentioned only in passing. Similarities appear in such areas as: reasons for and types of surveys, selecting surveyors, weighing the results, and in implementing the studies.

The book by Mr. Line, who is deputy librarian of the University of Newcastle-upon-Tyne, is designed to aid librarians in their use, planning, procedure, and presentation of surveys. Mr. Line asks the fundamental question of whether or not a survey by an outsider is necessary for a particular situation. This is an academic question, however, as Mr. Line indicates rather clearly that surveys of libraries—individual units or systems—serve the same purpose as consultancies in other fields—medicine, law, engineering, business, industry, and government. Thus, libraries, like other enterprises, need re-examination constantly. The use of self-surveys is acknowledged, and this is a way of evaluating the status of a particular situation.

However, the use of the self-survey raises a delicate question that cannot be answered without reference to a specific institution. There have been excellent self-surveys at various libraries and of library systems, and an efficient director expects "self-surveying" to be a constant approach to improvement.

The caution of "pitfalls" in the approach of the outside surveyor is well taken, but this is true in any professional relationship when outside aid is sought.

Mr. Line reviews the various types of surveys—over-all surveys of a country's libraries, or of the resources of the libraries of a country, or of specific areas of a library such as its income and expenditure, stock, buildings and equipment, administration and technical processes and activities, staff, use of the library, and background. He points out that "no library operation should be considered in isolation."

The "Planning of Surveys" is given careful attention, since it is quite clear that unless the limits of a study are carefully defined, the survey may take an inordinate amount of time and result in imprecise findings. Sampling is quite important in any aspect of the survey, and Mr. Line provides the reader with reminders of adequacy of samples in such areas as use, operations, and resources. He calls attention to the need for repeated surveys after intervals for purposes of comparison. Indeed, there are a number of libraries in the United States which have had several surveys just for this purpose.

Such matters as proper timing, support, selection of the surveyors, costs, and the utilization of opinions of users are aspects discussed by the author. In collecting the information, the gamut of observation, questionnaires, rating scales, interviews, and other procedures normally used in surveys is considered. The problems of questionnaires are given extended treatment.

Chapters IV and V of the volume deal with processing and analysis of survey data, and interpretation and presentation, respectively. The inclusion of proper coding applications, when pertinent, will allow for easier analysis of data when the report is prepared. Mr. Line refers in some detail to punched card and computer approaches. Tabular presentations are considered, and statistical measures, including correlations, are offered as possible instruments for interpretation. The author also suggests that the surveyor must be careful of bias in any response, and that awareness of internal
inconsistencies in answers should be associated with some suspicion. The caution that the author expresses in the interpretation of data, of course, is incumbent upon the surveyor, if the report is to be acceptable to the unit surveyed.

The author uses both British and American sources in his presentation, which should give it a wider audience. In an Appendix, he suggests several practical examples of studies that could be made, with some direction as to factors involved, as well as methods of collecting data. A useful index makes it possible to locate specific topics included in this work, which should be helpful to surveyors and surveyed alike.

—Maurice F. Tauber, Columbia University.


Most of these Fifty Essays, the qualifying statement of the title notwithstanding, deal with the printed book of the fifteenth century. To the uninitiated or nonspecialist such supposedly narrow scope could be a deterrent; we therefore hasten to say that the variety of problems treated is great, ranging from purely typographical investigations to questions of authorship, identity and life of printers, analysis of the production of presses, or printing and reading in Italy. Those who are familiar with Mr. Scholderer's work can take it for granted that every one, even the smallest, of his articles reflects solid scholarship, originality, and good style.

The title hides the fact that the volume contains fifty-four of the 221 entries in Dennis E. Rhodes' "Bibliography" of V.S. (pp.15-29); Mr. Scholderer's poem "Death of Virgil" (p.9); his essay on the "Private Diary of Robert Proctor" (pp.31-37); a brief but warm foreword by Sir Frank Francis, as well as an introduction (pp.13-14), the aforementioned bibliography, and two indexes (pp.295-302) by the editor. Twenty-eight of the Essays appeared originally in The Library, sixteen in the Gutenberg Jahrbuch. The rest had been published in nine different places. For reasons unexplained no contribution from the British Museum Quarterly was included.

It is impractical to enter into a discussion of so many articles. The following remarks are random observations and reactions. Three contributions analyze the book production of Italian centers of printing, Venice to the end of 1481 (p.74-89); Ferrara (pp.91-95); and Milan (pp.96-105). The activity of printers and publishers inevitably reflects intellectual climate and economic conditions. These articles originally published in 1925-1927 shed interesting light on the spread of Humanism, the business acumen of printers, and the effect of competition and overproduction.

"The Invention of Printing" (pp.156-168), published in celebration of the five hundredth anniversary (1941), is one of the best available summaries on this subject. The author's own note takes cognizance of Carl Wehmer's later findings on the so-called "astronomical calendar for 1448," which is more fully discussed on pp.229-31. The following article (pp.169-78), entitled "Early Printed Books," reviews the basic work of major incunabulists from Henry Bradshaw to World War II, dealing with such outstanding members of the guild as Robert Proctor, Konrad Burger, Gordon Duff, Konrad Haebler, Dietrich Reichling, and Anatole Claudin. Have these men and their similarly eminent colleagues (among them Victor Scholderer) exhausted the problems of early printing to such an extent that little has been left to following generations or, and this is presumably more correct, have present training and the pressure of other duties created conditions which are much less favorable to research in depth than in earlier periods?

In his article on the Missale speciale Constantiense (pp.253-57), Mr. Scholderer presents a measured survey of the various theories pertaining to this famous book, thought by some to ante-date the printing of the 42-line Bible. His study was written in 1955, and the controversy continued thereafter. Here, as in a few other cases, the editor added his own note, referring to the latest investigation (Allan Stevenson's) which purports to prove beyond doubt that the Missale was printed as late as 1473.

It is this reviewer's feeling that the reprinting in one volume of articles by foremost specialists is highly desirable and a great timesaver to scholars. Perhaps this volume might be followed by other similar
May I be permitted to end with a slightly facetious note: it is amusing that this very well produced volume, so full of information on early typography, contains a modern printer's typographical accident; on page 240 the "J" of Jordanus left its proper place and halfheartedly substituted for an Arabic "1" in the footnote.—Rudolf Hirsch, University of Pennsylvania.


Jacob Israel Zeitlin's infectious love of books, his detailed knowledge of them, and his keen nose for them have inspired and helped hundreds of librarians, collectors, and others. Now seventeen of these have joined together to manifest their affection for and gratitude to the dean of west-coast booksellers.

There is more Fest than Schrift in the volume, which is not unbefitting the effervescent personality of the honoree. Two of the essays, however, make serious contributions to scholarship. The first is a selective bibliography of the steam locomotive by Everett L. DeGolyer, Jr., who adds illuminating comment to his descriptions of twenty-three books printed from 1556 to 1966 and relating to Great Britain, the United States, France, Germany, Switzerland, Holland, and Russia. J. M. Edelstein (also the editor) supplies an expert bibliography of the twenty-nine editions published between 1929 and 1936 by the Primavera Press, of which Jake Zeitlin was a cofounder.

The other contributions are chiefly reminiscent and, deservedly, panegyric. The breadth of Jake's influence is indicated by tributes from such eminences as Elmer Belt and Bern Dibner among the collectors, Lawrence Clark Powell and Robert Vosper among the librarians, and Winifred A. Myers and Warren R. Howell among the professional colleagues.

Jake's lifetime interest in graphics is reflected in two agreeable drawings by Paul Julian and Rudi Baumfeld and a superb portrait photograph by Robert Bobrow showing Jake at his philosophical and un-ruffled best.

There are the few inevitable slips. To describe Jake as *Prænceps omnium librarum*—which can be rendered as "first of all plummers"—emphasizes his love of pounds rather than his love of books. (That Jake has always loved books is nowhere better shown than in the large-paper edition of Norman Douglas's *Capri* (1930), where his name appears among such other subscribers as Arnold Bennett, D. H. Lawrence, Booth Tarkington, and H. G. Wells.)

The volume has been lovingly produced by Saul and Lillian Marks at the Plantain Press (typography); Grant Dahlstrom at the Castle Press (printing); and the Earle Gray Company (binding). Save for the uncomfortable crowding of some lines, it is an attractive piece of bookmaking.

Only eight hundred copies have been printed. If everyone who admires Jake Zeitlin wants a copy, there will be a second edition.—Herman W. Liebert, Yale University.

Mark Hopkins' Log and Other Essays.


An enduring faith in the library profession, a dedication to cooperation among its many and varied members, strong convictions on what is needed to improve the education of these members, and an optimistic view of the future pervade these forty-four articles and speeches by Dr. Shores, selected by John David Marshall from some two hundred published between 1928 and 1964, most of them during the ten years of 1950-1960. That these convictions have grown stronger is evident from a 1962 speech to a group of special librarians. "To this librarian with over four decades of dedication to his profession, librarianship is a profession of destiny. I recognize in library science the subject of subjects that may yet help mankind to an understanding of the universe, not as segmented findings, but as a truthful whole. Then will our profession finally contribute to the welfare of the world."

Dr. Shores' professions of faith are arranged under seven subjects, the first prop-
erly being "On Books and Reading," four essays which affirm his belief in the future of the book and the necessity of reading. A later section "on the Unity of Library Media" advocates a unified materials center, long before the term was generally used in schools.

His lifelong interest in reference service is reflected in two sections: "On Reference Librarianship" and "On Reference Sources." In the former he predicted "that in the very next few years the reference librarian will emerge as the most strategic professional in our entire family of world occupations." That was in 1957. The other contains the earliest essay in the volume, one on Noah Webster's Dictionary, written in 1928. His article on the ideal encyclopedia, published first in 1937, accurately predicts the trends in publishing which have taken place in the past twenty years.

The author's long involvement with library education and his visions of the future are evident in six essays written between 1953 and 1964, under "On Library Education." His optimism shines through in "What Is Right With Library Education," his view of its objectives is set forth in "The College of Library Art, 1984."

Those aware of Dr. Shores's current interest in the library arts college may have forgotten that early in 1935, School and Society published "The Library Arts College: A Possibility in 1954?" This is one of the ten essays in the section, "On the Library's Role in Education," which also includes the title essay, "Mark Hopkins' Log." It is not surprising that he identifies the Log as "the universe of the materials of learning," a point reiterated in "The Essence of Learning," in which he states his belief that the book, in its broadest interpretation, is the composite of the school curriculum, and that a better course of study would result if the curriculum followed the book instead of the other way around.

Of necessity there is some unavoidable repetition in the essays, but this does not detract from their usefulness as a source of inspiration to library school students as well as to librarians who view their profession with a somewhat more jaundiced eye than Dr. Shores. For Dr. Shores, like Vachel Lindsay's calliope, is "tooting joy, tooting hope," if not in such raucous notes.

—Frances Neel Cheney, George Peabody College.


This volume is the second in a series of annual reviews, but it is much more than that. With quality of exposition, comprehensiveness of coverage, and clarity of organization, it and its predecessor have created a discipline where previously there was only an amorphous, ill-defined area of interesting problems. As a result, the two together do credit to the National Science Foundation and the System Development Corporation, which provided the resources, and to the American Documentation Institute which provided the professional support. Full honor is due the individual authors, but more than usual is due the editor for the superb quality of this volume. He provided more than simply editorial guidance. He created an entire mechanism—for definition of the structure and coverage, for accumulation of the relevant references, for selection of the reviewers, for critical evaluation and re-evaluation of their analyses, for assembly and production of the final volume.

For the purposes of this review, the fourteen chapters can be divided into four groups: the first three, which present the design techniques; the next five, which present the technical techniques; the next four, which present areas of application; and the last two, which present the social and professional context.

In group 1—

1. Information Needs and Uses in Science and Technology, by Saul and Mary Herner;
2. Design of Information Systems and Services, by Harold Borko;

These are excellent summaries of the state of the art, "critical" in the best sense of the word. The evaluations can be summarized by the words of the writers: "relatively few techniques used," "lack of innovation," "failure to build on past gains..."
... (and) profit from past mistakes,” “absence of rigorous experimental designs,” “reports on the issues ... and the problems to be solved rather than on specific procedures for solving them,” “continued existence of nagging methodological and conceptual problems.” The design and evaluation of information systems to serve the needs of users is apparently still an art and does not have a large kit of tools to draw on. Developing new tools or learning how to apply the old ones better is a slow process.

In group 2—
5. File Organization and Data Management, by Jack Minker and Jerome Sable;
6. Automated Language Processing, by D. G. Bobrow, J. B. Fraser, and M. R. Quillian;
7. Hardware Developments and Product Announcements, by Andries van Dam and James C. Michener;

The growth of techniques for solution of specific technical problems, as summarized in these five chapters, presents an interesting contrast with the dearth of techniques for design. Thesauri, statistics, classifications, roles and links, citations, abstracts, etc.—all are tools for handling the description of document content. They may be of varying utility, but each can be used. The recent work on each is reviewed with real insight in Chapter 4. The variety of possible file structures, methods for linkage among records, and file indexing techniques is also great. Particularly important therefore is the growing number of “task-oriented” programs, reviewed in Chapter 5, which can handle these structures. The magnitude of the problems represented by “automated language processing” is great; it is therefore not remarkable that Chapter 6 concludes that “no great stride forward has been made this year.” On the other hand, the technology continues to progress, as the report in Chapter 7 amply demonstrates. As a result, the chapter concludes “that the largest problems ... are not those of choosing components but continue to be the intellectual ones.” (Parenthetically, it might also have been mentioned that the problems encountered in conversion to “third generation hardware” over the last two to three years have been predominantly due to software limitations.) Of particular interest is the evaluation that “the central processor, time-shared by small remote computers, holds most promise.” Chapter 8 brings this point into sharp focus, as it presents the status in development of large scale “multi-access” systems and concludes they “have been developed to only a relatively primitive level.”

In group 3—
9. Automation in Libraries and Information Centers, by Barbara Evans Markison;
10. Handling Chemical Compounds in Information Systems, by F. A. Tate;
11. Applications in Medicine, by William C. Spring, Jr.;
12. Techniques for Publication and Distribution of Information, by the staff of the American Institute of Physics.

Chapter 9 is, of course, of special interest to the readers of CRL. It is excellently written and emphasizes what the author regards as “the single most important facet ... the vast and growing number of marchers.” Chapter 10 reports on applications in chemistry, which historically has had the best developed means of access to scientific literature and still is at the forefront in the actual use of the computer as well as in its intellectual base in notation. However, the National Library of Medicine has perhaps accomplished more than any other single agency in demonstrating what computers can do in support of library services and is leading the way in its efforts to establish a national medical information system. The final application presented—publication—represents one of great importance, since it provides the means of justifying the input costs in large-scale information retrieval systems. The great variety of hardware techniques listed and the number of data bases being created as a by-product all attest to the increasing importance of computer based publication.

In group 4—
14. Professional Aspects of Information
Science and Technology, by John F. Harvey.

The growing national role of information science and technology is well demonstrated by the developments reviewed in these two chapters. Much of the emphasis in Chapter 13 is placed on "information networks," and the chapter concludes "the progress attained ... in the development of an efficient national information system is impressive." The concluding chapter reviews the activities of professional societies and summarizes the educational programs being created in universities throughout the country.—Robert M. Hayes—UCLA.

The American Printer, 1787-1825. By Rollo G. Silver. Charlottesville: Published for the Bibliographical Society of the University of Virginia by the University Press of Virginia, 1967. xii, 189p. $7.50 (67-22310).

Here is an important book. Recent years have seen a healthy increase in the quantity and quality of specific studies within the historical American printing industry—accounts of particular printers, or of printing in particular communities or in particular circumstances. The number of comprehensive comparative studies, however, which examine printers and printing horizontally, "across the board" as it were, has remained quite small. Studies of the latter kind, of course, are more difficult to make and require men of greater breadth of learning to prepare them.

Nevertheless the book here being reviewed is such a study, and its author is such a man, and therein lies its importance. It is one of the few attempts thus far made to generalize a comprehensive printing history out of documented scholarly studies and sources, instead of from the reminiscences and memoirs of old printers which, although interesting, are often inaccurate of fact and sometimes misleading of spirit.

Although this book unquestionably succeeds in establishing its claim to a place of significance, it is not truly a definitive history of printing in America during its designated period. The narrative moves smoothly through a well integrated whole, but the book remains rather a series of meaningful and fascinating, carefully researched, documented, interconnected essays in the history of American printing. The book opens appropriately, for example, with the best account thus far written of the conditions of apprenticeship in the printing trade. There are also essays—again the best done to date—on such subjects as: early labor organizations for journeymen printers; the handling of government printing contracts on the federal, state, and territorial levels; the business minutiae of operating a printing office; and there is an excellent account of early American typography and illustration. There are also essays which have been attempted before, such as the technical details of press construction and operation, and the movement of the press across the western frontier. In the judgment of this reviewer, they have never been better told.

In addition to its six chapters, the book also includes as an appendix a selection of examples of the sizes of some forty editions (250 to 5,000 copies) issued by Mathew Carey between 1792 and 1813. There is a full index and thorough documentation. Twenty-four fine plates illustrate and embellish the text, and—as readers are coming increasingly to expect of volumes published for the Bibliographical Society of the University of Virginia—the book is handsomely designed. It is highly recommended to all libraries and readers having an interest in this subject.—D.K.


The Research Triangle has been the subject of a number of articles and news releases but Dr. Wilson here provides the most up-to-date and complete account of its development. This study should be of particular interest to librarians because of the vital role that university libraries have played in making the Research Triangle one of the most successful of the industrial research parks. Dr. Wilson makes it clear that the Research Triangle is more than a research park. The park itself consists of five thousand acres near three great univer-
sities—Duke University at Durham, the University of North Carolina at Chapel Hill, and North Carolina State University at Raleigh. The author describes in considerable detail the work carried on by the Research Triangle Institute (a research and consulting organization) and shows the relation of the Institute to the three universities which own it, but operate it as a separate unit. The Institute has had significant influence in bringing about the cooperation of the three universities and governmental, industrial, and financial organizations of North Carolina in promoting research for the solution of many of the most pressing problems of the state, the Southern region, and the nation. The relation of the Institute to the Research Triangle Foundation and to the other fifteen research organizations which are located in the Research Triangle Park also is described.

The first buildings were erected in the Research Triangle Park in 1959, but the acquisition of land, planning, and promotion began with the appointment of the Research Triangle Committee by Governor Luther H. Hodges in 1955. The concept of a research center, however, which would utilize the brains, talents, and libraries of the three universities was formulated in proposals as early as 1952. Dr. Wilson has emphasized particularly the role of the universities in the development and growth of the Triangle as well as the part which the Triangle has played in strengthening the universities.

This study explores in greater detail than any previous article the contributions of the late Professor Howard W. Odum of the University of North Carolina at Chapel Hill and Romeo H. Guest, president of a contracting firm, in the development of the Triangle. Both of these men, and Dr. Odum particularly, had the dream of a regional research center years before it was established, and Dr. Wilson points out that Guest dramatized the idea by coining the name Research Triangle.

Success does not come easily to science parks; a recent article in *Industrial Research* points out that only about one-fourth of the 126 science parks in the United States and Canada are successful. Undoubtedly one of the essential ingredients in their success is the easy access by researchers to good research libraries. It was not the purpose of Dr. Wilson’s study to explore the role which nearby university libraries have played in the success of the Research Triangle, although it is certainly implied in the booklet. There is, however, need for a detailed study of the role of research libraries in a science park. A case study of how libraries in the Research Triangle area have cooperated to bring about easy access to research materials and of how much they have contributed to the Triangle’s success would be useful. A limited number of copies of Dr. Wilson’s booklet are still available and may be obtained by writing to: Research Triangle Institute, Attention: George R. Herbert, Director, Box 12194, Research Triangle Park, N.C. 27709.—I. T. Littleton, North Carolina State University.

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