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Teacher or Intermediary: Alternative Professional Models in the Information Age

Value premises underlying the "information versus instruction" debate in reference librarianship are examined in the context of technological design issues now before librarianship. Using theory developed by sociologists Rue Bucher and Anselm Strauss, it is argued that reference service is a "core task" for librarianship's professionalization movement. The "information versus instruction" debate is shown to address a key design issue for reference as a human service, and that issue is how the service is to be distributed. Following discussion of the conflicting value premises underlying this design issue, certain economic and technological developments that may affect the future of reference service are described. The development of a new model for practice, which transcends both the intermediary and teacher role, is proposed.

Will bibliographic instruction specialists, who have invested considerable amounts of their creative talents and time in what they saw as an up-and-coming career path, be displaced? Is the future of reference to be in online database searching and the realization of the dream in which librarians cease to teach and, instead, provide directly all the information that users need? Facing a new technological environment, "instruction types" seem to be thinking not about how they are to further develop and modify their specialty in the Online Age; they're worrying about "survival."

Rather than consider the future, this paper will look into the past—the past of bibliographic instruction, of reference service, and of some larger issues about the status of librarianship. The past treated here is not the consideration of specific historical events, but an examination of certain ideas that have shaped the development of librarians and their current ways of thinking about bibliographic instruction and reference service. Though many do not find such "philosophizing" particularly useful in day-to-day problem solving, a historical and sociological perspective can help librarians to better understand their present circumstance. Working toward a deeper understanding of the path to their current dilemmas may in the end allow librarians to see new options for the future that they didn't know existed.

A brief outline of the train of thought this paper will pursue may be helpful. The conceptual foundation underlying the argument presented here is the well-established relationship between instrumental value change and technological advance that has influenced many spheres of modern life, but especially environmental policy.1 The first objective is to consider the professionalization issue within librarianship and to show how reference work has played a very special role in the occupation's long struggle for higher...
professional status. This paper will argue that reference work has the qualities of what sociology has called a "core task" for the occupation as a whole. The second section will comprise a fresh look at the old "information versus instruction" debate, which has occupied reference theorists for at least twenty years. It will argue that the information versus instruction debate hides deeper issues and values that are related to librarianship's status and the "core task" nature of reference. These issues and values are not often discussed at meetings and in the literature, but deserve attention because of their effect on decision making. Following discussion of how these values may shape the future, this paper will touch briefly on some of the technological and economic factors that will also be important in the years ahead. It will conclude with a call to set aside the "information versus instruction" debate and replace it with a new model for a reference role that better reflects the fundamental values shared by librarians.

Regardless of whether the specific programmatic conclusions presented here are accepted by a sizable number of librarians in the field, it is hoped that this paper will open debate on value issues that have received scant attention in the literature up to now. Like other occupational groups (and especially those concerned with professionalization), librarianship has an unfortunate tendency to assume value consensus among its membership and is reluctant to open value debate because such debate threatens group solidarity. The value issues implicit in any technological advance, however, result in the concrete expression of values that may not be held in common by all group members, and so while solidarity may appear to be maintained on the surface, underlying contradictions may grow. This condition is exacerbated by the still-prevalent argument that technological (and professional) decision making can somehow be "value free." By exploring the value choices that accompany technological decision making in librarianship, librarians may in the long run clarify considerably their grounds for decision making.

With these preliminaries out of the way, attention is called to a social fact of librarianship that, over the years, has had an enormous influence in how librarians act, talk about themselves, and relate to the larger social world around them. That social fact is the tenuousness of their collective claim to professional status. Social status for librarianship has for most of the past hundred years been bound up with the fortunes of women in our society. The demeaning but widespread stereotypes, the low salaries, the organizational arrangements that so frequently make males the administrators and females the underlings, all attest to the status problems with which librarianship continues to struggle. As a "feminized profession" librarianship has encountered a variety of problems related to self-concept, problems that have at their root the same issues now being confronted quite effectively by elements of the contemporary women's movement.

A common response in dealing with problems of self-concept is to diagnose the difficulty as an "image problem," which is what much of librarianship has done. When trapped into thinking of its status condition as the result of "image problem," it retaliates by creating counter-images, like the image of the high-technology "new librarian," the occupation's equivalent of a Virginia Slims commercial.

A key rhetorical device librarianship has used to legitimate itself and raise its status has been to seek in the occupation parallels with other higher-status fields. An important means librarians use to draw those parallels involves reference work and what sociologists Rue Bucher and Anselm Strauss have called "core professional tasks." "Core professional tasks" are those tasks that are shared by large numbers of a particular occupation's membership and that serve to make the members distinctive as a group to the lay public. For lawyers, the core task is arguing in a courtroom, for doctors it is interacting on an intimate basis with clients—the so-called doctor-patient relationship. Never mind that most lawyers seldom come close to a courtroom, never mind that doctors' interactions with patients may more often be perfunctory or through an EKG chart rather than face-to-face; the symbolic power of the "core task" in the public mind provides a ready identification for the profession as a whole that conveys status, the performance of special and esoteric skills, and a sense of...
the critical role that the professional members play.

The performance of reference work is a "core professional task" for librarianship as a whole, and as such, all of librarianship (and particularly its professional leadership) has a stake in defining reference work to suit rhetorical purposes. Though reference is only one of many specialties, it is a unique specialty that resonates in so many ways with that other "core task" of a most high profession, the doctor-patient relationship. This paper attempts to show how librarianship as a whole benefits from the image that that particular specialty can convey.

There are a number of features of reference work that reveal the sense in which this task mirrors tasks of higher-status occupations. First of all, reference is a librarian role that involves a "professional-client" relationship, unlike other task areas such as cataloging, book selection, and administration, where the contact with library users is not often direct. Because there is user contact, reference is the "public face" of the occupation. It is the most visible occupational model, if one discounts the person who checks books out at the circulation desk, who is more often not a librarian, anyway. Reference work is also a specialty area in which the "application of special and esoteric knowledge," that criterion so important to achieving professional status, is patent: the public perception of the all-knowing reference librarian (which coexists with other, less flattering images) is testimony to this special characteristic of reference. Still other qualities of reference work that give weight to its "core task" nature are that the work is not reducible to rules, it is difficult to measure, and its practice relies on intuition, hunches, and bits and pieces of information that only long experience and a retentive mind—not a textbook—can develop. Finally, there is a "private practice" character to reference work that is not shared with other library specialties. The reference librarian, though a member of the library staff like the cataloger or the circulation librarian, performs work on the behalf of specific, identifiable users rather than directly on behalf of the organization as a whole. Such a position enables the reference librarian to bend the rules, take shortcuts, and in other ways demonstrate autonomy in relation to the bureaucratic red tape with which the public sees the library organization encumbered.

All of these characteristics of reference work combine to provide librarianship as a whole with a set of images that serve to enhance the occupation's status. Librarians know that reference work is not any more important or necessary than cataloging, circulation, administration, or any other area of librarianship. One can't provide good library service without all of the different specialties working together. Yet in all this, it is reference that provides a number of paradigmatic work roles which give considerable ammunition in the occupation's fight for higher social status.

The problem of the status of librarianship and this special role that reference plays in the striving for professional recognition has had a subtle but important influence on an old debate in the reference field. I refer to the "information versus instruction" debate. For those unacquainted with this debate, the basic positions may be stated very simply. The information side argues that it is the role of the reference librarian to concentrate practice on the delivery of information extracted from the source in which the information is found in as complete and digested a manner as possible—in short, "question-answering." Teaching users how to retrieve information themselves, it is felt, falls short of the ideal professional goal of maximum service delivery. The instruction side argues that an appropriate and desirable reference activity, though not the sole activity, is to help users by teaching them how to find answers for themselves. A key element of the instruction side of the debate is the advocacy of self-reliance.

In their extreme forms, the two sides of the debate define two alternative role models for the reference librarian: the information intermediary on the information side, and the teacher on the instruction side. It is difficult at this point to see whether one role model will win out in acceptance over the other as more relevant to our time. It is possible that the two will come to coexist, resulting in two specializations competing between each other for resources, and the likely decline of general reference service as we have known it. Through describing some of the technon-
logical, organizational, and social factors involved in the “information versus instruction” debate, the present situation will be made a bit clearer, and in the end, a resolution that fashions a new role (which is neither teacher nor intermediary, but which combines some of the features of each) will be proposed.

The growth of online bibliographic searching, in which librarians play out to the fullest the intermediary role, has been an important causal factor in reopening the “information versus instruction” debate. Reference librarians are now having to decide which area—online searching or bibliographic instruction—will better further their individual careers, and reference administrators are being forced to decide how best to allocate scarce resources between these two expensive functions. Making decisions requires some projection into the future, and any projection is based on assumptions and values presently held just as much as on assessments of technological and economic trends. Because the trends in technology are for the most part outside the domain of librarianship, we can have some notion of their nature but little control over their direction. Although assumptions and values too often go unexamined, it is time we look at and articulate them more carefully, for through such examination librarians can not only better predict the future, but also perhaps take part in shaping it.

The intermediary role has always had the edge as a role model among those who have a strong interest in the status aspirations of librarianship. The reason for that advantage is plain: the intermediary role expresses the “core task” nature of librarianship. The intermediary role, if fully implemented, would provide considerably more status value to librarianship than the instruction role, just as the doctor has higher status than the teacher. Advocates of the intermediary role, such as Samuel Rothstein, Bill Katz, and Tom Galvin, seem often preoccupied with image; they speak of the role in glowing terms that have limited correspondence to practice, for in practice, answering questions often seems closer to Band-Aid dispensing than to brain surgery. Bibliographic instruction is frequently attacked on grounds of the poor user evaluation it receives, but these critics totally ignore the few careful evaluations of question-answering in libraries, evaluations which are so distressing that we all often pretend they never appeared in print. A significant boost to the intermediary role was provided with the innovation of online searching in the early 1970s, because the technology was sufficiently complex and the economics were such as to make intermediaries attractive to both librarians and end users. It was great for those who were concerned about high status for the field because of the status value provided by the visible and public association with computer technology. Early experiments by some researchers to provide users with direct access met in failure, a very welcome result in the eyes of many librarians who enjoyed the newfound status. User dependency on librarians seemed assured by the new technology.

But what about the consequences of the intermediary role for service? What other values does the choice express? The most basic organizational issue in reference service, like any social service, is how it is to be distributed. Although this has long seemed to be a nonissue in reference—those who receive the service are those who ask for it—it is a genuine and serious issue that is unfortunately hidden under the debate over appropriate modes of reference practice.

As a service that has seen little, if any, design change since its origin in the late nineteenth century, librarians tend not to think of the value choices implicit in that design that they have also inherited. They all accept as a basic postulate that reference service is useful to anyone, at least potentially. Almost every user walking in a library door has one or more questions to which a librarian could provide answers. Yet it is known that many if not most library users do not ask questions of librarians, and are actually only vaguely aware of the range of services a reference librarian may perform. Those few questions that are asked relative to the much larger number which users choose to keep to themselves are thus typically of a lower level than the questions for which answers are sought; and most questions go unasked of a reference librarian. Serious questioners are a small minority of users. This leads to the realization that reference service as it is classically performed in an intermediary role is a service
for the few. The intermediary role model, of necessity, advocates providing information only to those who ask, and promises maximum service to that minority. The maximum service that the intermediary promises can be delivered only if there is a substantial limitation on demand, that is, if most questions don't get asked of a librarian. That limitation on demand is provided quite conveniently by the learned behavior of users to not ask questions.16

With online searching as it is presently practiced (the logical extension of the intermediary role), other means of limiting demand have been found, such as charging fees, providing minimal publicity for online, and creating the impression that the service is only appropriate for advanced and sophisticated researchers.

In contrast to the value choice of service to the few, which is implicit in the information-giving mode of service, those who advocate instructing users make the opposite value of distributing reference service in as egalitarian a manner as possible. Helping users to help themselves provides for a wide distribution of service, though of course not all of the service is provided by librarians. Those who have had experience in mounting effective instruction programs know, too, that such programs do not reduce the number of questions reference librarians must answer across the desk; the programs increase the number, and, as well, typically make the questions more interesting. By allowing users to become their own question-answering, instruction advocates to some degree blur the distinction between librarian and layperson, a blurring that has caused problems for those anxious about the occupation's status. The information side of the debate values self-reliance and devalues the dependence on experts which results in service disequilibrium and general service scarcity.17

Technological advances such as online tend to clarify the implications of value choices that were made long ago without full awareness of their ultimate consequences. These advances require librarians to look harder at their values and perhaps seek change in them. The choice between service to the few and service to many implicit in the "intermediary versus teacher" decision provides just one more example of this general phenomenon. Medicine, of course, provides the best-known example. The notion of the doctor as the all-responsible healer led to the development of high-technology medicine, and now we are realizing the huge economic and social costs of the dependency relationship fostered by that kind of medicine.18 The economics of information retrieval technology, however, which librarianship has only very limited control over,19 will result in a lessening necessity for information intermediaries.

With computer costs still dropping and the information producers seeing a need to increase the size of their markets, the development of more user-friendly systems seems highly likely. The information industry has used librarians as effective and cheap retailers up to now, but only through direct appeal to end users can the industry achieve the size market it needs. New systems are being developed for the growing home computer market, and terminals are becoming about as common as the family encyclopedia. New pricing structures may be implemented to ensure that maximum market saturation is achieved. Although current pricing methods for online now favor the utilization of intermediaries, changes may be in the offing. Proposals have been made to charge a flat up-front admission fee to a database plus a "viewing" charge for partial output, which would virtually eliminate the economic advantage that highly skilled intermediaries now have over novice end users.20 Many other technical innovations in online searching combined with new economic conditions make end-user access more and more likely.21

The president of Dialog Information Services, Inc., has recently mounted a new counter-argument to the economic argument for end-user access.22 Since Dialog's experience has been that providing telephone assistance to naïve end users is very expensive, it is argued that end-user access is not viable. What such an argument neglects, of course, is the factor of alternative system design criteria. Systems such as Dialog have made considerable developmental investment in a market of trained librarian searchers; the retooling of these systems to accommodate a new market of nonintermediary users may require more capital than is now available to Dialog. Thus, while the older established
commercial search systems may not move into the end-user market, other newer systems are likely to do so. 23

In academic libraries the development of online catalogs may also lead to the intermediary role becoming an anachronism. Catalogs must be user friendly, or at least have the appearance of friendliness; if they were not, the amount of time required for staff assistance would be staggering. At Northwestern, for example, there is now an online authority catalog reflecting virtually all of the library's monographic holdings processed since 1970, and all of its serial holdings, including the latest issue checked in, can easily be displayed on public terminals. Subject access to the online file is now available in a test mode. With members of the Reference Department and other public service staff members working closely with system developers to design online instructions into the catalog itself, the teaching functions of reference again come to the fore. As the library staff members gain more experience with such systems and machine costs continue to drop, it may be from there but a simple step to acquire tapes from other database producers, load them onto their systems, and let their users search them as they do the library's catalog. 24

The present competition between those who advocate the intermediary role and those who advocate the teaching role is unfortunate and unnecessary. It divides the ranks of reference librarians at a time when unity of purpose on behalf of user needs has never been more important. Those who favor exclusive practice of an intermediary role lock themselves into the practice of a specialty that is rapidly approaching obsolescence due to continuing economic and technological change. The intermediary role also cannot hope to satisfy the information needs of more than a small minority of library users, and thus cannot meet a critical social need for greater equity in the distribution of knowledge. Attempts to foster a dependency relationship between librarian and user may promise short-term gain for librarianship, but they are, in the long run, counter to the interests of both librarians and users. 25

Though the critique presented here has focused principally on the intermediary role, it must be said that the teaching role as it has been implemented is also in need of much critical examination.

Much of what is being taught in bibliographic instruction programs is mind-deadening. Teaching about the problem of information retrieval can be intellectually challenging, as the problem touches on some of the most difficult questions in philosophy, linguistics, psychology, and sociology. The bibliographic instruction curriculum should be broadened to treat more thoroughly and creatively basic principles, including such things as set theory for online searching. At the same time, it should take the teaching of technique out of the classroom and into self-instructional learning packages, hands-on experience, and other less expensive mediated methods. Above all, advocates of the teaching role should not make a cult out of teaching. Librarians provide many helpful and necessary services besides teaching, and the totality of that contribution deserves recognition in its own right. Attempts to emulate academic faculty roles can be just as dysfunctional as attempts to mold reference into a doctor-patient model. The teaching cult also tends to divide instruction librarians from all other librarians, which is harmful to all librarianship. For all of these reasons, librarians must work toward defining a new role for reference service.

Forging a new role model for reference librarianship requires first the disabusing of the idea that reference must be a "core task" of a status-seeking profession. The intermediary role is the embodiment of the "core task" idea, and as such serves the status interests of librarianship at the expense of the information needs of library users. If librarians truly wish to work toward the best interests of their users, it is absurd to continue to advocate the old classic professionalism, which places users in a dependency relationship with librarians. Such a relationship does a disservice to users and ultimately retards the development of library services, of librarians, and of much library technology.

The intermediary role still has a powerful appeal to many in librarianship, especially to many library school faculty members, because of the professionalization interests that the role serves. Librarians cannot work to discard it without offering an alternative that is also powerful and intellectually
sound. Pauline Wilson is essentially correct in her critique of the teaching role as being inadequate, and even harmful in some respects, for our field, so further search for a new role is in order.

Though no alternative model adequate to librarianship has yet been fully developed, there are movements afoot in other human service fields that bear close watching for the examples they may provide. These movements all have in common a characteristic that lies at the heart of the ideals of librarianship: they value the sharing of information. The movements are also radically humanistic and show a healthy skepticism toward technological fixes, though they are not anti-technology. The holistic health movement is perhaps the best known of these, but other occupational areas besides physical health are involved in forging a new role model, among them psychotherapy, social work, media and computer activism, and economics. Some useful texts that may help librarianship explore new models for reference service include the book *Helping Ourselves: Families and the Human Network* by Mary Howell, Theodore Schultz' new book *Investing in People: The Economics of Population Quality*, a very interesting article by Paul Hawken in the spring 1981 *CoEvolution Quarterly* called "Disintermediation," the work of Ivan Illich, and that of Gregory Bateson. Their message calls upon experts of all kinds to rethink their relationships to nonexperts, and to work toward the sharing of knowledge rather than its opposite, the monopolization of knowledge implicit in the classic professional model.

Undertaking the project of redefining appropriate helping roles for librarians will require the work of many individual librarians, experimentation and research in libraries, and much communication with users. Such redefinition cannot be merely a paper exercise practiced by authors in library journals. But the undertaking appears valuable and librarians, in the end, might not only provide better service for our users but also be the happier for it.

**REFERENCES**


5. Acknowledgment is made here to Donald W. Ball, "An Abortion Clinic Ethnography," *Social Problems* 14:293-301 (Winter 1967), from which the author has borrowed a way of looking and the idea of a "rhetoric."


8. A large number of papers supporting this position have appeared over the years, among them, Samuel Rothstein, "Reference Service — The New Dimension in Librarianship," *College & Research Libraries* 22:11-18 (Jan. 1961); William Katz, *Introduction to Refer-

10. Trudy A. Gardner, "Effect of On-line Data Bases on Reference Policy," *RQ* 19:70-74 (Fall 1979), highlights the competition, though the paper fails to address the value premises that might form the basis for deciding appropriate relative emphases on online and instruction.


12. James M. Kusak, "Integration of On-line Reference Service," *RQ* 19:64-69 (Fall 1979), provides a good illustration of the status and image issues advanced.


14. Patrick Wilson, *Public Knowledge, Private Ignorance: Toward a Library and Information Policy* (Westport, Conn.: Greenwood, 1977), has persuasively argued the error in that postulate. His prescription for remedy merits discussion in the field; it may be that through such discussion, values different from Wilson's alone will be seen to bear on the issues presented.

15. Mary Jane Swope and Jeffrey Katzer, "The Silent Majority: Why They Don't Ask Questions," *RQ* 12: 161-66 (Winter 1972), provides some empirical verification that a small percentage of user questions are posed to reference librarians.


23. A. K. Kent, “Dial Up and Die: Can Information Systems Survive the Online Age?” Information Scientist 12:3-7 (March 1978) argues for a governmental policy that would encourage alternative system designs to those that presently exist and dominate the market.

24. The soon-to-be-available GPO Monthly Catalog on RLIN may be cited as an example.


32. For insight into the is point, see Paolo Freire, “Extension or Communication,” in his Education for Critical Consciousness (New York: Seabury, 1973). This is not to say that critical writing is not helpful. For a useful discussion paper, see Ray Lester, “Why Educate the Library User?” Aslib Proceedings 31:366–80 (Aug. 1979). Lester, unfortunately, makes a curious separation between culture and work.
This paper links the origin, decline, and renaissance of bibliographic instruction (BI) to the increasing specialization and democratization of education. It argues that BI in academic libraries and the reference desk in public libraries were both initiated to foster independent learning by unsophisticated users; that BI, introduced by scholar-librarians in the 1870s, could not be sustained by the semiclerical graduates of early library schools and was consequently displaced by the reference desk, and that improved training and status for librarians contributed to the BI renaissance of the 1960s. Library schools should recognize the centrality of BI to academic librarianship and develop its theoretical base. Concept-oriented BI can help students understand the disciplines as different but equally rigorous approaches to knowledge by comparing their bibliographic structures and research methods.

INTRODUCTION

Three broad themes comprise the major bibliographic instruction (BI) issues that are now coming to the fore, and define the likely dimensions of BI’s continuing development. Intellectually, BI librarians, or instruction librarians, as they will also be referred to here, are striving to move BI content from facts and procedures to concepts and theory. Socially, they are struggling on two fronts: in the academic environment they seek recognition of the educational value of bibliographic instruction; in their own professional environment, they seek its recognition as a core function of librarianship. These are not new themes, of course. The difference now is that there is finally a critical mass of instruction librarians who are confident and experienced in the teaching role and ready to put these basic issues first.

In this paper, these three dimensions will be projected backward into the early history of bibliographic instruction. What were the intellectual and social issues then and how were they related? An approach from this perspective may illuminate the present situation and help BI librarians go forward with a clearer sense of purpose.

HISTORY

The modern American system of higher education and the development of librarianship as a distinct occupation both had their origins soon after the Civil War, as a consequence of four interdependent social forces: the growing importance of technology, the democratization of American culture, the secularization of knowledge, and the burgeoning of basic scientific research and systematic scholarship. The character of academic libraries was shaped by their dual
environment of academia and librarianship, and the early rise and swift decline of bibliographic instruction between 1870 and World War I can be traced to the combined effects of these environments.

Until the 1860s American higher education followed the British model. Through a fixed religious and classical curriculum, the goal was to turn upper-class youths into moral, cultured gentlemen. In 1862, when the Morrill Act provided federal land grants for the establishment of institutions to teach “agriculture and the mechanic arts,” higher education was transformed into an instrument for social betterment. In the 1870s the same spirit motivated introduction of the elective system. Both elite, private Harvard and democratic, land-grant Cornell began allowing students to fashion their own programs, opening the way for faculty members to offer whatever courses their interests dictated. For the presidents of both institutions this was a deliberate means of replacing the old curriculum with new, socially useful subjects without first having to debate educational philosophy with conservatives.

The elective system was widely copied, and the resulting proliferation of college subjects led not only to a demand for more professors but to a demand for a new kind of professor—the subject specialist to replace the generalist, who had been master of all subjects in the old, narrow, fixed curriculum. As the transformation of college education progressed, the enlarged, specialized faculties became grouped into academic departments. Their specialized expertise soon brought them the right to determine programs and standards within their own fields, a power formerly centralized in the president. While this decentralization was occurring at the college level, the rapid development of scientific research and systematic scholarship, modeled on the German achievement, led to the establishment of research-oriented graduate education. Johns Hopkins, which opened in 1876 (with, it should be noted, a former Yale librarian, Daniel Gilman, as first president), was planned as a graduate institution only. Harvard, anticipating competition from this new university, was prompted to offer graduate-level courses in 1875.

This educational revolution of the 1870s was accompanied by a surge of library development. Both university and public libraries began building research collections in the 1860s. The technical problems of organizing large collections for efficient access were solved by Dewey’s classification scheme, developed at Amherst College in the 1870s, and Cutter’s dictionary catalog, which was introduced at Harvard in 1861. The new research libraries existed for the sake of scholars, and it was reasonable to assume that professors working in specialized fields knew their literature and could cope with classification and cataloging schemes. But the broadening of college course offerings under the elective system and the new independence of students was creating a class of novice library users. Librarians championed students’ right to independent access by extending library hours beyond the usual one or two days a week and by helping students select books and find information.

Most of the early academic librarians were professors, responsible part-time for the library, possibly chosen for the job because they retained generalist interests in an era of increasing specialization. Their natural inclination in an academic setting was to teach the use of library materials for academic purposes. Justin Winsor, appointed at Harvard in 1877 as professor of bibliography and one of the few full-time academic librarians, was a Harvard graduate who had studied at Paris and Heidelberg and was a respected historian and cartographer. He believed that colleges should “pay more attention to the methods by which a subject is attacked” and should “teach the true use of encyclopedic and bibliographic helps.”

Azariah Root of Oberlin College Library had an Oberlin BA and an MA, had studied law at Boston University and Harvard, and had spent a year at Göttingen, whose library provided the standard for the new American universities. From 1899 to 1927 he taught a sequence of courses on library organization, bibliographic resources, and the history of the book. Edwin Woodruff, reporting on BI at Cornell in 1886, wrote that it was the “duty of a college library to teach the student how he may, if necessary, at any time in his post-collegiate years, seek out and use the books that have displaced or carried along the knowledge of his college days” and
to "reveal to [the student] the fact that no professor's word is final." 8

Academic librarians were thus on the way to establishing a position for themselves as educators, and they could perhaps have filled in part the general education role abdicated by a specialized faculty. But the inexorable flood of acquisitions in research libraries caused a shortage of trained librarians, who learned their profession one by one as apprentices after receiving their college degrees. Responding to the shortage, Melvil Dewey opened his School of Library Economy at Columbia in 1877, where he was then librarian. With reformist zeal, he not only admitted women to his school but required only native ability and good character for entrance, over strong protest by Winsor and other leaders in the field. Other library schools followed his lead. Courses in the early library schools were entirely practical, emphasizing typing and "library hand" as well as classification. 9 Thus, classification and cataloging, which had required enterprising intelligence for their invention, were largely routinized within a few years into semiclerical work.

Most of the new library school graduates were neither the intellectual nor social equals of academic faculty. BI of the sort developed by Winsor and Root could not be routinized or divorced from familiarity with the curriculum and research methods, and it is unlikely that the new breed of librarian would even have attempted it. But the head librarians, although still appointed from the professorial ranks, were also being pushed from the teaching role by collection growth. In larger libraries, at least, they had to function more as administrators than as educators, responding more to the demands of powerful departments than to student needs and presiding over a proletariat of assistant librarians who were little more than clerks. There were, of course, a number of very able women in the field, as a check of Notable American Women will reveal, but there is no doubt that Dewey's good intentions depressed the profession as a whole.

A bibliography of articles on academic library instruction published between 1876 and 1932 documents the decline from instruction in use of library materials for research to instruction in access procedures. 10 The early entries from such institutions as Harvard, Princeton, Yale, Amherst, Dartmouth, Bowdoin, Wesleyan, Columbia, and Johns Hopkins show the influence of the Winsor-Root-Woodruff approach. From 1907 on, there is increasing incidence of articles on teaching basic access skills to freshmen in normal schools and agricultural colleges, and by 1926 the opinion was published that freshman instruction is remedial and should be the responsibility of the high schools.

Meanwhile, another approach to user assistance was taking hold in academic libraries. In 1876 Samuel Green reported his introduction of formal reference service at the Worcester, Massachusetts, Public Library. 11 Public libraries had a concern for the needs of unsophisticated users similar to the academic librarians' concern for students, and the idea of having a librarian at a visible desk to give ad hoc responses to individual users' questions was gradually adopted into academic libraries. Unlike BI, reference service required no planning or lecturing, no direct involvement in the academic program, and little exposure to faculty scrutiny. To the average library school graduate, the role of reference librarian must have been much more congenial than any attempt to emulate Justin Winsor as professor of bibliography.

Yet interest in BI at an intellectual level did not disappear. In 1928 the librarian of Swarthmore College criticized the shallowness of the library instruction usually given to freshmen and suggested establishing academic departments of bibliography that could offer sequenced courses in library research. 12 In 1934 Louis Shores first described his idea of a library-college in which teaching librarians would team with subject-specialist professors to guide undergraduates in independent, interdisciplinary study. 13 Harvie Branscomb, in a report commissioned by the Association of American Colleges, made a similar recommendation in 1940. 14 All of these proposals were tied to the ideal of general education for undergraduates in an era when specialization was ascending. Indeed, increasing specialization of teaching at the undergraduate level was recognized as a mixed blessing almost as soon as the old cur-
riculum had been overthrown. The elective system suited that minority of undergraduates who had well-defined scientific or vocational interests and who knew what courses they needed to achieve their goals. But less directed students often floundered, and many faculty still believed that character formation through broad humanistic study should be the essence of undergraduate education. Yet repeated attempts from the 1880s through the 1940s to introduce general education programs in major universities were thwarted by lack of consensus on an essential core of knowledge, by the ambivalence of science faculty, by reward systems that favored faculty research over teaching, and by suspicion of lingering elitism.

After World War II, from 1945 to about 1970, changes in the production of knowledge and in higher education repeated those that had followed the Civil War. Again, government support brought a sudden expansion of research in science and technology. Exponential growth in the volume of research literature was followed by extensive ramification of the bibliographic apparatus. Academic libraries responded, as they had in the 1860s and '70s, with rapid collection growth and with new techniques of organization and retrieval. Consequently, in the 1960s, as in the 1880s, there was a severe shortage of trained librarians. The library schools had been upgrading gradually and the fifth-year master's degree had by this time become standard; now the schools began offering courses in documentation and computer applications. Job mobility and salaries improved, and librarians began to gain some recognition as technical experts. In academic libraries, directorships formerly held by nonlibrarian scholars were now more often filled by administrators with technical knowledge.

Through the 1950s library instruction—usually routine or merely remedial where it was offered at all—was almost completely eclipsed by developments in technical services, which were at once more interesting and more advantageous for the professionalization of librarianship. In 1956, Jesse Shera, one of the chief spokespersons for intellectualism in librarianship, advised librarians not to pursue the teaching role. He recommended, instead, that librarianship be developed as a discipline in its own right, comprising subject bibliography, the theory and techniques of documentation, and the investigation of how scholars and students make use of recorded knowledge. He outlined the subject matter of a social science discipline of librarianship that would have been the ideal theoretical base for the Justin Winsor approach of tying practical instruction in research techniques to the "method by which a subject is attacked" by scholars. But Shera apparently saw nothing in this relevant to undergraduate education; he certainly saw no realistic hope that librarians could participate directly in the educational process.

Also after the war, a new wave of government-supported democratization of higher education extended the democratization begun by the land-grant act of the previous century. The ideal of universal higher education brought in a huge student population with a greater range than ever before of academic abilities and preparation. Vocational-professional programs proliferated; teaching in the traditional science and social science fields became more preprofessional as the ever more specialized faculty found more of their students aiming for graduate study. Again, the increasing fragmentation of knowledge into specialties produced a counter-movement, this time strengthened by reaction to the impersonality of mega-universities. In the 1960s rigid syllabi and assigned paper topics gave way to more independent study as faculties accommodated to student rebelliousness. Several small experimental colleges were founded in an effort to provide the option of integrative, humanistic education for more undergraduates.

Just as the decline of BI early in the century had been the product of social forces in the professional and academic environments, so was its revival in the 1960s. Two problems related to developments in education could be tackled only through systematic group instruction, and librarians, equipped now with better training and higher status, were ready for the challenge. The first problem concerned the continuing effects of specialization. Patricia Knapp's grant-funded project at Monteith, one of the new small colleges, reflected her conviction that library competence is a liberal art that is systemati-
cally ignored by subject specialists intent on imparting content rather than competence in learning. She developed a problem-solving approach to library instruction.

The second problem was the consequence of rapid democratization combined with the increasing complexity of libraries. In the public colleges and universities especially, ad hoc reference service was not adequate to the needs of increasing numbers of students who lacked basic library competence but who were nevertheless expected to cope with a bibliographic apparatus geared to graduate students and faculty. In this situation, library instruction focused on general access skills and on use of the more technical bibliographic tools. These two strains—problem-solving and access-skills instruction—persisted through the 1970s, but they seem now to be converging gradually into the concept-oriented instruction that is being developed in the 1980s.

HYPOTHESIS

The three dimensions of bibliographic instruction will again be examined, this time in a different order. It was stated earlier that “in their own professional environment [instruction librarians] seek recognition of [bibliographic instruction] as a core function of librarianship”; “intellectually, [they] are striving to move [its] content from facts and procedures to concepts and theory”; and “in the academic environment they seek recognition of [its] educational value.” How does the historical perspective enable BI librarians to see more clearly where they stand?

Consider first the place of BI in librarianship. Library collections and technology were developed originally for the support of scholarship. But librarians were motivated also by a strong social service ideology. They sought to provide not only access to libraries by the untutored, but also assistance in use, without which access alone would have been for many a pointless privilege. Public librarians appropriately established reference desks. They placed them only in the popular reading areas where questions would not usually arise from the context of academic disciplines, not in reading rooms used by scholars. Academic librarians, also appropriately, offered instruction to students in the use of library resources to answer questions that normally did arise from academic disciplines.

At one level, the purpose of the public library reference desk and academic library instruction was the same: the democratic goal of fostering independent learning, free from reliance on tradition or authority. But in the academic library the “authority” of the disciplines could not reasonably be ignored. To learn independently in that context, the student had to learn how to keep up with ongoing research and how to evaluate one expert opinion in the light of others. The reference desk was designed for responding to specific questions and providing information, not for imparting such an understanding of general research principles.

Thus, it is hypothesized here that the reference desk, offering ad hoc information service, displaced BI so decisively as the focus and ideal of academic library service largely because few graduates of the clerically oriented library schools had the competence or status to teach research methods, however tenacious they often were in the search for information. If this theory is correct, the concurrent rise of the reference desk and decline of group instruction in academic libraries was an unintended consequence of Dewey's social conscience, not a deliberate redefinition of the academic librarians' role. Therefore, historically as well as logically, BI librarians are on firm ground in claiming that BI is one of the primary functions of librarianship and are right in insisting upon its inclusion in library school curriculums.

Second, consider the matter of content. BI, as originally conceived by the professor-librarians, was intended to teach broad problem-solving research methods. That goal, which lends itself to conceptual approaches, has survived mainly in the small liberal arts colleges that now enroll only a minute proportion of American students. In the public universities that have dominated modern higher education, the combination of huge student populations comparatively lacking in basic academic skills, the increasing complexity of libraries, and the technical character of many academic programs has of necessity focused BI on tools and locational procedures.

But experience has shown that knowledge of technique is not enough. It does not, for
example, enable students to cope with discrepancies or bias in standard reference works, to distinguish scholarship from journalism, or to judge the kind of resources needed at each juncture in the research process. And learning theory confirms that facts and procedures isolated from a meaningful structure are neither grasped well nor retained. Lately, therefore, the search for theoretical principles, once seen as a luxury for those who could instruct small groups in selective colleges, has taken on a more practical urgency.

So far, BI has been a pragmatic enterprise advanced through informal observation of student researchers, through largely unevaluated efforts to teach them more efficient ways, and through continuing adjustment to institutional realities. Instruction librarians have made painfully slow progress, theoretically, since Patricia Knapp's work in the early 1960s. Now that they agree in general on the need for theory, perhaps they can consciously cultivate appropriate research. Medical education was revolutionized a century ago when American university medical schools accepted the responsibility to pursue whatever research was relevant to professional practice. BI librarians should expect no less. They already draw on studies of scientific publication and citation patterns, and they need precise behavioral studies of how scholars in different disciplines and novice researchers use the literature. BI librarians need to make qualified researchers aware of them and of their needs; fruitful cooperation might result.

Finally, consider the educational role of BI. It has been seen how increasing specialization has fragmented the undergraduate curriculum, leaving students vulnerable to the mistaken view that a given discipline is truth. Many faculty members regret in principle the abandonment of general education, yet their own interests are often incompatible with educating the whole student. They are trapped in a system that requires highly specialized research for professional survival. Repeated efforts to overcome the effects of fragmentation by required general courses have all failed, having been accused of cultural insularity, snobbishness toward middle-American materialism, or sheer vacuity. So the need remains for a means to synthesize fragmented knowledge without resort to any suspect value system.

It is this author's belief that the growing interest in the philosophy and sociology of knowledge has been at one level an effort to tame the arrogance of disciplines. There is a need to reduce them to human size by understanding them as alternative approaches to knowledge of the world, with no exclusive claim to truth and no immunity to the social forces that influence every other human enterprise. Philosophy and sociology of knowledge, however, are not easily presented to undergraduates; they require too much background in cultural history. But bibliographic instruction may provide a relatively value-free approach to the comparative study of academic fields and disciplines that is accessible to undergraduates. It is possible to use publication and citation patterns to compare what counts as knowledge in the different subject fields and to contrast the processes by which their knowledge is generated, evaluated, and used, or consigned to the archive.

**Conclusion**

BI librarians are therefore justified in claiming a central role for bibliographic instruction both within librarianship and within the larger academic enterprise. Their predecessors once saw the teaching of research methods as a basic function of academic libraries; the present generation may see the realization of their vision. This generation of instruction librarians knows more about the structures of disciplines and the ways of learning than did previous generations. And in the increasingly specialized and divided groves of academe, the need for an integrative role for BI is even greater.

**References**


17. Rothstein, Development of Reference Services, p.22.

Background Characteristics and Education Needs of a Group of Instruction Librarians in Pennsylvania

This paper summarizes a study conducted on a group of instruction librarians in Pennsylvania to describe their backgrounds and determine their perceptions regarding the adequacy of their preparation and their needs for additional training. The study revealed: (1) over 60 percent of the group has taken credit courses dealing with instruction; (2) the majority is trained as reference librarians and works in that area now; (3) they are professionally active and read appropriate journals; (4) they participate in appropriate continuing education activities; (5) they see previous teaching experience as important; and (6) they feel they are adequately prepared, but see benefit from additional education.

A survey was conducted in the spring of 1980 as part of a doctoral dissertation to determine education and training characteristics of a group of instruction librarians at selected colleges and universities in Pennsylvania. The chief library administrators at these institutions were contacted; they identified a population of 145 librarians involved in bibliographic instruction. A questionnaire was mailed to these librarians. Of the librarians who returned the questionnaire, 12 did not meet the minimum requirements of an MLS degree and two years' instruction experience, producing a sample of 133 and yielding 120 eligible completed questionnaires and a response rate of 90 percent. Many of these librarians took the time to comment on the survey, reflecting professional commitment and a lively interest in bibliographic instruction.

Thirty-nine questions concerning the education and training of these librarians, as well as their perceptions regarding the adequacy of their preparation, and their needs for additional training, produced data to answer the objectives of the study. These objectives were:

1. to determine if librarians engaged in bibliographic instruction received education and training, particularly in learning theory, teaching methodology, and/or instructional development;
2. to determine how and when education, training, and experience related to bibliographic instruction were gained;
3. to identify education and training needs of bibliographic instruction librarians as perceived by the population;
4. to gather limited demographic information about the population; and
5. to identify associations between the background of the respondents and their perceptions regarding (a) their need for further education and training, and (b) the adequacy of their backgrounds when they first engaged in bibliographic instruction.

Several assumptions were made in design-
ing the study: (1) credit course work in learning theory, teaching methodology, or instructional development (comprehensive curriculum development and evaluation), coupled with the MLS degree constitute appropriate background to engage in bibliographic instruction; (2) two years' experience in bibliographic instruction is sufficient to permit the librarians involved to make judgements as to whether their preparation was adequate; (3) concentration in reference work in an MLS program, or assignment to reference duties implies an awareness of bibliographic instruction concerns; (4) membership and activity in professional library and education organizations imply an awareness of bibliographic instruction programs and their problems; and (5) regular reading of library and education journals implies an awareness of bibliographic instruction and the problems associated with it.

The academic institutions involved in the study were selected to include a contained geographical area with the assumption that close proximity would ensure an adequate response rate. And although the institutions are public, they offer the full range of academic programs, from two-year associate degrees to doctoral degrees, and are involved in continuing education programs as well, providing a diverse environment for bibliographic instruction. Location enrollments range from 300 to 32,000. These institutions were chosen, also, because their libraries were known to offer bibliographic instruction to their students.

Responses represent all institutions involved. Descriptive statistics and crosstabulations on selected questionnaire responses were employed in analyzing the data.

Several studies have considered the education of academic librarians, but few have attempted to describe the background of instruction librarians. One exception is a study conducted by Roberts in 1978 concerning credit course instruction at ten State University of New York campuses; the librarians described are an elite group involved in credit instruction only, however. Bits and pieces of descriptions of instruction librarians are contained in several surveys and directories compiled by various state and regional organizations, but none reviewed is particularly comprehensive.

**FINDINGS**

These librarians are not young. As table 1 shows, less than 3 percent are under thirty; more than half are forty or older; more than one-quarter are fifty or older. They have considerable experience. Seventy-five percent have been involved in bibliographic instruction for six or more years; nearly a third for twelve or more years. As expected, given the ages of these librarians, they earned their professional degrees some years ago. Seventy-six percent received the MLS degree ten or more years ago; nearly half earned their degrees ten to fourteen years ago. Ninety-one percent of these librarians are assigned to instruction activities less than half-time. Thirty-nine percent of the respondents hold or are working toward a second master's degree; 15 percent hold or have in progress a doctoral degree.

**TABLE 1**

<table>
<thead>
<tr>
<th>SELECTED DEMOGRAPHIC CHARACTERISTICS</th>
<th>((N = 120))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>Frequency</td>
</tr>
<tr>
<td><strong>Sex:</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>46</td>
</tr>
<tr>
<td>Female</td>
<td>72</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
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<tr>
<td><strong>Age:</strong></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>4</td>
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<tr>
<td>30-39</td>
<td>45</td>
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<tr>
<td>40-49</td>
<td>38</td>
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<tr>
<td>50 or older</td>
<td>31</td>
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<tr>
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<td>2</td>
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<tr>
<td><strong>Years since MLS degree earned:</strong></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
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<tr>
<td>5-9</td>
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<td>10-14</td>
<td>56</td>
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<td>15-19</td>
<td>18</td>
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<tr>
<td>20 or more</td>
<td>17</td>
</tr>
<tr>
<td><strong>Years assigned to bibliographic instruction:</strong></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>8</td>
</tr>
<tr>
<td>3-5</td>
<td>21</td>
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<td>6-8</td>
<td>27</td>
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<td>9-11</td>
<td>27</td>
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<tr>
<td>12 or more</td>
<td>37</td>
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<tr>
<td><strong>Bibliographic instruction assignment:</strong></td>
<td></td>
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<tr>
<td>Full-time</td>
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</tr>
<tr>
<td>Half-time</td>
<td>8</td>
</tr>
<tr>
<td>Less than half-time</td>
<td>109</td>
</tr>
<tr>
<td><strong>Graduate degrees held:</strong></td>
<td></td>
</tr>
<tr>
<td>MLS†</td>
<td>120</td>
</tr>
<tr>
<td>Additional master's</td>
<td>47</td>
</tr>
<tr>
<td>Doctorate</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note: Rounding errors account for column totals = 100 percent.

*Ninety-eight percent of the librarians are full-time employees.

*Individuals not holding this first professional degree were eliminated from the study.
Formal education and training in appropriate areas are present in the backgrounds of a majority of these librarians. As table 2 shows, 61 percent indicated they had taken a credit course in learning theory, teaching methodology, or instructional development; 52 percent did so while earning their undergraduate degrees. Only 17 percent indicated they received such education and training as part of the course work in their MLS degree programs. Only 13 percent indicated course work related to instruction was part of a second master's degree, 4 percent as part of a doctoral degree.

Indications of education and training of a general nature related to bibliographic instruction are set out in the data in table 3. Only 12 percent of the respondents participated in appropriate in-service training programs, which is more a negative comment on the libraries than the librarians involved. It is interesting to see that fully 55 percent of the respondents concentrated in reference work while pursuing their professional degrees. The amount of self-education as measured by journal reading is considerable. Ninety-eight percent of these librarians regularly read one or more library journals. Fifty-nine percent regularly read one or more education journals. (Regular reading was defined in the questionnaire as reading every issue of a journal.) Many continue to build their backgrounds by participating in instruction-related continuing education activities. The data show that 54 percent participated in one or more such activities in the past two years.

The amount of related experience and professional activity is also considerable, as shown in the data displayed in table 4.

**TABLE 2**

<table>
<thead>
<tr>
<th>Course Work</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate degree</td>
<td>62</td>
<td>52</td>
</tr>
<tr>
<td>Master's degree in library science</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Additional master's degree</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Degree and nondegree course work*</td>
<td>73</td>
<td>61</td>
</tr>
</tbody>
</table>

*N = 119.

**TABLE 3**

<table>
<thead>
<tr>
<th>Type of Education and Training</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-service programs*</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>MLS degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concentration:†</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisitions</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Administration</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Cataloging</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Reference</td>
<td>65</td>
<td>55</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>No concentration</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Self-education as indicated by number of library journals read:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>3 or more</td>
<td>84</td>
<td>70</td>
</tr>
<tr>
<td>Self-education as indicated by number of education journals read:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>50</td>
<td>42</td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>3 or more</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Number of continuing education activities in past two years:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>56</td>
<td>47</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>4 or more</td>
<td>15</td>
<td>13</td>
</tr>
</tbody>
</table>

Note: Rounding errors account for column totals > 100 percent.

*N = 119.

† Concentration in reference is the only response indicating appropriate background was received.

Twenty-eight percent of the respondents have taught credit courses in bibliographic instruction; 23 percent had college level teaching experience before they became involved in bibliographic instruction; and 47 percent had prior elementary- or secondary-level teaching experience. Over half of the respondents have the major part of their noninstruction time assigned to the complementary area of reference work. Table 4 also shows that only 14 percent of the respondents have published, and that less than one-quarter have engaged in studies dealing with bibliographic instruction. These librarians are involved in professional organizations to a large degree, however. Seventy-nine percent indicated membership in two or more professional library organizations; 32 percent in two or more professional education organizations. Forty-one percent held office in a library organization in the past two
TABLE 4
RELATED EXPERIENCE AND PROFESSIONAL ACTIVITY
(N = 120)

<table>
<thead>
<tr>
<th>Experience or Activity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taught credit courses in bibliographic instruction</td>
<td>33</td>
<td>23</td>
</tr>
<tr>
<td>Complementary noninstruction assignment in reference work*</td>
<td>62</td>
<td>52</td>
</tr>
<tr>
<td>College level teaching experience</td>
<td>56</td>
<td>47</td>
</tr>
<tr>
<td>Elementary- or secondary-level teaching experience†</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Articles published or accepted</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Studies conducted or in progress*</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Professional organization activity in past two years:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library organization membership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>2-3</td>
<td>68</td>
<td>57</td>
</tr>
<tr>
<td>4-5</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>6 or more</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Library organization office held</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>47</td>
<td>41</td>
</tr>
<tr>
<td>No</td>
<td>69</td>
<td>58</td>
</tr>
<tr>
<td>Not a member</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Education organization membership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>82</td>
<td>68</td>
</tr>
<tr>
<td>2-3</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>4-5</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>6 or more</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Education organization office held</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>84</td>
<td>70</td>
</tr>
<tr>
<td>Not a member</td>
<td>23</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: Rounding errors account for column totals > 100 percent.
*N = 119.
†N = 118.

years; only 11 percent did so in an education organization.

The level of current continuing education activity is encouraging. As shown in table 5, 54 percent of the respondents indicated they participated in one or more such activities in the past two years. Nearly one third (30 percent) indicated they engaged in three or more related activities in the same time period. Although only seventy-two respondents (60 percent of the total group) reported they had taken credit courses in learning theory, teaching methodology, or instructional development, 72 percent of them indicated that this occurred before they were assigned to bibliographic instruction.

As shown in table 6, 54 percent of the librarians in this study reported they gained relevant education and training through self-study (commonly referred to as independent

TABLE 5
TIMING OF APPROPRIATE EDUCATION AND TRAINING
(N = 120)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing education activities in the past two years:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>56</td>
<td>47</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>4 or more</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Course work:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before instruction assignment</td>
<td>52</td>
<td>72</td>
</tr>
<tr>
<td>After instruction assignment</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Both</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>No response</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rounding errors account for column totals < 100 percent.

TABLE 6
PERCEPTIONS OF PRIMARY MEANS BY WHICH APPROPRIATE EDUCATION AND TRAINING WERE GAINED
(N = 120)

<table>
<thead>
<tr>
<th>Means</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-study</td>
<td>63</td>
<td>56</td>
</tr>
<tr>
<td>In-service programs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Conferences</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Workshops</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Credit courses</td>
<td>34</td>
<td>30</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rounding errors account for column totals > 100 percent.
study). That only 3 percent indicated that conferences and workshops were the primary means of acquiring the background in question was unexpected. The data further show that 30 percent of the respondents saw credit courses as their primary means of preparation.

Several factors were identified which could influence whether or not librarians gained the necessary education and training. As the data in table 7 show, libraries continue as they have in the past; they make few demands on librarians to qualify for bibliographic instruction. Only 7 percent of the respondents indicated they had to meet any special requirements beyond the MLS degree to participate in an instruction program. Furthermore, only 12 percent indicated their libraries provided in-service training for them. Eighty percent of the respondents see their library administrations as supportive of bibliographic instruction programs yet only 19 percent indicated they received financial support for appropriate education and training. Of the twenty-three librarians who received financial support, 52 percent indicated the funding they received supported more than half of their expenses. It must be kept in mind that participation in bibliographic instruction programs continues to be part-time, however. The present study reinforces that belief; 91 percent of the responding librarians reported being assigned to instruction less than half time. It is important to note that 62 percent of the librarians in this study perceived themselves as adequately prepared initially to engage in bibliographic instruction.

Although 62 percent of these librarians indicated they felt they were adequately prepared to take on bibliographic instruction activities when they were first assigned to instruction (see table 7), the data in table 8 show that only 7 percent indicated they would not benefit from additional education and training. Forty-three percent chose instructional development as an area of need; nearly one third (32 percent) indicated additional work in teaching methodology would be beneficial, while only 9 percent felt that they needed additional work in learning theory.

Although professional organizations view their conferences as serving a major continuing education function, it is interesting to see that only 1 percent of the respondents saw conferences as the best means of providing education and training for bibliographic instruction. Twenty-eight percent viewed previous teaching experience as the best means

**TABLE 7**

**Factors Affecting the Acquisition of Appropriate Education, Training, and Experience**

(N = 120)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of entry requirements</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Presence of in-service programs*</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Perception that administration is supportive*</td>
<td>95</td>
<td>80</td>
</tr>
<tr>
<td>Presence of administrative financial support for continuing education activities*</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>Amount of administrative financial support for continuing education activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than half</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Half</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>More than half</td>
<td>12</td>
<td>52</td>
</tr>
<tr>
<td>No response</td>
<td>97</td>
<td>-</td>
</tr>
<tr>
<td>Amount of personal funding for continuing education activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than half</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>Half</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>More than half</td>
<td>36</td>
<td>56</td>
</tr>
<tr>
<td>No response</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>Assigned less than half-time to bibliographic instruction</td>
<td>109</td>
<td>91</td>
</tr>
<tr>
<td>Major noninstruction assignment in reference*</td>
<td>62</td>
<td>52</td>
</tr>
<tr>
<td>Perception that adequately prepared</td>
<td>74</td>
<td>62</td>
</tr>
</tbody>
</table>

*Note: Rounding errors account for column totals < 100 percent.

*N = 119.*
TABLE 8
PERCEPTIONS RELATED TO ADDITIONAL EDUCATION AND TRAINING
(N = 120)

<table>
<thead>
<tr>
<th>Perception</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of need:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning theory</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Teaching methodology</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>Instructional development</td>
<td>51</td>
<td>43</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>None needed</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Best means of preparation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-study</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>In-service programs</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>Conferences</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Workshops</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Credit courses</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Previous teaching experience</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Best means of delivery of future education and training:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-study</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>In-service programs</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Conferences</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Workshops</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Credit courses</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rounding errors account for column totals < 100 percent.

As shown in table 9, there is evidence of a strong relationship between librarians’ assessments that they were adequately prepared when first assigned to bibliographic instruction, and their assessment that their primary means of gaining appropriate knowledge and information was by having taken credit courses in learning theory, teaching methodology, or instructional development. Only 2 percent of instruction librarians who participated in appropriate course work saw themselves as inadequately prepared while the 32 percent who chose self-study methods viewed themselves as inadequately prepared. Self-study results in only an even chance of being prepared.

In table 10, evidence of a positive relationship between (1) an assessment of having undertaken adequate preparation and (2) prior elementary or secondary teaching experience is shown. Of the 49 percent of instruction librarians who considered themselves prepared to engage in bibliographic instruction activities, 41 percent had had prior teaching experience. Those who indicated they saw themselves as inadequately prepared are nearly evenly divided between those with prior teaching experience and those with none. The results show that those who have had teaching experience tend to see themselves as prepared, however.

The data in table 11 suggest that those who indicated they had taken credit course work dealing with instruction are more likely to select instructional development as an area of need. Those who have not had such course work are more likely to select teaching methodology.

TABLE 9
RELATIONSHIP BETWEEN ASSESSMENT OF ADEQUATE PREPARATION AND PRIMARY MEANS OF PREPARATION

<table>
<thead>
<tr>
<th>Means</th>
<th>Adequate</th>
<th>Inadequate</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Self-study</td>
<td>32</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>Credit courses</td>
<td>34</td>
<td>2</td>
<td>36</td>
</tr>
</tbody>
</table>

Totals

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>58</td>
<td>34</td>
</tr>
<tr>
<td>33</td>
<td>100</td>
<td>88</td>
</tr>
</tbody>
</table>

Note: Missing values = 8.
Note: Cross-tabulations producing marginal frequencies of ten or less were deleted.
Note: $x^2 = 17.39$, df = 1, $p > .01$. 

modes of delivery for continuing education conducted by Stone.5
The data in table 12 indicate that the presence of previous elementary- or secondary-school teaching experience results in the choice of instructional development as an area for further education and training. Absence of prior teaching experience tends to result in an expression of need in teaching methodology.

**DISCUSSION AND CONCLUSIONS**

On the whole the librarians in this group have acquired education and training appropriate to their assignments. The education and training were not gained as part of their professional degree programs but were

### TABLE 10

**RELATIONSHIP BETWEEN ASSESSMENT OF ADEQUATE PREPARATION AND ELEMENTARY OR SECONDARY SCHOOL TEACHING EXPERIENCE**

<table>
<thead>
<tr>
<th>Teaching Experience</th>
<th>Adequate Preparation</th>
<th>Inadequate Preparation</th>
<th>Percent</th>
<th>Totals</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>41</td>
<td>27</td>
<td>68</td>
<td>73</td>
<td>100</td>
</tr>
<tr>
<td>Absent</td>
<td>8</td>
<td>23</td>
<td>31</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>49</td>
<td>53</td>
<td>54</td>
<td>99</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note:* Missing values = 2.

*Note:* Rounding errors account for total percent < 100 percent.

*Note:* Cross-tabulations producing marginal frequencies of ten or less were deleted.

*Note:* $x^2 = 10.6$  $df = 1$  $p > .01$.

### TABLE 11

**RELATIONSHIP BETWEEN NEED FOR ADDITIONAL EDUCATION AND TRAINING AND CREDIT COURSE WORK IN LEARNING THEORY, TEACHING METHODOLOGY, OR INSTRUCTIONAL DEVELOPMENT**

<table>
<thead>
<tr>
<th>Course Work</th>
<th>Teaching Methodology Need</th>
<th>Instructional Development Need</th>
<th>Percent</th>
<th>Totals</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>19</td>
<td>37</td>
<td>56</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>24</td>
<td>20</td>
<td>44</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>43</td>
<td>51</td>
<td>100</td>
<td>89</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Missing values = 2.

*Note:* Cross-tabulations producing marginal frequencies of ten or less were deleted.

*Note:* $x^2 = 3.53$  $df = 1$  $p < .01$.

### TABLE 12

**RELATIONSHIP BETWEEN NEED FOR ADDITIONAL EDUCATION AND TRAINING AND PRIOR TEACHING EXPERIENCE IN ELEMENTARY OR SECONDARY SCHOOLS**

<table>
<thead>
<tr>
<th>Experience</th>
<th>Teaching Methodology Need</th>
<th>Instructional Development Need</th>
<th>Percent</th>
<th>Totals</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>12</td>
<td>33</td>
<td>45</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>32</td>
<td>23</td>
<td>55</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>44</td>
<td>56</td>
<td>49</td>
<td>100</td>
<td>87</td>
</tr>
</tbody>
</table>

*Note:* Missing values = 4.

*Note:* Cross-tabulations producing marginal frequencies of ten or less were deleted.

*Note:* $x^2 = 9.35$  $df = 1$  $p > .01$. 
gained in undergraduate degree programs, in credit courses, or by self-study. A test of association between means of preparation and adequacy of preparation revealed that taking credit courses is perceived to be a more effective means of preparation than self-study, however.

A majority of the librarians specialized in reference work in their professional training programs, which compares favorably with findings in the literature. They tend to belong to professional organizations; only 2 percent reported "not a member," which compares favorably to other findings.

No record of instruction librarians' publishing and research activities is available. Because the librarians in this study work in an academic environment, a higher rate of activity was expected than the 15 percent response to a record of articles published or accepted for publication and the 25 percent indication of research activity.

A total of 98 percent indicated they read one or more library journals regularly; a total of 59 percent read education journals regularly. The evidence in the literature is not clear, but the response is somewhat higher than expected, especially for education journals. Perhaps this latter finding is explained by the fact that all institutions in the study are involved in teacher training. They did not attempt to update their instruction skills as much as expected, but 54 percent did participate in one or more continuing education activities in the past two years. In light of the fact that their instruction assignments are less than half-time, this record of activity should be viewed favorably.

The perception that teaching is the best means of preparation to engage in bibliographic instruction was supported. Forty-seven percent had prior elementary- or secondary-school teaching experience; 23 percent had prior college-level teaching experience. Seventy-five percent have been involved in bibliographic instruction six or more years. Only 28 percent reported having taught bibliographic instruction credit courses, however.

Although these librarians are assigned to instruction less than half-time, 52 percent of them have major assignments in reference work, an area of activity that is closely associated with instruction by the profession. And although 76 percent of these librarians received their professional training ten or more years ago, before the recent decade of activity in bibliographic instruction, their record of training in their undergraduate degrees and elsewhere before their involvement in instruction appears to offset the fact that instruction had not been covered in their professional degree work.

Administrative support for the improvement of the skills of the librarians involved compares with the conclusions drawn in the literature: it is minimal. Administrators are willing to assign them to instruction but are not willing to find the funds to provide the opportunity for improving skills.

By and large these librarians feel they are prepared to carry out their instruction responsibilities, but they are nearly unanimous (only 7 percent not agreeing) in their perception that they could benefit from additional education and training in instruction-related areas. In particular they are interested in becoming more competent in instructional development (43 percent) and teaching methodology (32 percent).

Workshops, credit courses, and, to a lesser degree, in-service programs are seen by these librarians as the best means of acquiring appropriate additional education and training for themselves in the future.

**Implications**

Lack of specific administrative support for upgrading instruction librarians' skills is again demonstrated in this study. Bibliographic instruction programs and their improvement remain, apparently, labors of love for the librarians involved. It appears that the profession needs to reexamine its stance on instruction, given the evidence that library administrators do not support these programs in concrete terms. Espousing bibliographic instruction at conferences and in the literature while the workplace lacks specific continuing support frustrates the librarians and shortchanges the students.

The profession should take note that in this study the value of conferences is challenged. They are not perceived as a useful means of providing continuing education in this area. This strikes at the heart of the profession's justification for holding conferences.

Again, the view that previous teaching ex-
experience is the most effective means to prepare to teach is supported. Although the needs of bibliographic instruction programs are not being addressed by the library schools,\(^9\) if programs are developed to meet this need, teaching practicums should be an integral part of the requirements designed to assure competency for librarians who will be called upon to function as skilled professionals responsible for instruction.

REFERENCES

4. Roberts, "A Study."
College & Research Libraries: Its First Forty Years

College & Research Libraries began publication in December 1939. This study examines the changes that occurred in its publication and citation patterns during the forty years from 1939 through 1979. Data are generally described in terms of eight five-year periods, and the findings of this study are compared with the results of similar studies of various subject literatures. An overall trend toward greater adherence to the norms of scholarly publication in other disciplines was observed.

Changes, of course, occurred in its publication practices. For example, during the first six years of publication, C&RL dated its volumes with combined years, e.g., volume one was dated 1939–40. Then issued as a quarterly, each volume contained the December, March, June, and September issues. In 1945,
however, no December issue was published, and from volume seven, 1946, to date, the volumes have adhered to a calendar year. C&RL continued as a quarterly publication until 1956, at which time it changed to bi-monthly. In March 1966 it gave birth to ACRL News, later renamed College & Research Libraries News. The News was to publish "... News from the Field, Personnel profiles and notes, classified advertising, and other matters of a timely nature...," thereby providing rapid news dissemination to the academic library profession and freeing C&RL to publish scholarly papers.

Because C&RL has gained a national reputation as a leading library periodical, it is a likely target for retrospective analysis. One wonders what it has accomplished in its long history. What topics did it cover? Whom did it publish? How did it change? The purpose of this study is to answer these and other questions by: (1) describing the literature both published and cited in C&RL, 1939 through 1979; (2) identifying interesting and significant changes or trends in publication patterns; (3) comparing the findings of this study with the results of similar studies of various subject disciplines, especially landmark studies of scientific literature; and (4) reaching conclusions concerning the scholarliness of C&RL from the ascertained trends and comparisons.

DATA AND METHODOLOGY

Data of two types were collected from volumes one through forty of C&RL: those concerned with the source documents and those concerned with the cited documents. The study was limited in a number of ways, including:

1. No issues of C&RL News were analyzed;
2. Editorials, news items, programs for meetings or conferences, and the like were excluded;
3. Review articles were excluded;
4. Only bona fide articles, recognizable because of known authorship, were included in the study whether or not they listed references;
5. References added by the editors were excluded;
6. All references listed as "Ibid." or "Op. cit." were included;
7. Where multiple references were listed in a single footnote, all were included; and
8. References given in the text of the articles, but not listed as footnotes, were included.

Altogether, the completed database consisted of 1,775 source documents (i.e., the articles published in C&RL, volumes one through forty) and 11,658 cited documents (i.e., items cited in the articles published in C&RL). Data items for both sources and cited documents included much that was identical: principal author, sex of principal author, coauthor(s), title, and date. For source documents, additional information that was gathered included author's institutional affiliation, number of pages, number of references, subject classification, and number of author and journal self-citations. For cited documents, the additional information included a single letter from the LC classification scheme to indicate the subject, country of publication, language, publisher for monographs or journal title for articles, and form of the document.

Because the database is large and extends over a long period of time, this study is divided into two parts: analysis of the source documents and analysis of the cited documents. The data are tested in many ways utilizing frequency distributions and cross-tabulations, as well as means, percentages, etc., where meaningful. When possible, comparisons of the results are made with literature from other subject areas.

PART ONE: SOURCE DOCUMENTS

There were 1,775 articles published in C&RL from December 1939 through November 1979. Characteristics of these articles are identified in two areas: of the articles themselves and of the authors who published them. To ascertain changes and trends in the literature and to smooth out anomalies from year to year, data are usually presented in eight five-year spans.

Number and Length of Articles

Three questions concerning trends in the publishing habits of C&RL will probably be of some interest to its readers. First, How many articles did C&RL publish during each five-year period of this study? Second, What
was the average number of articles per issue? And third, What was the average number of pages per article? Table 1 summarizes the findings for each of these questions.

The number of articles published in any journal is, of course, controlled by the editors and board of the journal itself. The years 1945–49 were the most productive in terms of articles published (297). This could be accounted for in some measure by the fact that C&RL published its third issue in two parts in 1944–45 (a combined year), 1947, and 1949. Each extra issue was dedicated to a single theme: communication and cooperation, essays in honor of Charles Harvey Brown, and rare books in the university library. Even if the articles appearing in these special issues (37) were subtracted from the overall total for 1945–49, the results would remain essentially the same, with that time span producing both the greatest number of articles and, the highest average number of articles per issue. (C&RL was, at this time, a quarterly publication.) Twenty years later, in 1965–69, the next greatest number of articles appeared in C&RL, 263 (the journal was then bimonthly), which surprisingly was followed in 1970–74 by a record low of 163. Whether the increase to 194 in 1975–79 indicates a restabilization of production remains to be seen.

An obvious trend toward fewer but longer articles per issue can be identified in the table. The trend is most apparent in the average number of pages per article which increased steadily from 4.79 in 1945–49 to 8.08 in 1975–79. In 1963, Garfield and Sher published the results of a study of scientific literature in which they found that 17.3 articles per issue was the norm, while the average number of pages per article was 5.4. Although C&RL did not publish as many articles per issue as scientific journals, its average number of pages per article, in the 1960–64 time span, was identical to that given for scientific journals, 5.4.

**Unreferenced Articles and Average Number of References Per Article**

Of greater importance as measures of the scholarliness of a journal are two characteristics for which standards have been established for scientific literature: (1) the incidence of unreferenced articles and (2) the average number of references per article. C&RL experienced increased adherence to these standards in both areas for 1939 through 1979. Table 2 presents supporting data that contrast the steady decrease in unreferenced articles with the steady increase in the average number of references per article.

The percentage of articles in C&RL having no references whatever was excessively high (more than 40 percent) during the early years of the study and remained well above the average for scientific literature (10 percent) throughout the first thirty years. It is encouraging to note, however, that the percentage of unreferenced articles steadily decreased after 1945–49, and in the last decade of the study either approached or fell below 10 percent, the standard for scientific literature. As the percentage of unreferenced articles decreased, the average number of references per article increased correspondingly. In 1970 Price found the norm for the average number of references per source article (defined as AR) for scientific literature to be in the range of 10 to 22. Ten years later, in

---

**TABLE 1**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>No. of Articles Published</th>
<th>Avg. No. of Articles/Issue</th>
<th>Avg. No. of Pages/Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939–44</td>
<td>207</td>
<td>10.35</td>
<td>5.76</td>
</tr>
<tr>
<td>1945–49</td>
<td>297*</td>
<td>14.85</td>
<td>4.79</td>
</tr>
<tr>
<td>1950–54</td>
<td>230†</td>
<td>11.50</td>
<td>4.93</td>
</tr>
<tr>
<td>1955–59</td>
<td>206†</td>
<td>7.22</td>
<td>5.19</td>
</tr>
<tr>
<td>1960–64</td>
<td>215</td>
<td>7.17</td>
<td>5.37</td>
</tr>
<tr>
<td>1965–69</td>
<td>263</td>
<td>8.77</td>
<td>6.30</td>
</tr>
<tr>
<td>1970–74</td>
<td>163</td>
<td>5.43</td>
<td>7.66</td>
</tr>
<tr>
<td>1975–79</td>
<td>194</td>
<td>6.47</td>
<td>8.08</td>
</tr>
</tbody>
</table>

*Three issues appeared in two parts.
†One issue appeared in two parts.
*Number of issues/volume increased from four to six in 1956.

---

**TABLE 2**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>% of Unreferenced Articles</th>
<th>Avg. No. of References/Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939–44</td>
<td>45</td>
<td>2.89</td>
</tr>
<tr>
<td>1945–49</td>
<td>47</td>
<td>3.23</td>
</tr>
<tr>
<td>1950–54</td>
<td>41</td>
<td>3.61</td>
</tr>
<tr>
<td>1955–59</td>
<td>39</td>
<td>4.09</td>
</tr>
<tr>
<td>1960–64</td>
<td>33</td>
<td>5.88</td>
</tr>
<tr>
<td>1965–69</td>
<td>25</td>
<td>9.16</td>
</tr>
<tr>
<td>1970–74</td>
<td>13</td>
<td>10.56</td>
</tr>
<tr>
<td>1975–79</td>
<td>9</td>
<td>15.46</td>
</tr>
</tbody>
</table>
1980, AR for all literature indexed in the Science Citation Index was found to be 15.9. However, when AR was calculated for articles only, excluding meetings, notes, editorials, etc., it was found to be 24.2. For the entire forty-year span of this study, AR was computed to be 6.57 (i.e., 11,658 cited documents divided by 1,775 source documents), a figure well below even the low norm of 10 for scientific literature. It was also well below Barnard's finding of 16 for library literature. Barnard's study, however, analyzed the citations in seven library periodicals, not one; covered two years, not forty; and omitted all articles having no references, unlike the current study which included them. The reader should note that AR increased steadily through the years, and in the last fifteen years of the study, either approached or fell into the norm of 10 to 22 for scientific literature.

### Journal Self-Citations

In 1979 Garfield reported that self-citations were contained in about 20 percent of a journal's references. In the same paper, he explained the difference between two kinds of journal self-citation rates:

There are two self-citation rates, the self-citing and self-cited rates. The self-citing rate relates a journal's self-citations to its total references. The self-cited rate relates a journal's self-citations to the number of times it is cited by all journals including itself. For example, journal X made reference to 10000 items, including 2000 items it itself had published. Its self-citing rate is 2/10 or 20%. On the other hand, journal X was cited 15000 times in the references of all journals, including its own. Its self-cited rate is 2/15 or 13.5%.

In this study it was possible to examine two phenomena of journal self-citations in C&RL: (1) the self-citing rate (the data for this study did not provide a means for analyzing the self-cited rate), and (2) the percentage of source documents containing journal self-citations. Table 3 presents the changes that occurred in both over the years.

### Activities Discussed in C&RL

In order to determine the activities discussed in C&RL during its first forty years, each article was scanned by the writer who then used a somewhat modified version of a classification scheme developed by Saracevic and Perk to categorize the source documents according to the subjects they covered. The scheme is outlined in appendix A.

Table 4 illustrates the distribution of source documents according to the activity discussed in each time span and overall for 1939 through 1979. Organization and administration was the major topic most often discussed in C&RL throughout the forty years of this study, and comprised, overall, 33.6 percent of all activities. It was followed by general topics (18.7 percent), resources (14.3 percent), public services (13.7 percent), and technical services (12.6 percent). Combined, the activities of automation and information retrieval (4.1 percent), library instruction (2.1 percent), and photoreproduction (.9 percent) were discussed less than 10 percent of the time.

Few trends in the activities discussed could be identified because the changes in relative frequency from one time period to another were inconsistent. Until 1975–79, there ap-
peared to be a slight trend toward less emphasis upon general topics. However, with the publication in 1976 of a large number of historical studies, this trend seemed to terminate. A very slight increase in emphasis upon public services and a slight decrease of interest in automation and library instruction were also noted in the latter years of the study.

Six of the eight major activities were divided into subtopics. Table 5 presents the data on subtopics for 1939–79.

Several areas represented by the subtopics are noteworthy. First, general administration received the most emphasis because it included topics of continuing interest to librarians, i.e., finance, personnel, salaries, etc. Second, special types of materials were the resources most often discussed. These included government publications, rare books, indexes, and abstracts. Third, not surprisingly, library cooperation was the area of public services that received the most attention. And last, as one might expect, catalog-

### TABLE 5

<table>
<thead>
<tr>
<th>Subclassification</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization and administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General administration</td>
<td>447</td>
<td>31.8</td>
</tr>
<tr>
<td>Professional education</td>
<td>56</td>
<td>4.0</td>
</tr>
<tr>
<td>Architecture and equipment</td>
<td>92</td>
<td>6.6</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book</td>
<td>30</td>
<td>2.1</td>
</tr>
<tr>
<td>Serial publications</td>
<td>25</td>
<td>1.8</td>
</tr>
<tr>
<td>Special types of materials</td>
<td>99</td>
<td>7.1</td>
</tr>
<tr>
<td>Subject literatures</td>
<td>59</td>
<td>4.2</td>
</tr>
<tr>
<td>Audiovisual materials</td>
<td>41</td>
<td>2.9</td>
</tr>
<tr>
<td>Public services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circulation</td>
<td>50</td>
<td>3.6</td>
</tr>
<tr>
<td>Reference</td>
<td>46</td>
<td>3.3</td>
</tr>
<tr>
<td>Library cooperation</td>
<td>96</td>
<td>6.8</td>
</tr>
<tr>
<td>Use and user studies</td>
<td>45</td>
<td>3.2</td>
</tr>
<tr>
<td>Reader services</td>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>Technical services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisitions and selection</td>
<td>95</td>
<td>6.8</td>
</tr>
<tr>
<td>Cataloging and classification</td>
<td>103</td>
<td>7.3</td>
</tr>
<tr>
<td>General activities</td>
<td>25</td>
<td>1.8</td>
</tr>
<tr>
<td>Automation and information retrieval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation of library processes</td>
<td>46</td>
<td>3.3</td>
</tr>
<tr>
<td>Information retrieval and documentation</td>
<td>26</td>
<td>1.9</td>
</tr>
<tr>
<td>Photoproduction and microfilming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copyright law</td>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>Microfilming techniques and equipment</td>
<td>9</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*The activities classified as "General" and "Library Instruction" had no subactivities.*
ing and classification received the most emphasis among the subtopics of technical services.

**Source Author Productivity**

A total of 1,240 principal authors contributed 1,775 articles to *C&RL*, 1939 through 1979. This averages to 1.43 articles per author over the forty-year span of this study. Figure 1 illustrates the wide range in author productivity. In 1977 Watson, reporting on the publication output of librarians at ten large university libraries, found the median productivity to be two publications in five years, one of which was a book review.\(^{12}\)

In his landmark study of 1926, Lotka described the productivity of scientific authors.\(^{13}\) He found: (1) that the proportion of all persons making a single contribution to chemistry and physics journals was about 60 percent, and (2) that the number of persons making \(n\) contributions was about \(1/n^2\) of those making only one contribution. In the current study, 80 percent of the principal authors made a single contribution to *C&RL*. It was obvious then that librarians were not as productive as scientific authors, a conclusion that was in agreement with Schorr's findings for library literature.\(^{14}\) A discussion of Lotka's law and a detailed statistical analysis of the data from *C&RL* appear in appendix B.

![Figure 1](image-url)

*Fig. 1*

Number of Articles Contributed by Source Authors
Leading Authors

A very weak core of productive authors was identified. Only six authors contributed ten or more articles to C&RL during the forty years of this study. They were:

<table>
<thead>
<tr>
<th>Author</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downs, Robert B.</td>
<td>24</td>
</tr>
<tr>
<td>Metcalf, Keyes D.</td>
<td>17</td>
</tr>
<tr>
<td>Muller, Robert Hans</td>
<td>14</td>
</tr>
<tr>
<td>Ellsworth, Ralph E.</td>
<td>12</td>
</tr>
<tr>
<td>Shaw, Ralph R.</td>
<td>11</td>
</tr>
<tr>
<td>Tauber, Maurice F.</td>
<td>10</td>
</tr>
</tbody>
</table>

These six authors, representing 0.48 percent of all source authors, contributed about 5 percent of the articles appearing in C&RL. Only Robert B. Downs contributed articles during each of the eight five-year spans, while Keyes D. Metcalf published in seven of the time periods (in the first six and in the eighth) and Maurice F. Tauber published articles in each of the first six five-year periods. These authors obviously had unusually long and productive careers.

Sex of Authors

Sex was recorded for the principal author only, and data were tabulated for all instances when sex was known, rather than for each unique author. Sex was known in 1,768 of 1,775 cases. For seven cases (0.39 percent) sex was unknown because initials were used for given names and no photograph or biographical information accompanied the source article. The incidence of unknown authorship was considered to be negligible, and thus it was felt that omission of the data in the discussion would not distort or bias the results in any way. From 1939 through 1979, principal authors were overwhelmingly males (78.85 percent), with females constituting only 21.15 percent of all contributors to C&RL. Surprisingly, this balance remained almost constant throughout the years, as illustrated in table 6.

Institutional Affiliation

The name of the institution with which the principal author was affiliated was recorded in every instance where the information was available. Over the forty-year span of this study, only 66 of 1,775 cases were unknown.

The top ten institutions are listed in table 7. Although it seemed obvious that the majority of contributors to C&RL would be associated with academic libraries, it was necessary to categorize institutions according to type to see if this assumption proved to be true. Nine categories were used: academic libraries, special libraries, library associations, government libraries, public libraries, library schools, other (nonlibrary institutions), foreign institutions, and unknown. The frequency of distribution for institutional affiliation (by type) of source authors for 1939 through 1979 is given in table 8 in descending order. As anticipated, almost 60 percent of the contributors did come from academic libraries. Kim and Kim found that between 57 and 61 percent of the contributors to C&RL from 1957 to 1976 were academic librarians. As seen in table 8, the remainder of the distribution seemed reasonable also, except for the category of "other." However, it was understandable when one realizes that the majority of contributors who fell into this category were invited conference speakers whose texts were later published in C&RL. Additional con-
TABLE 8

TYPES OF INSTITUTIONS OF SOURCE AUTHORS, 1939-79

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic libraries</td>
<td>1,042</td>
<td>58.70</td>
</tr>
<tr>
<td>Other (nonlibraries)</td>
<td>200</td>
<td>11.27</td>
</tr>
<tr>
<td>Library schools</td>
<td>152</td>
<td>8.56</td>
</tr>
<tr>
<td>Government libraries</td>
<td>111</td>
<td>6.25</td>
</tr>
<tr>
<td>Unknown</td>
<td>66</td>
<td>3.72</td>
</tr>
<tr>
<td>Foreign</td>
<td>63</td>
<td>3.55</td>
</tr>
<tr>
<td>Special libraries</td>
<td>60</td>
<td>3.38</td>
</tr>
<tr>
<td>Public libraries</td>
<td>56</td>
<td>3.16</td>
</tr>
<tr>
<td>Library associations</td>
<td>25</td>
<td>1.41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,775</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Contributors within this category were often either retired or unemployed librarians. Library school faculty provided a good many of the articles published in C&RL, as did government library employees. Contributors from foreign countries, as well as from special and public libraries, were few in number, as might be expected. The smallest percentage of contributors were those affiliated with library associations.

**Collaborative Authorship**

Collaborative authorship was recorded for each of the 1,775 source documents published from 1939 through 1979. From the figures presented in table 9, one can see that the vast majority of the articles had no coauthors. However, a trend toward increased collaborative authorship was easily identified by tracing the decrease in the percentage of articles having no coauthors through each of the eight five-year periods as seen in table 10.

For twenty-five years there was no break in the extent of collaborative authorship. In 1965-69, however, the rate of articles having no coauthors dropped over 8 percent, and was followed by two additional consecutive decreases of over 6 percent. The trend toward increased collaborative authorship seemed to parallel a similar increase in the sciences. In 1963, for example Garfield and Sher reported an average of 2.1 authors per source document,16 a figure that had increased to 2.56 by 1980.17 For C&RL, the average number of source authors per article had increased from 1.04 in 1939-44 to 1.36 in 1975-79, still far below the average for scientific literature.

**Author Self-Citations**

The practice of author self-citation has received little attention in the literature. Garfield and Sher reported, “In this index [Science Citation Index], 8% of all citations are first-author self-citations.”18 Table 11 presents the data for two facets of author self-citations in C&RL.

The findings for author self-citations paralleled those discussed earlier for journal self-citations. The author self-citing rate fluctuated a good deal and never reached the 8 percent Garfield mentioned for scientific literature, indicating that the total number of author self-citations (414 out of 11,658 total citations for 1939-79) were minimal. It was

**TABLE 9**

NUMBER OF COAUTHORS CONTRIBUTING TO ARTICLES IN C&RL, 1939-79

<table>
<thead>
<tr>
<th>No. of Coauthors</th>
<th>No. of Articles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1,586</td>
<td>89.35</td>
</tr>
<tr>
<td>1</td>
<td>165</td>
<td>9.29</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
<td>.96</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>.23</td>
</tr>
<tr>
<td>4 or more</td>
<td>3</td>
<td>.17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,775</td>
<td>100.00</td>
</tr>
</tbody>
</table>

**TABLE 10**

EXTENT OF COLLABORATIVE AUTHORSHIP

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Articles Having No Coauthors (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-44</td>
<td>95.65</td>
</tr>
<tr>
<td>1945-49</td>
<td>95.62</td>
</tr>
<tr>
<td>1950-54</td>
<td>93.48</td>
</tr>
<tr>
<td>1955-59</td>
<td>92.72</td>
</tr>
<tr>
<td>1960-64</td>
<td>93.95</td>
</tr>
<tr>
<td>1965-69</td>
<td>85.93</td>
</tr>
<tr>
<td>1970-74</td>
<td>79.14</td>
</tr>
<tr>
<td>1975-79</td>
<td>72.68</td>
</tr>
</tbody>
</table>

**TABLE 11**

AUTHOR SELF-CITATIONS, 1939-79

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Self-Citing Rate</th>
<th>% of Source Documents Containing Author Self-Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-44</td>
<td>5.09</td>
<td>9.7</td>
</tr>
<tr>
<td>1945-49</td>
<td>4.16</td>
<td>7.1</td>
</tr>
<tr>
<td>1950-54</td>
<td>5.45</td>
<td>10.0</td>
</tr>
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<td>1955-59</td>
<td>2.65</td>
<td>8.7</td>
</tr>
<tr>
<td>1960-64</td>
<td>2.30</td>
<td>10.7</td>
</tr>
<tr>
<td>1965-69</td>
<td>2.55</td>
<td>12.9</td>
</tr>
<tr>
<td>1970-74</td>
<td>4.93</td>
<td>22.7</td>
</tr>
<tr>
<td>1975-79</td>
<td>3.30</td>
<td>29.9</td>
</tr>
</tbody>
</table>
interesting to note that although author self-citing rates were small, there was a marked increase in the percentage of contributors to C&RL who cited themselves, from 9.7 percent in 1939-44 to 29.9 percent in 1975-79.

PART TWO: CITED DOCUMENTS

Variables investigated in this part of the study include: (1) growth rate of cited documents; (2) authorship of cited documents, including the identification of leading authors, sex of authors, and the extent of collaborative authorship; (3) bibliographic form, with emphasis upon the most-cited periodicals and monographs; (4) language/geographic/subject distributions; and (5) time span of cited documents.

Documents totaling 11,658 were cited in C&RL during the forty-year span of this study. Some of these documents had authors but no titles (for example, correspondence); conversely, some were anonymous, having titles but no authors. Other variables such as publisher and date of publication were also sometimes missing from the data; this situation usually occurred when they were omitted from the author's reference and could not be readily ascertained. Therefore, the number of cases analyzed for each of these variables will vary.

Growth Rate of Cited Documents

It has been widely accepted for years that world literature has grown at an exponential rate. While Danton and others have discussed the proliferation of library literature, they have not shown whether it too has increased exponentially. Table 12 provides the frequencies for documents cited in C&RL during 1939 through 1979.

Note in the table that the number of citations per five-year period was averaged in order to reduce the "noise" that would have resulted in wide yearly fluctuations in the citation patterns. By plotting these eight five-year averages on linear graph paper, a curve was obtained that illustrates in part an exponential rise in citations. Observe in figure 2 that four of the eight points on the curve lie on what resembles an exponential curve; four points form peaks above the exponential portion. The initial aberration occurring in the curve during the 1945-49 period resulted primarily from C&RL having published one issue in two parts during three of the five years, thereby increasing the total number of citations by 131 (or 26 when averaged). If these were subtracted from the 1945-49 total, the curve would have approached a true exponential in its early part (see the dashed curve).

An explanation for the second peak in 1965-69 is more difficult to formulate. If the figures for 1965-69 and 1970-74 were reversed, there would be little need for an explanation. A plausible reason for the unprecedented growth in citations in 1965-69 (which really began in 1960-64) is that the 1960s were years of great expansion in libraries. Funds were available from the federal government to support research and experimentation in such ventures as automation, as well as collection development and buildings. As a consequence, the literature undoubtedly expanded to report the results of research in the field. In the early 1970s, however, funding slowed and the number of citations decreased markedly as if to reflect a slowdown in library research activity. In the mid-1970s, the citations seemed to resume their earlier rate of growth. Whether or not the overall rate for 1939 to 1979 was truly exponential, it did indicate that the archive of available literature in library science had expanded enormously during those forty years.

Authorship of Cited Documents

A total of 4,072 individual authors was cited from 1939 to 1979. Of the 11,638 cited documents, 1,158 (9.93 percent) were anonymous, a rate considerably lower than Brace found in his study of the citations in library science dissertations (25 percent). Over 60

<table>
<thead>
<tr>
<th>Time Period</th>
<th>No.</th>
<th>Yearly Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-44</td>
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<td>118</td>
</tr>
<tr>
<td>1945-49</td>
<td>961</td>
<td>192</td>
</tr>
<tr>
<td>1950-54</td>
<td>862</td>
<td>172</td>
</tr>
<tr>
<td>1955-59</td>
<td>829</td>
<td>166</td>
</tr>
<tr>
<td>1960-64</td>
<td>1262</td>
<td>252</td>
</tr>
<tr>
<td>1965-69</td>
<td>2430</td>
<td>486</td>
</tr>
<tr>
<td>1970-74</td>
<td>1736</td>
<td>345</td>
</tr>
<tr>
<td>1975-79</td>
<td>2939</td>
<td>600</td>
</tr>
</tbody>
</table>
percent (2,531) of the cited authors were cited only once, and almost 98 percent (3,985) were cited fewer than fifteen times each during 1939 through 1979. Figure 3 illustrates the frequency of authors cited one to fourteen times. Table 13 provides the actual data for figure 3.

**Leading Authors**

The writer arbitrarily decided to include among the core of leading authors only those who had been cited, on the average, once a year for the entire forty-year span of this study. Thus, to be included, an author had to be cited forty or more times. Only 17 (0.42 percent) of the 4,072 authors cited in *C&RL* qualified as leading authors. Table 14 lists the leaders in rank order. Three of these 17 authors were among the 6 leading contributors to *C&RL*: Robert B. Downs, first with twenty-four contributions; Keyes D. Metcalf, second with seventeen contributions; and Ralph E. Ellsworth, fourth with twelve contributions.

**Sex of Cited Authors**

Sex was recorded for principal author only; data were not gathered for coauthors. Four categories of sex were established: (1) male, (2) female, (3) corporate, and (4) unknown (for personal authors whose sex could not be determined because initials were used for given names in the citations). Sex was tabulated in all instances when it was known
(10,500 cases) rather than for each unique author. Overall, males were cited more than six times as often as females, i.e., 72.75 percent to 11.29 percent. Corporate authors constituted 9.39 percent of the total, while 6.57 percent were personal authors whose sex was unknown. Table 15 analyzes the data on sex by five-year periods. Few strong trends or changes in the sex of cited authors were readily apparent. There was an increase of almost 7 percent in females cited during the years from 1955-59 (6.31 percent) to 1975-79 (13.03 percent). During the same twenty-five-year span, there was a decrease in the citations of corporate authors from 15.03 percent in 1955-59 to 6.50 percent in 1975-79.

The use of initials-only for personal authors hovered around the 4 to 6 percent mark in six of the eight time periods, with a high of over 11 percent reached in 1975-79.

**Extent of Collaborative Authorship**

The majority of authors (88.06 percent) cited in *C&RL* over the forty-year span of this study did not collaborate with others in writing their papers. It was often difficult to determine the exact number of coauthors, because the citing authors frequently used *et al.* to indicate two or more coauthors rather than their listing each by name. However, the writer recorded individual names for up to three coauthors and then used *et al.* to indicate four or more coauthors. Because of
these variations in citing patterns, the data may be somewhat inaccurate. However, it was thought that these inaccuracies would not greatly affect the results. Table 16 provides an overall picture of the changes in collaborative authorship during 1939 to 1979.

There was a definite trend toward greater collaboration among cited authors, increasing from a low of 4.3 percent in 1955-59 to 15.7 percent in 1975-79. This trend paralleled a similar increase noted in table 10 for collaboration among source authors.

**Bibliographic Form of Cited Documents**

At the beginning of the data-gathering phase of this study, eighteen categories of bibliographic form were established for the cited documents. It turned out that only one form, patents, was not used at all. Periodicals (44.65 percent) and monographs (36.41 percent) together provided the bulk of all cited documents. Table 17 presents an overview of the forms of documents cited from 1939 through 1979. Table 18 presents the same data in five-year spans and shows that there were only small fluctuations in the citing patterns. A slight trend toward increased use of periodical literature and decreased use of monographs was evident.

Table 19 provides a comparison of the bibliographic forms cited in various subject fields. The difference in citation patterns between sciences such as chemistry and physics and disciplines such as speech and library science was striking. The sciences cited serial literature more than 85 percent of the time, while the social sciences divided their citations almost equally between serials and monographs.

**Bibliographic Form: Periodicals**

**Leading Titles.** Periodicals comprised the bibliographic form cited most frequently in C&RL. From 1939 through 1979, 642 differ-
TABLE 15

SEX OF CITED AUTHORS (IN PERCENT)

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Male</th>
<th>Female</th>
<th>Corporate</th>
<th>Unknown</th>
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</thead>
<tbody>
<tr>
<td>1939-79*</td>
<td>72.75</td>
<td>11.29</td>
<td>9.39</td>
<td>6.57</td>
</tr>
<tr>
<td>1939-44</td>
<td>77.44</td>
<td>13.78</td>
<td>8.75</td>
<td>5.03</td>
</tr>
<tr>
<td>1945-49</td>
<td>68.73</td>
<td>13.85</td>
<td>8.25</td>
<td>4.33</td>
</tr>
<tr>
<td>1950-54</td>
<td>72.60</td>
<td>10.65</td>
<td>8.75</td>
<td>4.04</td>
</tr>
<tr>
<td>1955-59</td>
<td>76.38</td>
<td>6.31</td>
<td>10.03</td>
<td>2.28</td>
</tr>
<tr>
<td>1960-64</td>
<td>74.54</td>
<td>8.55</td>
<td>12.87</td>
<td>4.04</td>
</tr>
<tr>
<td>1965-69</td>
<td>75.32</td>
<td>10.33</td>
<td>7.26</td>
<td>4.09</td>
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<td>1970-74</td>
<td>75.28</td>
<td>11.68</td>
<td>7.44</td>
<td>5.60</td>
</tr>
<tr>
<td>1975-79</td>
<td>67.06</td>
<td>13.03</td>
<td>6.50</td>
<td>11.41</td>
</tr>
</tbody>
</table>

*Overall percentage totals for 1939-79.

ent periodicals were cited. Table 20 lists the core of ten (1.6 percent) that provided almost 55 percent of the total number of periodical citations. C&RL led with almost 20 percent of the periodical citations. It was followed by Library Journal, Library Quarterly, American Libraries, and other leaders in the field. Only one of the top ten periodicals was not a library periodical in the strictest sense, American Archivist, although its relevance to libraries was readily apparent.

Periodical Title Dispersion. Stevens defined title dispersion as "... the degree to which the useful literature of a given subject area is scattered through a number of different books and journals. If there is much scattering, the title dispersion is high; if a large portion of the literature is contained in a few journals, the title dispersion is low." 24 Table 21 contrasts the title dispersion of the literature of several subject disciplines.

In the two studies of library science literature listed in table 21, only two titles were required to produce 25 percent of the references. At that point, it was not possible to differentiate the literature of library science from the literature of the sciences, chemistry and physics. Nor was the distinction readily apparent at the next level, where seven journals included 50 percent of the cited literature. The higher title dispersion for library science became obvious at the level where 75 percent of the literature was contained in a much greater number of journals than was true for chemistry or physics. While the title dispersion of library science literature was not as low as it was for the sciences, it was not as high as that of United States history. It seemed instead more comparable to the title dispersion of biochemistry.

Bibliographic Form: Monographs

Monographs comprised over 36 percent of the total documents cited. This figure was comparable to the 36.9 percent that Brace found in his study of library and information science dissertations. Eight-hundred eight (808) publishers supplied the monographs cited. These publishers were widely scattered and, altogether, the ten leaders listed in table 22 provided only about 34 percent of monographic citations. Most of the leaders were predictable: the American Library Association, the official voice for the library profession; the University of Chicago Press and Columbia University Press, leaders by virtue of the fact that they nurture two of the best library schools in the country; and the Association of College and Research Libraries, an important division of the American Library Association.

If the same criteria were applied to the cited monographs as were applied to the cited authors in order to determine a core of leading titles (i.e., each must be cited forty or more times) only two titles would be included. The first, Teaching with Books: A Study of College Libraries, by Harvie Branscomb, received fifty-two citations. It was cited most heavily (twenty-one times) from 1940 through 1945. However, its importance to librarianship was demonstrated by the fact that it continued to be cited through 1975-79. The second document cited more than forty times was Administration of the College Library by Guy R. Lyle, three editions of which were cited forty-three times in C&RL from 1947 through 1979. Although they were not cited forty or more times, two additional titles were cited heavily enough to
TABLE 17

<table>
<thead>
<tr>
<th>Bibliographic Form of Documents Cited in C&amp;RL, 1939–79</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Periodicals</td>
</tr>
<tr>
<td>Monographs</td>
</tr>
<tr>
<td>U.S. govt. publications</td>
</tr>
<tr>
<td>Proceedings</td>
</tr>
<tr>
<td>Theses and dissertations</td>
</tr>
<tr>
<td>Correspondence</td>
</tr>
<tr>
<td>Annual continuations</td>
</tr>
<tr>
<td>Unpublished materials</td>
</tr>
<tr>
<td>Annual reports</td>
</tr>
<tr>
<td>Reports</td>
</tr>
<tr>
<td>State govt. publications</td>
</tr>
<tr>
<td>Newspapers</td>
</tr>
<tr>
<td>Laws and statutes</td>
</tr>
<tr>
<td>Audiovisual materials</td>
</tr>
<tr>
<td>Archival materials</td>
</tr>
<tr>
<td>Legal cases</td>
</tr>
<tr>
<td>Miscellaneous</td>
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<tr>
<td>Unknown</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table 16

<table>
<thead>
<tr>
<th>Year</th>
<th>Periodicals</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939-44</td>
<td>45.49</td>
<td>1.2</td>
</tr>
<tr>
<td>1945-49</td>
<td>80.52</td>
<td>0.7</td>
</tr>
<tr>
<td>1950-54</td>
<td>90.8</td>
<td>0.1</td>
</tr>
<tr>
<td>1955-59</td>
<td>90.8</td>
<td>0.2</td>
</tr>
<tr>
<td>1960-64</td>
<td>90.8</td>
<td>0.3</td>
</tr>
<tr>
<td>1965-69</td>
<td>90.8</td>
<td>0.4</td>
</tr>
<tr>
<td>1970-74</td>
<td>90.8</td>
<td>0.5</td>
</tr>
<tr>
<td>1975-79</td>
<td>90.8</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Language/Geographic/Subject Distributions

Stevens defined language distribution as "the extent to which the research worker will find useful articles in languages other than his own." In this study, documents in sixteen different languages were cited from 1939 through 1979. English language documents were cited overwhelmingly (97.4 percent). This strong preference for English language materials contrasted sharply with that of the sciences as illustrated in table 23. It should be noted, however, that some of these studies of scientific literature were old and had not been updated. The 1981 Science Citation Index Guide did not indicate the percentage of cited documents that was in foreign languages. However, there was some reason to believe that English had become more important to the sciences than appeared to be the case in the data presented here. Garfield found, for example, that al-
TABLE 18

<table>
<thead>
<tr>
<th>Form</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
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<tr>
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<td>36.4</td>
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<td>1.8</td>
<td>3.3</td>
<td>1.3</td>
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<td>0.2</td>
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<td>1.1</td>
<td>1.1</td>
</tr>
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<td>1.4</td>
<td>2.1</td>
<td>1.2</td>
<td>0.3</td>
<td>1.2</td>
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<tr>
<td>U.S. govt. publications</td>
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<td>6.1</td>
<td>2.9</td>
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<td>4.6</td>
<td>3.7</td>
<td>2.8</td>
<td>4.6</td>
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<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>1.1</td>
<td>0.4</td>
</tr>
<tr>
<td>Annual continuations</td>
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<td>1.3</td>
<td>1.3</td>
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</tr>
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<td>4.2</td>
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</tr>
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<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.1</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
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<td>0.0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
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<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Newspapers</td>
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<td>0.5</td>
<td>0.7</td>
<td>0.6</td>
<td>0.9</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Unpublished materials</td>
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<td>0.0</td>
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<td>1.1</td>
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<td>0.4</td>
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<td>0.9</td>
<td>0.9</td>
<td>4.2</td>
<td>4.5</td>
<td>0.9</td>
<td>0.6</td>
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<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*1 = 1939-44; 2 = 1945-49; 3 = 1950-54; 4 = 1955-59; 5 = 1960-64; 6 = 1965-69; 7 = 1970-74; 8 = 1975-79.

TABLE 19

<table>
<thead>
<tr>
<th>Author and Subject</th>
<th>Serials</th>
<th>Bibliographic Form (in %)</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fussier — Chemistry, 1948</td>
<td>92.7</td>
<td>5.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Fussier — Physics, 1948</td>
<td>91.8</td>
<td>7.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Garfield — Science, 1980</td>
<td>86.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Broadus — Speech, 1953</td>
<td>45.7</td>
<td>47.9</td>
<td>6.4</td>
</tr>
<tr>
<td>McAnally — U.S. History, 1951</td>
<td>9.2</td>
<td>45.6</td>
<td>45.2</td>
</tr>
<tr>
<td>Popovich — Business/Mgt., 1978</td>
<td>58.6</td>
<td>31.9</td>
<td>9.5</td>
</tr>
<tr>
<td>Stewart — Politics, 1970</td>
<td>23.0</td>
<td>66.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Barnard — Library Science, 1957</td>
<td>51.8</td>
<td>37.7</td>
<td>10.5</td>
</tr>
<tr>
<td>Brace — Library Science, 1975</td>
<td>33.0</td>
<td>38.9</td>
<td>28.1</td>
</tr>
<tr>
<td>Cline — Library Science, 1980</td>
<td>50.1</td>
<td>36.4</td>
<td>13.5</td>
</tr>
</tbody>
</table>

*Table adapted from Barnard, p. 16.
†Includes journal items only.
†Includes periodicals, proceedings, annual continuations, and annual reports.

though 56 of the 100 most cited papers in the physical sciences had been published outside the United States, all 100 were published in English.26

**Geographic Distribution.** Four categories of geographic distribution were established: (1) United States; (2) English-speaking foreign countries, including the British Isles, Canada, Australia, New Zealand, and other British colonies; (3) other foreign countries; and (4) unknown. Table 24 presents the geographic distribution of documents cited throughout the years 1939 through 1979. Note that over 90 percent were published in the United States.

**Subject Distribution.** Subject distribution was defined as the extent to which writers in a particular discipline draw on sources outside that discipline. Low subject dispersion indicated that the cited literature belonged to a well-defined field that drew little from outside sources. High subject dispersion existed when the literature was largely composed of materials from outside the subject area to which the literature rightly belonged. In order to determine the subject dispersion of cited documents, they were assigned a single letter of the Library of Congress classification scheme. Table 25 presents the findings for 1939 through 1979. Almost 65 percent of all cited documents fell into the Z class, the special subject of library science.
### TABLE 20
**TEN PERIODICALS CITED MOST FREQUENTLY IN C&RL, 1939–79**

<table>
<thead>
<tr>
<th>Periodical</th>
<th>No. of Times Cited</th>
<th>Percent</th>
<th>Cum. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>College &amp; Research Libraries</td>
<td>1,001</td>
<td>19.23</td>
<td>19.23</td>
</tr>
<tr>
<td>Library Journal</td>
<td>550</td>
<td>10.57</td>
<td>29.80</td>
</tr>
<tr>
<td>Library Quarterly</td>
<td>379</td>
<td>7.28</td>
<td>37.08</td>
</tr>
<tr>
<td>American Libraries (incl. ALA Bulletin)</td>
<td>205</td>
<td>3.94</td>
<td>41.02</td>
</tr>
<tr>
<td>Library Trends</td>
<td>183</td>
<td>3.52</td>
<td>44.54</td>
</tr>
<tr>
<td>Library Resources and Technical Services</td>
<td>117</td>
<td>2.25</td>
<td>46.79</td>
</tr>
<tr>
<td>ASIS Journal (incl. American Documentation)</td>
<td>114</td>
<td>2.19</td>
<td>48.98</td>
</tr>
<tr>
<td>Special Libraries</td>
<td>110</td>
<td>2.11</td>
<td>51.09</td>
</tr>
<tr>
<td>American Archivist</td>
<td>108</td>
<td>2.06</td>
<td>53.17</td>
</tr>
<tr>
<td>Wilson Library Bulletin</td>
<td>81</td>
<td>1.56</td>
<td>54.73</td>
</tr>
<tr>
<td>Others (632 periodicals)</td>
<td>2,357</td>
<td>45.28</td>
<td>100.01</td>
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### TABLE 21
**NUMBER OF PERIODICALS CONTAINING THE RESEARCH LITERATURE OF DIFFERENT SUBJECT FIELDS**

<table>
<thead>
<tr>
<th>Author and Study</th>
<th>No. of References</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
</tr>
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<tbody>
<tr>
<td>Gross and Gross—Chemistry, 1927</td>
<td>3,633</td>
<td>2</td>
<td>7</td>
<td>24</td>
<td>247</td>
</tr>
<tr>
<td>Fussier—Chemistry, 1948</td>
<td>1,085</td>
<td>1</td>
<td>5</td>
<td>19</td>
<td>131</td>
</tr>
<tr>
<td>Fussier—Physics, 1948</td>
<td>1,270</td>
<td>3</td>
<td>12</td>
<td>56</td>
<td>851</td>
</tr>
<tr>
<td>Henkle—Biochemistry, 1938</td>
<td>17,198</td>
<td>3</td>
<td>12</td>
<td>56</td>
<td>851</td>
</tr>
<tr>
<td>McAnally—U.S. History, 1951</td>
<td>452</td>
<td>14</td>
<td>54</td>
<td>149</td>
<td>259</td>
</tr>
<tr>
<td>Barnard—Library Science, 1957</td>
<td>863</td>
<td>2</td>
<td>7</td>
<td>36</td>
<td>183</td>
</tr>
<tr>
<td>Cline—Library Science, 1980</td>
<td>5,205</td>
<td>2</td>
<td>8</td>
<td>52</td>
<td>642</td>
</tr>
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</table>

### TABLE 22
**LEADING PUBLISHERS OF MONOGRAPHS, 1939–79**

<table>
<thead>
<tr>
<th>Publisher</th>
<th>No. of Citations</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Library Association</td>
<td>428</td>
<td>10.08</td>
<td>10.08</td>
</tr>
<tr>
<td>University of Chicago Press</td>
<td>182</td>
<td>4.29</td>
<td>14.37</td>
</tr>
<tr>
<td>Columbia University Press</td>
<td>163</td>
<td>3.84</td>
<td>18.21</td>
</tr>
<tr>
<td>McGraw-Hill</td>
<td>112</td>
<td>2.64</td>
<td>20.85</td>
</tr>
<tr>
<td>Wiley</td>
<td>104</td>
<td>2.45</td>
<td>23.30</td>
</tr>
<tr>
<td>Wilson</td>
<td>102</td>
<td>2.40</td>
<td>25.70</td>
</tr>
<tr>
<td>Scarecrow</td>
<td>100</td>
<td>2.36</td>
<td>28.06</td>
</tr>
<tr>
<td>American Council on Education</td>
<td>81</td>
<td>1.91</td>
<td>29.97</td>
</tr>
<tr>
<td>Harper</td>
<td>80</td>
<td>1.89</td>
<td>31.86</td>
</tr>
<tr>
<td>Association of College &amp; Research Libraries</td>
<td>75</td>
<td>1.77</td>
<td>33.63</td>
</tr>
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</table>

### TABLE 23
**LANGUAGE DISTRIBUTION OF SUBJECT LITERATURES**

<table>
<thead>
<tr>
<th>Author and Subject</th>
<th>English</th>
<th>German</th>
<th>French</th>
<th>Other</th>
<th>Total Non-English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fussier—Chemistry, 1948</td>
<td>64.5</td>
<td>25.0</td>
<td>3.0</td>
<td>7.5</td>
<td>35.5</td>
</tr>
<tr>
<td>Wood—Chemistry, 1967</td>
<td>50.3</td>
<td>6.4</td>
<td>7.3</td>
<td>36.0</td>
<td>49.7</td>
</tr>
<tr>
<td>Fussier—Physics, 1948</td>
<td>66.6</td>
<td>22.1</td>
<td>2.9</td>
<td>8.4</td>
<td>33.4</td>
</tr>
<tr>
<td>Wood—Physics, 1967</td>
<td>73.0</td>
<td>4.0</td>
<td>4.0</td>
<td>19.0</td>
<td>27.0</td>
</tr>
<tr>
<td>Wood—Biology, 1967</td>
<td>75.0</td>
<td>3.0</td>
<td>3.0</td>
<td>19.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Stewart—Politics, 1970</td>
<td>82.1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>17.9</td>
</tr>
<tr>
<td>McAnally—U.S. History, 1951</td>
<td>96.4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>3.6</td>
</tr>
<tr>
<td>Barnard—Library Science, 1957</td>
<td>94.5</td>
<td>1.2</td>
<td>1.9</td>
<td>2.4</td>
<td>5.5</td>
</tr>
<tr>
<td>Cline—Library Science, 1980</td>
<td>97.4</td>
<td>1.0</td>
<td>0.5</td>
<td>1.1</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Table was adapted from Stevens, p.17.
TABLE 24
GEOGRAPHIC DISTRIBUTION OF CITED DOCUMENTS, 1939-79

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>10,573</td>
<td>90.69</td>
</tr>
<tr>
<td>English-speaking foreign</td>
<td>664</td>
<td>5.70</td>
</tr>
<tr>
<td>Other foreign</td>
<td>415</td>
<td>3.56</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,658</strong></td>
<td><strong>99.90</strong></td>
</tr>
</tbody>
</table>

Table 24 analyzes the subject dispersion by five-year period. The highest dispersion occurred in the fifteen years between 1960 and 1975 when the percentages of documents classified as Z were the lowest at 53, 54, and 62 percent. In all other time periods, the percentage of documents in the Z's hovered at or above 70 percent.

Few trends were discernible in the subject distribution of cited documents. In 1960-64, when subject dispersion was at its greatest, education documents (L's) were cited more frequently than any classification other than Z. From that time period to 1975-79, however, the use of education materials decreased 8.4 percent and the use of social science items (H's) increased 7.0 percent. Only the H's and L's provided a substantial percentage of documents outside the Z's, the special subject of library science.

Subject dispersion of the cited literature is compared with that of other disciplines in Table 27. This study adopted Barnard's definition of subjects closely related to library science and considers them to be: history (D, E, F), sociology (H), education (L), literature (P), and technology (T). The two studies of library science literature showed a surprisingly low subject dispersion, Barnard's being lower than that which Fussier found for chemistry, while the subject dispersion of this study was comparable to that of physics.

Time Span of Cited Documents

Studies of the time span between the publication of a document and its use (i.e., citation) have produced some interesting observations. For example, upon finding that chemists used chemical literature for a longer time than physicists used chemical literature, Fussier said, "It is reasonable to suppose that this is a natural phenomenon in which specialists in a field use the literature of the field over a longer time span than do non-specialists. . . . It may well be that the literature of 'outside' fields is used only so long as it is new and fresh."

In 1970, Price examined data from the Science Citation Index and found that for each year from 1964 through 1968 more than 50 percent of the citations were to the last five years. The data for 1965 provided a high mark of 55.3 percent. For that same year, the percentage of citations dated in the previous five years for selected social science journals was lower: American Sociological Review, 35.2 percent; Psychological Bulletin, 37.8 percent; and Journal of Abnormal and Social Psychology, 39.2 percent. American Documentation (now Journal of the American Society for Information Science) was the only social science journal that had a higher percentage (at 59.8 percent) than that of the Science Citation Index journals (55.3 percent).

Table 28 presents the time span of various subject literatures from studies completed over a thirty-year span. The highest percentages of citations dated in the previous five years were: 69.4 percent for physics; 56.4 percent and 52.0 percent for library science; and 51.3 percent for chemistry. There is reason to believe that Fussier's data may no longer hold true. In 1980, Garfield reported that:
the references [in biochemistry articles] are to a higher proportion of older material than was the case previously. In 1969, 54.5 percent of [the references in Acta Biochim. Biophys.] were more than five years old. This steadily increased to 71.7% in 1977. . . . A similar increase has also taken place in mathematics and botany. 29

It is difficult to explain the high percentage of citations to the last five years in documents cited in C&RL. It cannot be, as Fussier suggested, that new and fresh material was cited from outside fields. Recall that subject dispersion was low for the documents cited in C&RL throughout this entire study, indicating that librarians had not drawn frequently from outside sources. A reasonable explanation was that only current materials were of importance to librarians because they discussed current topics—e.g., what the current inflation was doing to budgets, what technological changes had occurred, etc.

**SUMMARY AND CONCLUSIONS**

*College & Research Libraries* has been one of the leading publications in the field of library science since its inception in 1939. Published by the ACRL, it has served many purposes, chief among which was to be the avenue of communication between the association and its members. When C&RL News originated in 1966, it assumed that important responsibility, publishing news items, personnel profiles, and other notes, in the process freeing C&RL to publish more schol-

---

**TABLE 26**

<table>
<thead>
<tr>
<th>Classification</th>
<th>39-44</th>
<th>45-49</th>
<th>50-54</th>
<th>Time Period (in Percent)</th>
<th>55-59</th>
<th>60-64</th>
<th>65-69</th>
<th>70-74</th>
<th>75-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.9</td>
<td>1.1</td>
<td>1.7</td>
<td>2.8</td>
<td>3.9</td>
<td>1.6</td>
<td>2.0</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1.0</td>
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<td>0.8</td>
<td>0.6</td>
<td>0.0</td>
<td>3.6</td>
<td>1.3</td>
<td>0.4</td>
<td></td>
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<tr>
<td>C</td>
<td>0.3</td>
<td>0.0</td>
<td>1.3</td>
<td>0.4</td>
<td>0.4</td>
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<td>2.7</td>
<td>0.5</td>
<td>1.7</td>
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<td>5.7</td>
<td>1.4</td>
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</tr>
</tbody>
</table>

**TABLE 27**

<table>
<thead>
<tr>
<th>Author and Subject</th>
<th>Special Subject (%)</th>
<th>Closely Related Subject (%)</th>
<th>Other (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fussier—Chemistry, 1948</td>
<td>71</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Fussier—Physics, 1948</td>
<td>63</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>Sengupta—Biochemistry, 1973</td>
<td>55</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>McAnally—U.S. History, 1951</td>
<td>31</td>
<td>7</td>
<td>62</td>
</tr>
<tr>
<td>Voigt—Metallurgical Engineering, 1947</td>
<td>61</td>
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<td>23</td>
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<tr>
<td>Voigt—Mechanical Engineering, 1947</td>
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<td>13</td>
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<tr>
<td>Barnard—Library Science, 1957</td>
<td>78</td>
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<tr>
<td>Cline—Library Science, 1980</td>
<td>65</td>
<td>20</td>
<td>15</td>
</tr>
</tbody>
</table>

*Table adapted from Stevens, p.15.*
arly papers. The purpose of this study was threefold: (1) to describe the literature both published and cited in C&RL from 1939 through 1979; (2) to identify significant changes and trends in its publication patterns; and (3) to compare the findings of this study with the results of similar studies of various subject disciplines, especially landmark studies of scientific literature. The underlying goal in pursuing the final purpose was to determine how C&RL, as a leading library journal, compared with scholarly journals in other fields.

In this study, the characteristics of both source and cited documents were examined in detail, revealing many changes that had occurred from 1939 to 1979. The vast majority of changes boded well for the journal, indicating higher standards and increased scholarliness. This summary will briefly enumerate the changes and draw some conclusions concerning the present status of C&RL.

From its beginning in 1939 until the mid-1950s, C&RL published many short, newsy articles. After 1954, however, it began to publish fewer but longer articles. The practice of referencing earlier works was sadly neglected by the contributors to C&RL until the 1970s, when the percentage of unreferenced articles dropped to 13 percent in 1970-74 and 9 percent in 1975-79, figures in line with the average of 10 percent for scientific literature. As a natural consequence of increased referencing, the average number of references per article also increased, from 2.89 in 1939-44 to 15.46 in 1975-79. This latter figure compared favorably with the norm of 10 to 22 references per article for scientific literature. There were many possible reasons for librarians to have neglected the practice of referencing for so long. For example, in the earlier years of the study, the body of library literature was not very large and access to it probably was limited for many librarians. Price, however, pointed to the most plausible explanation for this phenomenon:

Trivially and quite typically, such unreferenced papers occur when an experienced scientist or librarian makes an ex cathedra pronouncement out of his innate knowledge of what should be or what is.30

Both journal and author self-citing rates in C&RL consistently fell below the average percentages for scientific literature (20 percent and 8 percent, respectively). This was simply because the total number of journal and author self-citations were minimal with respect to the total number of citations. However, despite the consistently low self-citing rates, the practice of self-citation increased steadily and substantially from 1939 to 1979 for both the source journal and source authors. These self-citations indicated the existence of increased numbers of related materials in C&RL as well as the existence of further documents produced by its contributors.

Throughout the forty years of this study, one library activity was discussed more frequently than any other, organization and administration (about 34 percent). One reason for the heavy emphasis on this topic was supplied by Kim and Kim, who looked at the authorship of articles published in C&RL in terms of library position.31 They found that library administrators contributed a very large percentage of the articles (65.7 percent in 1957-66 and 47.2 percent in 1967-76). It was only natural then that administrators should write about administration. Unfortunately, few significant trends in the topics
discussed were discernible, because the relative frequencies for each generally varied by less than 5 percent from one time span to another. The slight decline of interest in automation and information retrieval, a topic of importance to most librarians, could be attributed to the publication of new, specialized periodicals such as the Journal of Library Automation.

Source authors were characterized by sex, institutional affiliation, and extent of collaborative authorship. Further, an effort was made to identify a core of productive authors, and Lotka's law was applied to the empirical data to ascertain whether the contributors to C&RL were as productive as scientific authors. An overwhelming majority (about 80 percent) of principal authors were males, and that rate remained relatively constant over the years. The Olsgaards pointed out that females had failed to publish up to the normal level, which should have been 84 percent for the general library population or 61.5 percent for academic librarians. As expected, the majority of authors (about 60 percent) were librarians affiliated with academic institutions. Collaborative authorship increased from less than 5 percent in 1939-44 to over 20 percent in 1975-79. Price indicated that collaborative authorship was useful as a means of analyzing invisible colleges and in-groups, but added that collaboration arises more from economic rather than intellectual dependence. While it was not the purpose of this paper to investigate the existence of invisible colleges or economic dependence among contributors to C&RL, it seemed likely that both were reasons for the observed increase in collaborative authorship. A very weak core of productive authors was identified, consisting of only six authors who contributed ten or more articles through the forty years of this study: Robert D. Downs, Keyes D. Metcalf, Robert H. Muller, Ralph E. Ellsworth, Ralph R. Shaw, and Maurice F. Tauber. When Lotka's law was applied to the source author data, the results proved that, overall, the contributors to C&RL were not as productive as scientific authors. Whereas Lotka reported that 60 percent of scientific authors published only one article in a given period of time, this study found a much higher rate, 80 percent for contributors to C&RL.

The documents cited in C&RL grew at a rate that appeared in part to be exponential from 1939 to 1979. However, a true exponential curve was disrupted by an unusually high growth rate during the decade of the 1960s. This undoubtedly resulted from increased funding of research during those years.

Many of the characteristics of the cited authors paralleled those of the source authors. For example, an overwhelming majority of both source (80 percent) and cited (73 percent) authors were males. A trend toward increased collaboration among source authors was also observed for cited authors, although at a somewhat reduced rate. Just as the source authors were widely scattered (about 80 percent contributed only one article), so were the cited authors, over 60 percent of whom were cited only once throughout the forty years of this study. Thus it was inescapable that out of more than 4,000 individual authors, only 17 were cited often enough to be identified as a core. Three of these 17 authors were among the 6 leading contributors to C&RL: Robert B. Downs, first among both source and cited authors; Keyes D. Metcalf, second among the source authors, fifth among the cited authors; and Ralph E. Ellsworth, fourth among the source authors and ninth among the cited authors.

One of the significant characteristics of any subject literature is the form in which most of its material is published. Periodical literature is unquestionably the most important bibliographic form for science. Both Price and Garfield and Sher reported that 80 percent or more of all references in scientific papers were to periodical articles. For C&RL, only about 45 percent of the cited documents were periodicals. However, a slight trend toward increased use of periodical literature was observed. The periodicals cited in C&RL were widely scattered, a characteristic typical of the social sciences but in contrast to that of the sciences, where much of the literature on a topic was contained in a few journals.

Language and geographic distributions were low for the documents cited in C&RL, with over 97 percent of them appearing in the English language and about 91 percent published in the United States. Several probable reasons for these low distributions pre-
sented themselves. First, accessibility of the documents was probably limited to the large libraries and library school libraries. Second, indexing of foreign language material in library science was also restricted, with the only widely available index, Library Literature, including only a limited number of non–English language materials. And last, it was probable that very little library research of importance was completed outside the English-speaking countries.

Subject distribution is another characteristic widely examined for various disciplines. Scientific literature generally has low subject distribution, i.e., the majority of documents fall into the special subject with little drawn from outside sources. The documents cited in C&RL were classified with a single letter of the Library of Congress classification scheme, with Z designated to be the special subject with little drawn from outside sources. The final characteristic examined for cited documents was their time span. For this study, about 65 percent of all cited documents fell into the Z's. This low distribution, characteristic of scientific literature, seemed to indicate a well-defined field. It should be pointed out, however, that some researchers feel that this great concentration of cited documents in the special subject of library science is a weakness rather than a strength. Saracevic and Perk36 felt that the nature of librarianship was too restrictive, too self-contained, and that interaction with other disciplines was needed to broaden the subject.

The final characteristic examined for cited documents was their time span. For this study, over 56 percent were cited within five years of their publication. This was a larger proportion than was reported in 1980 for literature indexed in the Science Citation Index, 45.6 percent.37 Librarians thus seemed to require current, up-to-date information as much or more so than did scientists.

In 1939, when it commenced publication, C&RL filled a definite need for academic and research librarians. It immediately became a leader in circulation among library periodicals. However, in scholarliness, it did not initially adhere to the norms observed for other disciplines, especially the sciences. From 1939 through 1979, positive changes occurred in the documents both published and cited in C&RL, pointing to both an awareness of the need for higher standards and a greater adherence to those standards. If the trends ascertained in this study continue, the future of C&RL as a truly scholarly library journal seems assured.

REFERENCES

3. [Publication Information], ACRL News 1:3 (March 1966).
8. Ibid.
10. SCI Journal Citation Reports; a Bibliometric Analysis of Science Journals in the ISI Data Base, 1979, V.14 (Philadelphia: Institute for Scientific Information, 1980), p.13A.
Bibliography of Documents Referenced
in the Tables in Part Two


APPENDIX A
SUBJECT CLASSIFICATION OF ACTIVITIES DISCUSSED IN SOURCE DOCUMENTS IN C&RL

1. General: Includes background studies, historical studies, biography, philosophy, censorship, ethics, intellectual freedom, etc.

2. Organization and Administration
   General Administration: Includes finance, personnel, unions, salaries, etc.
   Professional Education: Includes institutes, in-service education, etc.
   Architecture and Equipment: Includes buildings, furniture, equipment, supplies, etc.

3. Resources
   Book: Includes printing, illustration, book trade, etc.
   Serial Publications: Includes periodicals, journals, newspapers, etc.
   Special Types of Materials: Includes government publications, rare books, indexes and abstracts, etc.
   Subject Literatures: Includes, e.g., music, folklore, black literature, etc.
   Audio-Visual Materials: Includes recordings, films, television, picture collections, etc.

4. Public Services
   Circulation: Includes access to shelves, fines, inventories, etc.
   Reference and Research Services: Includes reference interview, telephone information service, bibliographic searching, etc.
   Library Cooperation: Includes interlibrary loan, union catalogs, networking, etc.
   Use and User Studies
   Reader Services: Includes special services for such groups as the handicapped, cultural programs, etc.

5. Technical Services
   Acquisitions and Selection: Includes ordering, cooperative purchasing, gifts, etc.
   Cataloging and Classification: Includes cataloging, classification, indexing, etc.

6. Automation and Information Retrieval
   Automation of Library Processes: Includes application of the computer, punched cards, etc.
   Information Retrieval and Documentation: Includes coordinate indexing, selective dissemination of information, etc.

7. Library Instruction: Includes methods of instruction, slide/tape productions, etc.

8. Photoreproduction and Microfilming
   Copyright Law and Fair Use Doctrine
   Techniques, Methods, and Equipment

APPENDIX B
APPLICATION OF LOTKA'S LAW

Lotka's law has been widely recognized as a measure of the productivity of scientific authors. In 1926 Alfred Lotka analyzed the number of publications of chemists listed in Chemical Abstracts, 1907-1916 (actually he considered only 6,891 names beginning with the letters A and B) and those of physicists listed in Auerbach's Geschachtstafeln der Physik. He found: (1) that the number of persons making \( n \) contributions was about \( 1/n^2 \) of those making only one contribution, and (2) that the proportion of all persons making a single contribution was about 60 percent. These findings can be generally stated as:

\[ y = c/x^n = cx^{-n} \]

where \( y \) = percent of authors
\( x \) = number of articles
\( c \) = constant
\( -n \) = slope of the log-log plot of the above equation

When \( y \), the percent of authors, is plotted on log-log paper versus \( x \), the number of articles, an essentially straight line results. The slope of the line, \( -n \), can be calculated using a least-squares approach. Lotka found that for \( n = 2.0 \), the constant, \( c \), equaled .6079 or 60.79 percent; thus,

\[ y = \frac{60.79}{x^{2.0}} \% = 60.79x^{-2.0} \% \]
Lotka also found that a least-squares analysis of Auerbach's data yielded \( n = 2.0 \), which resulted in the percent of authors given by the above equation. However, for the Chemical Abstracts data, the least-squares analysis yielded a fractional exponent, \( n = 1.888 \), which was found (from mathematical tables) to correspond to \( c = 56.69 \) percent. Thus, in this case, Lotka's law becomes:

\[
y = \frac{56.69}{x^{1.888}} \%
\]

Coile discussed several instances in which Lotka's law had been misinterpreted by the author's having assumed a value of \( n = 2.0 \) regardless of the slope of the log-log plot. He stressed that whatever the data—humanistic or scientific—the manner in which they are collected must be consistent with Lotka's data for statistical tests of goodness-of-fit. Coile stated that the data must include senior authors only, thus eliminating all coauthors. He also found that the chi-square test was not an appropriate goodness-of-fit test for this type of data. Instead, he recommended the use of the Kolmogorov-Smirnov test.

The first four columns of table 1 represent the empirical data concerning the number of articles per source author. They can be read as follows: 992 source authors (80.02 percent) contributed one article to C&RL during 1939–79; 142 (11.44 percent) contributed two articles; through 1 source author (0.08 percent) having contributed twenty-four articles. Column 4 represents the observed cumulative distribution function, \( S_n(x) \), for the percentages of column 3.

A curve fitting linear regression analysis\(^8\) of the data of columns 1 and 3 yielded \( n = 2.44 \) and \( c = 51.29 \) percent. See figure 1 for a plot of these data. Using these values in the above equation for Lotka's law, an estimated percent of authors, \( \hat{y} \) (column 5), was calculated for each corresponding value of \( x \) (column 1). From these values of \( \hat{y} \), the calculated cumulative distribution, \( F_n(x) \), was obtained (column 6).

Coile showed that the Kolmogorov-Smirnov test for goodness-of-fit was appropriate for this type of data.\(^3\) The maximum deviation (\( D_{\text{max}} \)) between the theoretical and observed cumulative distribution functions is given by:

\[
D_{\text{max}} = \max \left| S_n(x) - F_n(x) \right|
\]

which is obtained from column 7. This value is compared with the value found at the .01 level of significance (\( a_{.01} = 1.63/\sqrt{N} \)) with \( N = 1,240 \). Since \( D_{\text{max}} = .3147 \), which exceeds \( a_{.01} = .0466 \), one must conclude that the empirical data do not adhere to Lotka's law.

<table>
<thead>
<tr>
<th>No. of Articles/Author</th>
<th>Total No. of Source Authors</th>
<th>% of Authors</th>
<th>( S_n(x) )</th>
<th>% of Authors</th>
<th>( F_n(x) )</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>4</td>
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<tr>
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<td>.6894</td>
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\( \hat{y} \) was calculated using Lotka's law with \( n = 2.44, c = 50.29 \), and \( N = 1,240 \).
Fig. 1
Number of Articles/Author as a Percentage of Total Authors in C&RL, 1939-79

REFERENCES


Copyright Policies in Virginia Academic Library Reserve Rooms

Since academic reserve room photocopying was not directly treated in the copyright legislation (Public Law 94-553) that became effective January 1, 1978, there has been a lack of consensus among library administrators as to the intent of the law in this area. A 1981 survey of thirty-seven Virginia academic libraries indicated a wide spectrum of reserve room photocopying procedures, but most based their policies on fair use and/or guidelines for classroom copying, and generally do not restrict reserve room copies to one academic term. Since public law 94-553 regarding copyright came into effect on January 1, 1978, there have been differences in interpretation of the meaning of the legislation on the operation of the academic library reserve room. A search of the literature reveals a lack of consensus as to the effect that sections 107 and 108 should have on reserve room procedures.

John C. Stedman, emeritus professor of law at the University of Wisconsin and chairman of the Committee on Copyright Law of the American Association of University Professors, defined reserves as “selected writings made available to individual and successive students for educational purposes, subject to sharp time limitations, and usually, restrictions on physical removal from the library premises,” and asked, “Does the common, and academically important practice of photocopying copyrighted materials and putting them on reserve for use by students constitute copyright infringement?”

The core of the dilemma lies in the ambiguities ensuing from the fact that the library reserve room was not treated in the legislation, leaving some confusion among academic library administrators as to the intent of the law in this area.

Section 106 describes the exclusive rights of the copyright owner, including copy reproduction and distribution. Sections 107 through 118 deal with certain limitations on those rights, but only sections 107 and 108 are germane to this discussion and study.

Section 107 of the law gives statutory recognition for the first time to the traditional doctrine of “fair use,” a limitation on the exclusive rights of a copyright holder created and developed by the courts because copying was not foreseen by the 1909 copyright law. The Register of Copyrights conceded before the House Judiciary Committee in 1975 that fair use has not been exactly defined; however, it allows limited copying “without permission from or payment to the copyright owner where the use is reasonable and not harmful to the rights of the copyright owner.”

The language of section 107 (limitation on exclusive rights: fair use) seems liberal regarding copying for purposes of academic instruction: “Notwithstanding the provisions of section 106, the fair use of copyrighted work, including such use by reproduction in copies or phonorecords . . . for purposes such as . . . teaching (including multiple copies for classroom use), scholarship, or research,
is not an infringement of copyright.” Until this language is clarified by future court decisions, it appears to allow considerable freedom in photocopying selected material to be retained in the library reserve room for instructional use. Because of multiple copying abuses by some institutions in the past, publishers and other copyright owners were apprehensive that excessive photocopying would undercut sales. However, such abuses and the resultant fears by publishers seldom centered on the academic library reserve room. Concern has focused, rather, on library photocopying associated with interlibrary resource sharing. The publishers “... continue to assert that library photocopying and resource sharing are cutting into their profits and undermining the long term viability of the industry. But the image of a publishing industry in distress is a myth.”

In March 1976, when the legislation was under consideration, an ad hoc Committee on Copyright Law Revision, composed of representatives from the Authors League of America, the Association of American Publishers, and selected educational institutions, brought forth an “Agreement of Guidelines for Classroom Copying in Not-For-Profit Educational Institutions,” stating “minimum standards of educational fair use under Section 107 . . . ,” which attempted to narrow and limit the scope of fair use considerably, to the benefit of the authors and publishers. The “Guidelines for Classroom Copying” explicitly concentrated on classroom teaching practices, and many librarians believe them inapplicable to the library reserve room. Others however, both teachers and librarians, view the reserve room as an extension of the classroom because the instructor determines its contents, if only temporarily during academic sessions. The guidelines are viewed by some as the self-servicing creation of an interest group, lacking the force of law. Nevertheless, their criteria as to what practices should be acceptable under the “fair use” doctrine were agreed upon between the copyright owners and representatives of a substantial segment of educational users, “an agreement that Congress knew of and found acceptable prior to final enactment of the Copyright Law.” The guidelines agreement referred only to copying from books and periodicals, not from musical or audiovisual works.

The quasi-legal “Guidelines for Classroom Copying” state minimum, not maximum, standards and specifically stipulate in the text of the agreement that they were “not intended to limit the types of copying permitted under the standards of fair use under judicial decision, and which are stated in Section 107 of the . . . Bill.” The guidelines essentially allow a teacher to make a single copy for research or for use in teaching of a book chapter, a newspaper or periodical article, a short story, essay, or poem, or an illustration from a book. Multiple copies may be made for classroom use, not to exceed one copy per pupil per course, providing that tests of brevity and spontaneity, as defined in the guidelines, are met.

L. Ray Patterson, then (1977) dean of the Emory University Law School, suggested that the restrictions of the copyright law, increasing the copyright owner’s control of access to copyrighted material, may be unconstitutional, and advised that litigation in a test case be invited so that the courts would begin to interpret the statute in favor of educators rather than copyright holders. He was particularly critical of the fair use guidelines. Michael Cardozo, a Washington lawyer and former professor of law who represented the Association of American Law Schools on the ad hoc fair use committee, maintained that the intent of Congress was that the public interest in education and research transcends the author’s and publisher’s need for financial compensation when copying is done for those purposes.

Section 108 (reproduction by libraries and archives), although longer and more complex than section 107, is narrower and more specific. Photocopying is permitted with certain limitations: for the purposes of preservation or restoration of collection materials; to comply with a user request for a copy of an article or selection from a title or periodical in its collection, or from the resources of another library on interlibrary loan; to provide a copy of an entire work to a user on request, provided that a copy cannot be purchased at a fair price.

The National Commission on New Technological Uses of Copyrighted Works (CONTU) offered their offices to help develop guidelines leading to the construction
and interpretation of section 108 (g)(2) affecting interlibrary loan. The literature indicates that some confusion may still exist in distinguishing between the "Guidelines for Classroom Copying" (fair use) and the CONTU guidelines (interlibrary loan). Neither deal with the practice or even the concept of the academic library reserve room.

King Research of Rockville, Maryland, is in the process of surveying for the U.S. Copyright Office a total of 150 publishers and 500 public, academic, federal, and special libraries, gathering data for a five-year report to be made by the Register of Copyrights to the Congress on January 1, 1983, as required by Public Law 94-553. In a similar 1977 survey of library photocopy patterns, King Research found that most such photocopying fell within the "fair use" doctrine, and "warned publishers not to expect library photocopying fees to produce much revenue."7

For guidance, then, in developing photocopying policies in support of reserve room procedures, academic library staff must seek direction in section 107 (fair use), the guidelines (which extend this section by setting standards for educational fair use in the classroom situation), and in section 108 (libraries and archives). None of the three sources deal with the reserve room.

In early 1978, just after Public Law 94-553 became effective, Meredith Butler surveyed twenty-seven academic libraries in New York State by telephone to "sample current attitudes, practices, procedures and problems relating to library reserve operations and the new copyright law."8 She found that ten of the twenty-seven libraries "have established reserve policies based on the principle of fair use (Section 107) and feel strongly that the Guidelines for Classroom Copying in Not-for-Profit Educational Institutions do not apply to the reserve operation since it is not an extension of the classroom. Fifteen others have based their policies on both the concept of fair use and the Guidelines and think that the Guidelines have direct applicability to library reserve operations."

Butler concluded that:

Most of the libraries in the survey have taken a fairly conservative approach to the problem of reserve and copyright. Practice and interpretation vary considerably from one library to the next and this should be a cause for serious concern in the profession. There is confusion and disagreement on such important questions as:

1. Do the Guidelines apply to reserve operations?
2. In terms of reserve demands, what constitutes fair use copying?
3. Should the law be retroactively applied?
4. Can photocopied materials be used repeatedly?
5. Is photocopied material placed on reserve the library's property, or must it belong to the individual instructor?
6. What rights does a library have to satisfy its need for reserve material if permission to copy is denied or delayed?9

Table 1: Questionnaires Returned

<table>
<thead>
<tr>
<th>Institutional Category</th>
<th>Surveys Sent</th>
<th>Surveys Returned</th>
<th>Return Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities, doctoral</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Universities, 5th-year</td>
<td>11</td>
<td>10</td>
<td>90.9</td>
</tr>
<tr>
<td>Colleges, 4-year</td>
<td>7</td>
<td>5</td>
<td>71.4</td>
</tr>
<tr>
<td>Community and 2-year Colleges</td>
<td>18</td>
<td>14</td>
<td>77.7</td>
</tr>
<tr>
<td>Totals</td>
<td>44</td>
<td>37</td>
<td>84.1</td>
</tr>
</tbody>
</table>
**Question 1.** “What guidelines has your library utilized in developing reserve room policy?”

Twenty-nine (78.4 percent) of responding libraries indicated that section 107 of the statute, which focuses on fair use, either totally or partially formed the basis of their development of reserve room policies. Of these, eighteen (48.6 percent) also considered the “Guidelines for Classroom Copying” a reference in structuring policies. Seventeen institutions (45.9 percent) indicated that section 108, library and archival copying, was also considered as a philosophical base, but only one library, a community college, stated that they relied on section 108 entirely. Three other libraries (8.1 percent) marked both sections 107 and 108. Thirteen libraries (35.1 percent) considered fair use, classroom copying guidelines, and also section 108 (library photocopying) important in policy formulation. It should be noted that the three concepts represent varying degrees of liberality and that some responding libraries, in marking more than one of the three guidelines, may not have recognized the implied contradictions.

Of the four “other” respondents, one did not utilize any guidelines and one used several additional sources of information. One university left such decisions up to the instructor, while a fourth respondent noted “we usually won’t make more than 4 or 5 copies.”

In summary, thirty-three out of thirty-seven responding libraries (89.2 percent) used either fair use (section 107) or its associated “Guidelines for Classroom Copying” as a basis for structuring reserve room photocopying policies.

**Question 2.** “Are you aware of anything subsequent to January 1, 1978, published in congressional hearings or reports that sheds additional light on reserve room operations?”

Although two libraries responded in the affirmative, subsequent analysis revealed no new congressional hearings or staff reports since passage of the law.

**Question 3.** “How many copies does your reserve room accept (from faculty members for student use)?”

Twenty-eight libraries (75.7 percent) of the thirty-seven responding accepted one fair use copy without permission, to be placed on reserve by faculty. Of these, thirteen (35.1 percent) liberalized this policy further by allowing additional copies with the permission of the copyright owner. Another seven of the twenty-eight (18.9 percent of respondents) were even more tolerant and permitted additional multiple copies without permission. Of the ten (27.0 percent) who checked “other arrangements,” two checked either a or c as well (see appendix A), signifying that other arrangements were additional to fair use considerations. Of the eight (21.6 percent) who noted “other arrangements” exclusive of a, b, or c, four (10.8 percent) essentially allowed the instructor to determine copyright compliance and accepted all copies placed on reserve by the instructor with little or no restriction; three (8.1 percent) followed the “Guidelines for Classroom Copying,” permitting a set number of copies according to number of students, amounting to two or three copies on reserve.

In developing reserve room procedures, the thirty-seven respondents ranged from very restrictive in interpreting the copyright law and guidelines to very permissive, with most viewing statutes and guidelines liberally. Table 2 roughly classifies the responses to question three by the number of copies a library will accept from faculty for reserve room use.

**Question 4.** “Is your library restricting single and/or multiple copies of copyrighted materials placed on reserve for one term use only?”

Of the thirty-seven libraries responding, twenty-eight (75.7 percent) indicated no restrictions to the use of single and/or multiple copies of copyrighted material for more than one term. Nine libraries (24.3 percent) restricted copyrighted materials on reserve to one term only.

**Question 5.** “Who takes responsibility for seeking permission for copying when necessary?”

In twenty-eight out of thirty-seven responding libraries (75.7 percent), the faculty member assumes responsibility for seeking permission from the copyright owner to make multiple copies of material under copyright, to be placed on reserve in the library. Eight (21.6 percent) of the respondents reported that the library staff requests releases for the teacher.
TABLE 2

<table>
<thead>
<tr>
<th>NUMBER OF COPIES ACCEPTED FROM FACULTY FOR RESERVE ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
</tr>
<tr>
<td>One copy only, restricted to original owned collection materials or to preserve the original</td>
</tr>
<tr>
<td>One fair use copy only, from collection or faculty-owned materials</td>
</tr>
<tr>
<td>One fair use copy with additional copies by written permission of the copyright owner</td>
</tr>
<tr>
<td>Limited number of multiple copies from instructor under “Guidelines for Classroom Copying”</td>
</tr>
<tr>
<td>One fair use copy with additional copies without permission, under mild internal conditions</td>
</tr>
<tr>
<td>Instructor assumes responsibility for copyright compliance with few or no restrictions</td>
</tr>
<tr>
<td>No answer to this question</td>
</tr>
<tr>
<td>Total Respondents</td>
</tr>
</tbody>
</table>

Question 6. “When seeking permission, what form is used?”

Fourteen libraries did not answer this question because it devolves from question five, preceding. Of the twenty-three libraries who answered this question, sixteen (43.2 percent of the sample, 69.6 percent of those who responded to the question) noted that an individually prepared permission letter was sent by either the requester or the library staff to the copyright holder or clearinghouse, and seven (18.9 percent of the sample, 30.4 percent of those who responded to this question) used form letters for the same purpose. Total question responses and percentages add up to more than 100 percent because several respondents checked more than one item.

Question 7. “Must material copied for reserve be something already in your library’s collection?”

The overwhelming majority of libraries (thirty-five out of thirty-seven, or 94.6 percent) accepted materials from an instructor to be placed on reserve that were not necessarily from the library’s collection. Only two (5.4 percent) restricted reserve materials to collection items from their own libraries.

Question 8. “Do you plan to respond to the government’s request for information concerning effects of the new copyright law when it is reviewed by Congress in 1982?”

Of the sample of thirty-seven libraries returning questionnaires, thirty-two (86.5 percent) answered this question; twenty-two (59.5 percent of the sample, 68.8 percent of those answering this question) did not plan to provide input into congressional review scheduled for 1982. Ten institutions (27.0 percent of the sample, 31.3 percent of those answering this question) reported that they were gathering data on reserve room photocopying in preparation for participation in the statute review process.

Question 9. “What alternative means are you suggesting to faculty frustrated in their use of copyrighted material for the reserve room?”

Many libraries are making concerted efforts to provide other means of utilizing reserve services when restrictions on copying conflict with the instructional needs of the faculty and student body. Five institutions, including two large research universities, encourage their faculty to seek special permission more often when placing copies on reserve. Placing personal copies of works on reserve is suggested by two of the respondents, while three institutions, including one well-known research university, believes the library and/or student should purchase additional copies. Other suggestions from the surveyed libraries are:
1. greater use of other library resources.
2. utilization of OATS (Original Article Tear Sheets).
3. if material is not in print, . . . copies should be made.
4. encourage students to make their own copies.
5. use of more than one reading.
6. provide copies of the law, guidelines, and sample permission forms.
7. pay royalties to the CCC (Copyright Clearance Center).

Finally, one library offered a useful suggestion: “Stay cool and find some way around it.”

General Analysis

In examining the data to determine if there exists a consensus on issues raised by the survey, it is clear that on at least some questions most libraries can agree. Most significantly, we can safely say that the two most
overwhelming responses support the ideas that: (1) once an item is accepted for reserve purposes, its use is not limited by term; and (2) items accepted for reserve room use do not have to be limited to those owned by the library.

An overwhelming 95 percent of the libraries responding do not limit copies to those items owned by the library, and a high 75 percent do not limit use of these items to only one term. These two responses are not ambiguous in any way and show a force of opinion in answering questions regarding the statutes. This should be of some comfort to those libraries that have doubts about the interpretation of the new law. It is significant that once an item is identified as copyable, the use of such a copy is not restrictable. It is also interesting to note that 75 percent of the respondents require the individual faculty member or requester to obtain permission to use materials under copyright, and that such duties do not burden the staff of the library reserve operation.

**Summary**

Since photocopying customarily associated with library reserve room operations was not directly treated in the copyright legislation (Public Law 94-553) that became effective on January 1, 1978, there has been considerable doubt, differences in interpretation, and lack of consensus among academic library administrators as to the intent of the law in this area. The language of section 107 is succinct, specific, and liberal in permitting fair use photocopying in support of scholarship and research, including multiple copies for classroom use, which would appear to offer no barrier to reasonable photocopying of library materials to be placed in the reserve room by faculty for student use as part of classroom instruction. Additional “Guidelines for Classroom Copying,” designed to narrow the interpretation of scholarly fair use photocopying to the benefit of lobbying copyright owners, were developed by a group of owners and academic users as part of the legislative process, and have attained a quasi-legal status in the minds of many, including some library administrators, although respected legal scholars have maintained that clear statutory language should generally stand on its own.

Section 108 of the statute more narrowly and specifically treats library and archival photocopying associated with collection maintenance and routine library operations in support of public services, including interlibrary loan. Because faculty almost entirely dictate the contents of the reserve room, many academic library administrators view photocopying as an extension of the classroom. They believe that photocopying in connection with reserve room operations results from and supports classroom instruction, and therefore should come under either the liberal fair use language of section 107 or the tighter stipulations of the classroom copying guidelines.

A sample of thirty-seven Virginia academic libraries surveyed in early 1981 indicated a wide spectrum of interpretation regarding reserve room photocopying parameters permitted by the statute. All but one allowed at least one fair use copy of library or faculty-owned materials to be placed on reserve by instructors without the permission of copyright owners.

Eleven of the thirty-seven placed few or no restrictions on the number of photocopies for reserve use. Three followed the guidelines for classroom copying, restricting the number of copies to two or three. Twenty-two accepted one fair use copy plus additional copies with copyright owners’ permission, but in only eight of these did the library staff take the responsibility for seeking permission for additional copies. The other fourteen generally left the responsibility for copyright clearance beyond one fair use copy up to the faculty member. One library allowed only original collection materials to be placed on reserve except for one copy to protect materials. Most libraries do not restrict reserve room copies to only one academic term.

**References**


9. Ibid., p.128.

BIBLIOGRAPHY


APPENDIX A
ANALYSIS OF RESPONSES BY QUESTION

1. What guidelines has your library utilized in developing reserve room policy?

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<thead>
<tr>
<th>Responses</th>
<th>% of Returns</th>
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<td>a. 29</td>
<td>78.4%</td>
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<td>b. 22</td>
<td>59.5%</td>
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<td>c. 17</td>
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<td>d. 5</td>
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2. Are you aware of anything published in congressional hearings or reports that sheds additional light on reserve operations?

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<td>a. 5.7%</td>
<td>Yes</td>
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<td>b. 94.6%</td>
<td>No</td>
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3. How many copies does your reserve room accept?

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<tbody>
<tr>
<td>a. 21.6%</td>
<td>One fair use copy without permission only</td>
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<td>b. 35.1%</td>
<td>One fair use copy without permission and multiple copies with permission</td>
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<td>c. 21.6%</td>
<td>One fair use copy and multiple copies without permission</td>
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<td>d. 27.0%</td>
<td>Other arrangements</td>
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4. Is your library restricting single and/or multiple copies of copyrighted material placed on reserve to one term use only?

Responses % of Returns
a. 9 24.3% Yes
b. 28 75.7% No

5. Who takes responsibility to seek permission for copying when necessary?

Responses % of Returns
a. 8 21.6% The library staff
b. 28 75.7% Individual requestor
c. 0 0% Other

6. When seeking permission, what form does this take?

Responses % of Returns
a. 1 2.7% Blanket permission
b. 7 18.9% Form letter to publisher and/or author
c. 1 2.7% Other
d. 3 8.1% Copyright Clearance Center
e. 16 43.2% Individually prepared permission letter

7. Must material copied for reserve be something already in your library’s collection?

Responses % of Returns
a. 2 5.5% Yes
b. 35 94.6% No

8. Do you plan to respond to the government’s request for information concerning effects of the new copyright law when it is revised by Congress in 1982?

Responses % of Returns
a. 9 24.3% Yes
b. 22 59.5% No

Responses Population 37 = 84.1%

APPENDIX B

QUESTION ANALYSIS BY INDIVIDUAL INSTITUTION

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84.1% RETURN (37/44)

B = Bachelor’s or 4 year institution; C = Community or 2 year college; D = Doctoral institution; M = Master’s or 5th year institution; 2 = Other 2 year.
96 pages full of furniture

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Letters

To the Editor:

In "Perceptions by Educators and Administrators of the Ranking of Library School Programs" (C&RL, May 1981), Herbert S. White mentions only in passing "vociferous objection to perception ranking studies" (p.192). But he provides no bibliographical citations to this body of literature as he does for articles favorable to such surveys. Critically interested readers can consult Serge Lang's The File (New York: Spring, 1981), especially Part Eleven, which criticizes the Ladd-Lipset survey of rankings of academic departments cited by Dean White.

On the question of response levels from library administrators, Dean White fails to indicate by whom "56.2 percent is considered an acceptable level of response" (p.195). In view of the continuing controversy over such questions as what constitutes a representative sample (see especially William Kruskal's and Tore Dalenius' contributions to The File), it is unfortunate Dean White did not address these philosophical and methodological concerns more directly by at least making specific reference to the critics' publications, some of which were published before Lang's 1981 compilation.

Jeffry Larson, Humanities Bibliographer, Yale University Library, New Haven, Connecticut.

To the Editor:

Mr. Larson is certainly correct when he points out that my article fails to provide evidence for the scientific justification of perception ranking studies. However, this is precisely because no such justification was intended. The article went to some pains to point out that perception of quality is not synonymous with quality. External factors can cause programs to be rated higher or lower than they "deserve," and changes in ranking over time are probably more significant as indicators than the rankings themselves. The article argued further that no generally accepted technique for qualitative ranking had been developed, whether based on perception or on hard data. I stressed that perhaps justification for perceptions are not really to the point, since in academia perception of quality forms the basis of decisions by students, faculty members, and employers, as if those perceptions were proofs.

Given the certainty that perception rankings will continue to be done and will continue to be used, it was my intent simply to update and broaden data for the library education field, and to provide better perception data for those who are interested in such rankings. As expressed in the article, it is also my hope that an analysis of the characteristics shared by highly perceived programs can lead to the development of more specific qualitative requirements than are presently found in the general expressions of the accreditation standards.

Herbert S. White, Dean, School of Library and Information Science, Indiana University, Bloomington.

To the Editor:

Nancy John's review of my textbook, Introduction to Cataloging and Classification, which appeared in the September 1981 issue of College & Research Libraries, contains errors, misquotations, and misinterpretations. Since you may not have the book at hand, I will list and comment upon typical examples of Ms. John's comments, quoting first from the review, and then from that portion of my text to which Ms. John refers.

John: "The ISBDs are referred to as manual (p.6)"

Downing, p.6: "Tendencies toward international standardization of cataloging codes and practices, as exemplified in manuals, the I.S.B.D.(M), (1974), I.S.B.D.(S) (1974) and I.S.B.D.(G), (1977) mean that future catalogers must remain aware of up-to-the-minute developments."

To the Editor:

Jeffry Larson's review of my article, "Perceptions by Educators and Administrators of the Ranking of Library School Programs," which appeared in the September 1981 issue of College & Research Libraries, contains errors, misquotations, and misinterpretations. Since you may not have the book at hand, I will list and comment upon typical examples of Ms. Larson's comments, quoting first from the review, and then from that portion of my text to which Ms. Larson refers.

Larson: "Mr. Larson is certainly correct when he points out that my article fails to provide evidence for the scientific justification of perception ranking studies. However, this is precisely because no such justification was intended. The article went to some pains to point out that perception of quality is not synonymous with quality. External factors can cause programs to be rated higher or lower than they "deserve," and changes in ranking over time are probably more significant as indicators than the rankings themselves. The article argued further that no generally accepted technique for qualitative ranking had been developed, whether based on perception or on hard data. I stressed that perhaps justification for perceptions are not really to the point, since in academia perception of quality forms the basis of decisions by students, faculty members, and employers, as if those perceptions were proofs.

Herbert S. White, Dean, School of Library and Information Science, Indiana University, Bloomington.

To the Editor:

Mr. Larson is certainly correct when he points out that my article fails to provide evidence for the scientific justification of perception ranking studies. However, this is precisely because no such justification was intended. The article went to some pains to point out that perception of quality is not synonymous with quality. External factors can cause programs to be rated higher or lower than they "deserve," and changes in ranking over time are probably more significant as indicators than the rankings themselves. The article argued further that no generally accepted technique for qualitative ranking had been developed, whether based on perception or on hard data. I stressed that perhaps justification for perceptions are not really to the point, since in academia perception of quality forms the basis of decisions by students, faculty members, and employers, as if those perceptions were proofs.

Given the certainty that perception rankings will continue to be done and will continue to be used, it was my intent simply to update and broaden data for the library education field, and to provide better perception data for those who are interested in such rankings. As expressed in the article, it is also my hope that an analysis of the characteristics shared by highly perceived programs can lead to the development of more specific qualitative requirements than are presently found in the general expressions of the accreditation standards.

Herbert S. White, Dean, School of Library and Information Science, Indiana University, Bloomington.
To refer to explanatory brochures as "manuals" is not to say that the codes are "manual." A major point of my explanation of ISBD was to discuss the role of automation in national and international cataloging.

John: "Two invalid Library of Congress subject headings are given: ARCHITECTURE IN ALBANIA and ALBANIA—ARCHITECTURE (p.55)"

Downing, p.55: "One particular instance of the failure to assign a necessary second heading occurs when a reversal of the word order may allow retrieval from an appropriate second point of view. For example, a book on architecture in Albania can be analyzed both as Architecture in Albania or Albania—Architecture"

At no point in my discussion of complementary subject headings do I state that the examples used are valid headings in any formal list.

John: (Speaking of my discussion of non-book materials, p.166–167) "First is the suggestion that the main entry and the statement of responsibility are always the same"

Downing, p.167: "The title main entry will occur much more often than for books and subsidiary contributionship to the 'creation' of the work is likely to be more extensive than for books . . . (examples given) The difficulty of pinning down 'authorship' for nonbook works may require a relatively lengthy statement of responsibility"

The point of the paragraph cited is that, since the most likely main entry for non-book materials is a title entry, careful attention must be paid to the statement of responsibility.

John: (Referring to "errors" in the appendix of exhibits) "Nonstandard dates in headings (p.240 ff.)."

There are no "pages 240 ff." in the text. The "nonstandard dates" alluded to were purposely included among the exhibits as guides to students confronted with the problem.

In view of the representative errors cited above, it is not surprising that Ms. John failed to mention any of the particular strengths of the text, such as the extended discussion of authority control comprising Chapter 3.

A problem arises in the dissemination of a rebuttal to a review such as Ms. John's. Readers of the original review, not having access to the text for verification, may be dissuaded from examining the text at all.

I should therefore appreciate any efforts you may wish to make to rectify this situation.—Mildred H. Downing, Assistant Professor, School of Library Science, The University of North Carolina at Chapel Hill.

To the Editor:

Ms. Downing suggests that she has found "typical examples of errors." In fact, two errors cited are typographical. The word "manuals" appeared in my original review (the ISBDs are international cataloging standards), and p.240ff. should be p.204ff., as should be clear from the correct citing of example numbers.

I stand by the rest of the review as written.—Nancy R. John, Assistant University Librarian, University of Illinois at Chicago Circle.
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BOOK REVIEWS


This volume is a tribute to the energy and persistence of two men—J. Franklin Jameson, its subject, and Victor Condos, Jr., its author. After a fifteen-year career as an architect and an officer in the Coast Artillery Reserve, author Condos earned a master's degree in history from the University of Pennsylvania. In 1942 he began his twenty-three-year career with the National Archives, where at the time of his retirement in 1965 he headed the Army and Navy branch. While engaging in an active professional life which included several organizations, Condos also pursued a doctorate at American University. In 1971, at age sixty-nine, he completed his dissertation and was awarded the Ph.D. This volume is an edited version of that dissertation, prepared posthumously for publication by James B. Rhoades, formerly Archivist of the United States.

Like Condos, J. Franklin Jameson had a long and active career as historian, author, and member of various professional organizations. The present volume focuses on one of these activities—his twenty-five-year campaign for establishment of a federal archives. Condos chronicles Jameson's efforts from 1901, when the American Historical Association passed its first resolution calling for a hall of records, to 1926, when public law 281 authorized erection of various structures, including an archives building. It is a saga of vision thwarted by bureaucracy, of federal needs in conflict with local agendas. It is also a tale of one man's intelligence, commitment, and political acumen.

This volume makes two significant contributions. First, it fills an important gap in the literature of American archives. The two major histories of the National Archives—H. G. Jones' *Records of a Nation* and Donald R. McCoy's *National Archives*—acknowledge
Jameson's contribution to the establishment of the institution. Indeed, Jones calls Jameson the "most influential single force in the drive for a national archives." Neither volume, however, chronicles the years of work and many disappointments that Jameson endured before his dream was realized. By filling out the record, Gondos' study documents the basis for Jones' assessment and serves as a fitting tribute to Jameson's tireless efforts.

Second, Gondos' study is important because it reminds us that the National Archives was born of the political process. The long and difficult struggle to establish the Archives drew support initially from only a small portion of the citizenry. Had Jameson and his colleagues not engaged the active support of historical and patriotic groups, in particular the American Legion, one wonders if the Archives would ever have been established. As Gondos noted, "it was not until the rise of the American Legion, able to claim thousands of votes in each congressional district, that any organization was in a position to compel a congressman to think twice about failing to support the archival demand."

In this current period of political and fiscal assault by the Reagan administration, is there not need for a new coalition of citizen groups, commanding thousands of votes, to save the institution for which Jameson worked so long and hard? Those of us who would take up Jameson's legacy will, I believe, learn much from Victor Gondos' thoroughly researched, meticulously written study.—Nancy E. Peace, Simmons College, Boston, Massachusetts.


Franklin D. Roosevelt once observed that there were few businesses more intimately interwoven with the national fabric than publishing houses. Gerard Wolfe must have had that statement in mind when he wrote this book, because throughout it he strives to relate events in the history of the House of Appleton to contemporary circumstances in the development of the nation.

Appleton's of course is one of the most distinguished names in the history of the American book industry. It was in 1825 that Yankee merchant Daniel Appleton opened his dry goods store in New York City with more than half of its floor space set aside for the retail marketing of books. Only six years later, however, he forsook all other selling in favor
of the book trade, and in 1831 also, his imprint first appeared in a tiny religious work entitled *Crumbs from the Master's Table*.

Wolfe's book recounts faithfully the chronicles of the Appleton firm from those modest beginnings through the next 150 years. From religious books the firm went on to children's books, Spanish-language books, medical books, subscription books, fiction, science books, periodicals, atlases and travel guides, history and biography, and virtually all other imaginable aspects of trade publishing.

*The House of Appleton* proceeds not unlike a picaresque novel itself. The saga is told of the many members of the family who guided the firm through the period of its greatest ascendency (between 1850 and 1900), and the circumstances that led to its latter-day transmogrification as a conglomerate subsidiary issuing books solely in the fields of health and nursing are related.

The book is graciously written and easy—even fun—to read. Its breezy, journalistic style captures quite effectively the sense of hustle and bustle that have pervaded the New York book trade, especially through the middle years of the nineteenth century. The gossip and fashions, as well as the political news and economic fortunes of the times, are reviewed for each period in a lively panorama of social history.

Some will feel that the book sometimes departs a bit far from its central theme, however. For example, only about 15 percent of the chapter on the Civil War has, except by inference, even the remotest relationship either to Appleton's or to the book trade.

The book also tends to superficiality. The chronicle is all here, with myriad detail about every member of the firm, every author it published, every title on its lists, but there is a dearth of interpretation. The author nowhere either asks or attempts to answer the question "What does it all mean?" In that sense, the book is less a history than it is a record—albeit a full, well written, useful, and much needed record—of one of America's great imprints.—David Kaser, Indiana University, Bloomington.


Sociologists Cline and Sinnott use a comparative case study methodology to analyze collection development in relation to the structure and function of complex organizations and in relation to resource allocation theory. This is not a book for readers interested in the "how to" of collection development, but is for the reader who seeks a theoretical framework for and detailed analyses of the fund allocation and item selection aspects of collection development.

The authors collected data related to the organizational locus and collection development practices of seven academic libraries: Earlham College, Stockton State College, Brown University, Pennsylvania State University, University of North Carolina (Chapel Hill), University of Wisconsin (Madison), and University of California (Los Angeles). The data were then analyzed with respect to the planning for and implementation of collection development.

The analysis of the distribution of acquisitions funds spent by vendor, librarian, and faculty at each of these groups in the collection development process is especially interesting. In addition the work includes the more traditional analyses of expenditures by format and broad discipline.

The summary tables and detailed discussions of the planning and implementation process, both within specific institutions and in comparative summaries, document and highlight the wide variability of collection development practices, something most collection development librarians are well aware of. The strength of this book lies in the authors' collection of comparable data and placement of the information in a broad theoretical context, something heretofore sorely lacking in the library literature. The mobility of libraries to relate collection development policy statements to actual expenditures is interpreted in relation to the complex reporting responsibilities of the library within an institution and in relation to social change.

The only weakness of the book lies in the final chapter, where the authors go beyond their data collection and analyses and discuss several areas of librarianship that they perceive as important to change and adaptation in academic libraries; namely, library instruction, special collections, microforms,
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Scholars have long relied on Charles Evans' American Bibliography and Joseph Sabin's Bibliotheca Americana for bibliographical and historical information about the Americas. In spite of the excellencies of these works, however, they have recognized limitations for research. The usefulness of Sabin's work for investigating a particular year or decade, for example, is virtually nil because of its dictionary arrangement by name and not by date. Evans' work, on the other hand, does have a chronological arrangement, but it also inconveniences the researcher by only recording imprints of the British North American continent.

These limitations of chronology and geography have now been bridged in European Americana. The name of the editor, John Alden, may well become as familiar as those of Sabin and Evans. And rightly so, for this first volume signals the appearance of an excellent, major reference work. Even the most casual examination of the book reveals several potentials for research. This volume, for example, covers the years from 1493 through 1600, with future volumes to include works published through 1776, thereby including all colonial history of the United States. The book also adds many "unknown" works about America for "of the works thus described, some 4300 in number, only a fourth appear already in ‘Sabin’" (p.xvii). The implications for historical studies of this startling increase of "newly available" primary and library research. Although thought-provoking, there is little in the data gathered that support their analyses of the importance of these topics to collection development.

This is a well-organized work and should provide considerable insights to the thoughtful collection development librarian or library director. In addition it should be read by planning officers and administrative officials having to deal with library budgets in academic institutions.—Barbara A. Rice, State Library Cultural Center, Albany, New York.
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Alden has an acute understanding of what the scholar requires to carry out research. He not only includes the usual "author, title and subject index," he also anticipates future research by including a "geographical index of printers" and "booksellers & their publications" as well as an "alphabetical index of printers" and "booksellers & their geographical locations." These compilations are necessary for the presently evolving study of printing and publishing history commonly called l'histoire du livre.

Individual entries reflect the same historical tendency as the volume "does not purport to be a 'bibliography' but to the contrary a 'guide' for those seeking what a contemporary reader may have encountered at a given period of time" (p.xv). Full names are provided. Titles are abbreviated, yet they have not been made unintelligible, which is no easy task. Imprint information is limited to place, single publisher or printer, and date. Especially useful for the historian is the inclusion of book sizes, both the number of pages or leaves, and the physical format, as well as whether there are maps and illustrations. One small but highly useful contribution is in entry notation. Each entry is numbered (the first entry for each year begins with number 1) with both its sequential and its chronological number so that entry "564/16," for example, refers to Charles Estienne's L'agriculture et maison rustique, which is the sixteenth entry for the year 1564. The outstanding feature of the entries is the multitude of critical annotations describing the subject of books. This same Estienne book tells the reader that "included are refs to American plants."

Alden's historical focus does not mean that bibliographical features are slighted all that much as abundant bibliographical information is included. As with the historical annotations, there is one bibliographical feature that stands out: that is, a later edition of a work is identified as such and the date and place of the first edition are also noted. This information is complemented by a list of all editions of a particular work in the index.

All in all, European Americana promises to be one of the important reference books in the long tradition of outstanding historical and bibliographical scholarship on the Americas. It is a required book for all research libraries and scholars studying early
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American history.—Paul S. Koda, University of North Carolina at Chapel Hill.


Directed to managers and would-be practitioners, this book provides an introduction to online searching strictly for bibliographic references. It reflects the four authors’ British affiliations, describing both European as well as North American activities.

The text is almost evenly divided between ten chapters of narrative and eight appendixes. The chapters that provide background information about hardware, the structuring of files, the intellectual concepts of analyzing questions, and search strategy to retrieve references online are particularly good, giving concise accounts of details. Less space is devoted to discussion of related personnel issues surrounding online search services, although three chapters address such topics as, the role of the intermediary, management aspects, and education for searchers.

The first appendix provides a fairly detailed “check list for search preparation and search strategy” aimed primarily toward the search intermediary. Each of five other appendixes summarizations, in tabular format, details of the major search systems of Blaise, ESA-IRS, Infoline, Lockheed/DIALOG, and SDC/ORBIT. The last appendix is about Euronet, a European telecommunication network connecting numerous online service systems, including most described in the earlier appendixes. The book ends with an author and subject index.

In a textbook fashion, numbered subdivisions of chapters, a thorough index and selected citations at the conclusion of most chapters offer the reader easy reference to specific information as well as leads for further study. The text itself is well written, useful both for a novice to the subject and for an experienced searcher who seeks a review or clarification of a particular question. The occasionally used jargon is generally defined in comprehensible terms and descriptions of technical topics are understandable.

The authors repeatedly warn the reader to seek additional sources for more current data, and cite several sources that may be
used. However, two noticeable omissions might be considered, especially for reviews of databases: Database Review and the "Sources" section of RQ.

A good contribution to the small group of basic introductions to online searching, this is a recommended text for general training or for reference use, particularly for the British perspective. It does not however replace vendor or database manuals for those conducting specific online searches.—Danuta A. Nitecki, University of Illinois at Urbana-Champaign.


This work is "designed to accompany AACR2." It is intended for catalogers to use as a reference when working with the more specialized types of nonbook material and is not a "stand alone" guide for media cataloging.

Examples and notes on the cataloging of nonmusic sound recordings, motion pictures and video recordings, graphic materials, realia, kits, and original microform publications are presented in the order in which their cataloging rules are found in AACR2. Cataloging notes provide the corresponding AACR2 rule number, making it easy to refer from the code to the manual and vice versa. Each example is illustrated by a photograph of the item, a particularly good idea that enables the cataloger to see the material under discussion. Although the examples are few in number, they are well chosen and provide a good sampling of the more unusual media problems a cataloger may encounter, such as cannonballs and unique audio formats.

The most frequently encountered types of nonbook material, music sound recordings and microform reproductions of previously published material are not discussed in this volume. This would appear to be a major weakness. The author may believe that catalogers are more accustomed to dealing with this type of material, and the problems encountered will only be with the more esoteric types of material—with which this book deals. But, reference should have been made...
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to other sources explaining additional types of media cataloging. A bibliography of readings or additional sources is not provided.

A most valuable feature of this manual is the second appendix where the previously presented examples are shown in MARC tagged format. Few other tools provide this type of example and many catalogers will welcome this feature.

The book also contains an overview of problems in the cataloging, processing, and storage of nonbook materials, as well as a description of procedures in use at Mankato State University, where its author is located.

The manual will be most useful to the cataloger unfamiliar with media cataloging, the library just beginning to acquire media in many varied formats, and the student. The reader will find the work a good, basic introduction to media cataloging and the problems it may present. Library school professors should look closely at this title for possible adoption as a text for cataloging classes.—Andrew Lisowski, George Washington University Library, Judith A. Sessions, Mt. Vernon College Library, Washington, D.C.


To any librarian who has been engaged in the organization and publication of a massive catalog, Barbara McCrimmon’s Power, Politics and Print suggests striking historical parallels to his or her own past labor. To American librarians it will also be a revealing demonstration of the characteristically close-working relations between the highest levels of the government of the United Kingdom and the nation’s principal cultural institutions, such as the British Museum and the British Library.

I had much to do with the publication of the National Union Catalog: Pre-1956 Imprints in this country and something to do with “GK 3,” the general catalog of the British Museum Library (since 1972 a part of the newly formed British Library), published between 1959 and 1966. From the background of these experiences I have read this book with special appreciation for the clarity of its presentation of the long history of the production of “GK 1,” the first general catalog of that great library.

The author has described vividly the protracted task of publishing “GK 1,” which was finally completed in 1900 after decades of struggle. Its 374 volumes containing several million entries comprised by far the most ambitious bibliographic publication ever attempted up to that time. Because it opened the holdings of one of the world’s greatest research libraries to scholars everywhere, it was a monumental British contribution to the world of learning.

Though “the British literary public clamored for a printed catalogue of the British Museum library” through much of the nineteenth century, it was not until 1881 that actual printing commenced. This critical point in the story was the culmination of four decades of planning and of “frustration and contention, of small steady victories over inertia, and of a final triumph that came too late for celebration.” Principal credit for the dogged persistence and occasional resort to subterfuge and artful stratagem — without which the enterprise could never have succeeded — goes to Sir Edward Bond, principal librarian (i.e., director) of the British Museum, and Richard Garnett, keeper of printed books and general editor of the catalog. Dr. McCrimmon describes their determined efforts in a fascinating tale.

One of the main attractions of Power, Politics, and Print is the skillful way the author places the drama of the catalog’s evolution in the political and administrative context of the period. The parts played, for instance, by Gladstone and Disraeli, both long-time trustees of the museum, and repeatedly prime ministers and chancellors of the Exchequer, are admirably developed. Dr. McCrimmon makes a lively tale of the endless skirmishing among the librarians, between Edward Bond and the trustees, and between the trustees and treasury officials upon whom the museum depended for its financial support. Although all this happened a century ago, it will be engrossing reading for present-day librarians who work with faculties, university administrators, committees of all shapes and sizes, government officials, and other individuals of every variety.

This entertaining book is effectively written, refreshingly free of jargon, and uncom-
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*Stack Management* is a fine example of clear, concise writing and good organization, representing sound thinking and reasoned advice. It is an excellent guide for the new stack manager and a handy reference tool for the experienced librarian. In a quick consultation, one can discover that 86 percent full is considered maximum stack capacity, learn the advantages and disadvantages of several types of compact shelving, and determine how best to shelve kits and games.

Hubbard has revised an earlier work by W. H. Jesse called *Shelf Work in Libraries* (1952), and this new edition reflects and stresses the current concern with access and availability of collections. Other contemporary issues such as problems of security and the use of detection systems, online circulation systems, and the increasing need for remote storage facilities are addressed at appropriate points in the new text. There are two minor points which I would draw attention to regarding the revision, however: one is the occasional use of the term "shelf worker" instead of the more current "shelver" or even "stack attendant" or "stacker"; and the second is a lack of any mention of physical access for the handicapped user and how that affects stack aisles and stack placement.

The book is divided into eight chapters and proceeds logically from the broadest aspect, collection management (shelf arrangement, open or closed stacks, and shelving of different types of materials) through successive chapters on more specific topics. These topics are sorting and shelving routines, moving and shifting books (everything from how to plan space requirements to how to shelve), shelving types and arrangements (including lighting, book trucks and signs), and weeding, storing, and paging, with particular emphasis on the desirability of storage collections and how to plan and select for them. Hubbard’s good sense and directness are particularly evident in this comment on off-site storage facilities: "Regardless of the frequency of trips, the schedule must be maintained if the service is to retain its credibility with patrons. Nothing destroys confidence in a library faster than broken promises through fluctuating schedules" (p.67). The remaining chapters deal with how to handle, clean, and repair books, missing books (how to search and inventory them), and finally some practical words on supervising stack personnel.

There is an appendix of basic information on using sampling to collect statistics on the quantity of work performed, book availability, and collection characteristics. The book is indexed. A comprehensive bibliography at the end, however, or all chapter references grouped at the conclusion of the individual chapters would have been preferable to the scattered footnotes throughout. *Stack Management* is definitely useful and a worthwhile investment.—Jean W. Farrington, University of Pennsylvania, Philadelphia.


John P. Dessauer’s book is a superb exposition of the workings of the American book publishing industry. Dessauer describes in successive chapters how books are created, manufactured, marketed, stored, and delivered. He also goes into some detail on the financing, planning, and management of book publishing enterprises.

Dessauer presently serves as chief statistician for the Book Industry Study Group (formed in 1976 as a research organization for the publishing community), and this second edition incorporates much information from the group. Although the book has the same structure as the previous edition (e.g.,
same chapters in the same order), the work has been completely updated to 1980. Appropriately, the new edition is also much more handsome, with wider margins, clearer headings, and easier to read charts and diagrams.

In his overview of the history and organization of the book industry, the author takes up the questions which arise from mergers, unauthorized copying, and censorship. He also describes the various divisions of publishing and discusses its dual role as a business and a cultural activity. He writes that the greatest single challenge to American book publishing "is simply to reach effectively the people willing and anxious to buy books." He also notes that the industry is beginning to overcome its inertia of the past, as factions are joining together to act as a publishing "community" in dealing with problems. In particular, Dessauer mentions participation of publishers in the Association of American Publishers (AAP), the American National Standards Institute (ANSI), and the Book Industry Study Group. He cites inadequate distribution as a common difficulty which book publishers must overcome through cooperation of publishers and education of wholesalers.

In his chapter on how books are created, Dessauer makes a strong case for reducing book production, and complains of "intuitive" decisions to publish without adequate financial planning. He adds that faulty editorial judgment, ineffectual marketing efforts, and a "buckshot" approach to publishing are also major contributing factors to the high failure rate among trade books.

Another serious problem that Dessauer explores is that of paperback overproduction: "In 1980 mass market publishers produced some 5,100 new releases, or an average of 423 titles monthly, according to CPDA News. Even some of the better outlets cannot accommodate even one fourth of such releases . . . ." He indicates that approximately one half of all paperbacks shipped to wholesalers remain unsold.

In the manufacturing chapter, the author is critical of the lack of standardization in the industry, but closes on a note of optimism, indicating that the technology for books "on demand" is now available. In the marketing chapter, he points out the need for publishers
to incorporate more automated procedures in distribution of their titles. In discussing how books are stored and delivered, Dessauer believes too many publishers are working independently and sees no effort on their part to consolidate operations. A system of regional, nonprofit distribution centers is suggested.

In the final chapter on financing, planning, and managing publishing companies, the author explains how operating statements and balance sheets work. He also shows how it is possible for a more expensive book to sell sufficient copies to make it more profitable than a moderately or inexpensively priced volume. He concludes: "More sales and larger printings are obviously not always the answer, nor are lower prices and more aggressive marketing. More important than such conventional techniques may be the accurate definition of market and the choice of the optimal means to reach it." Dessauer urges more broad based training programs for employees and endorses improving the quality of management in publishing. He supports both short- and long-range forecasting, arguing that testing the impact of future titles with alternative scenarios will help publishers become more responsive to the market.

The author is optimistic about the survival of the book and forecasts continuing growth of book consumers. Publishers still need to solve distribution problems, improve and increase marketing, and be more selective in publishing to avoid current "overproduction," he believes.

The revised edition of this book is the most current basic text on the economics of publishing available. It contains a twelve-page glossary of publishing terms and a short "Bibliographic Note" containing twelve citations (eleven in the previous edition) plus mention of three valuable trade publications.

Although I would like to see some improvements in the third edition, e.g., an expanded bibliography, some words on paper preservation, more discussion of noted publishers, and provision of examples from *Book Publishing: What It Is, What It Does* to illustrate his chapter on the manufacture of books, I strongly recommend that academic librarians, library school students, and students who wish to know more about publishing purchase this title. Practicing librarians should be more familiar than they are with publishing, its practices and terminology. Dessauer's book fills this need.—*Fred C. Lynden, Brown University, Providence, Rhode Island.*

**ABSTRACTS**

The following abstracts are based on those prepared by the ERIC Clearinghouse of Information Resources, School of Education, Syracuse University.

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Further information on ordering documents and on current postage charges may be obtained from a recent issue of *Resources in Education.*


This review of educational information resources supported by the federal government, state and local taxes, and professional associations, provides a summary of the more active information centers along with the titles of some handbooks that can guide the user to additional resources. It also discusses who uses information and how, targeting of information to users, and the complexities of the dissemination process, concluding with some thoughts for future directions in information resource management for the educational community.


These proceedings of the 1979 White House Conference on Library and Information Services contain resolutions which are the basis for the proposed National Library and Information Services Program and for new national legislation. The resolutions reflect; (1) the need to reshape library and
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information services in order to make them more responsive to the people served, (2) the call for local control of services, and (3) the demand for economy and accountability in public agencies. Transcripts of speeches, open hearings, and the joint congressional hearing include the following:

"Personal Needs" by Clara S. Jones; "Lifelong Learning" by Francis Keppel; "Organizations and the Professions" by Herbert D. Benington; "Governing Society" by Major R. Owens; and "International Cooperation and Understanding" by Bernard Ostry. Also presented are conference highlights, an outline of the proposed national program, an outline of proposed national legislation, an overview of the conference, and a list of participants. Appendixes include the conference rules, resolutions not passed, the conference agenda, statistics, "Conference via Computer" by Elaine B. Kerr, and a list of conference publications and media.

Videotape as an Aid to Bibliographic Instruction. By Janet Key and Thomas A. Tollman. Paper presented at the Spring Meeting of the Nebraska Library Association, Wayne, Nebraska, April 23, 1981. 10p. ED 206 319. MF—$0.83. PC—$1.82.

This report describes the use of videotaped lectures in the undergraduate library instruction program at the University of Nebraska at Omaha Library, outlines the structure of the program, and reviews the process of producing library-specific videotapes. The results of an informal survey to compare the videotape method of presentation with a slide/lecture method are reported.


Legal questions, raised by recent developments in computerized networks and relating to censorship, liability, responsibility and other topics, were explored by means of a questionnaire sent to a selected group of librarians, network personnel, and others. Designed to collect information about existing laws and current problems, the questionnaire elicited opinions that suggest that (1) networks cannot refuse questionable titles, (2) authors or publishers cannot demand the exclusion of titles from the database, (3) the networks probably cannot refuse "insignificant" titles, (4) networks probably cannot refuse membership without legitimate reasons, and (5) all parties have due process rights in dealing with parent networks. Limited amount of experience and the complete lack of litigation in this area, however, leave the specific questions unanswered. A thirty-item bibliography and the questionnaire are appended.


Intended for librarians concerned with the structure and administration of a collection of curriculum materials within the framework of an academic library, this report describes the cataloging procedures of the curriculum laboratory at Tufts University. It discusses the use of Dewey decimal classification, treatment of nonbook materials, retrieval of library materials, exceptions to standard cataloging practice, the value of a reorganization to a conventional card catalog and classification scheme, the organization of the children's literature collection, and the role of the curriculum laboratory within the academic library framework.


Conducted to review the present status of computerized bibliographic centers in Canada and to report on the most effective means of promoting computerized library network development in that country, this study summary of the findings of seven subsidies (1) describes the salient features of twenty Canadian and United States centers; (2) reviews major options relating to the development of a computerized national location service system, as well as technological and cost trends bearing on library and information services networking in Canada; (3) summarizes the principal findings and conclusions of three studies dealing with more general aspects of network management and with the funding of network related research and development in Canada; and (4) summarizes the report compiled from externally submitted briefs concerning the role of the National Library of Canada.

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"It is up-to-date, concise, authoritative, and well documented, with excellent visual resources." Library Journal, September 1, 1981
Discussions summarized in this report focused on the relationships between individual libraries and the bibliographic utilities, as well as the options available to the library and information communities for preparing, sharing, and gaining access to machine-readable records. Issues discussed fall into three categories: (1) ownership and distribution of bibliographic data, (2) relationships among members of the total information community, and (3) flow of bibliographic data at the international level. Highlights of group discussions and pertinent recommendations are presented.


The two purposes of this report are to present concrete proposals related to the need for the National Library of Canada to facilitate the development of nationwide bibliographic and associated communications networks, and to outline the relevant network concepts assumed in framing the nine recommendations and the related implementation proposals that are presented. These proposals are intended to serve as an early practical step towards a wider and more complete nationwide library and information network in the longer term. Notes and references are provided for the three major chapters, as well as an implementation chart with timelines and a network flowchart. Discussion of long-term trends and needs for Canadian library and information networking and notes on European and U.S. arrangements to promote nationwide and community-wide networking are appended.


A controlled user test of an experimental viewdata system, Channel 2000, was conducted by OCLC in Columbus, Ohio, to investigate technical, business, market, library and social science issues involved in electronic delivery of information using videotext technology. The three part report includes a review of various facets of new consumer electronic information services, details of the Channel 2000 project, and the findings and conclusions derived from this study of a system that transmits textual and graphic data from a host.
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computer to modified television receivers in the user's households via commercial telephone or cable transmission facilities. Test planning and selection methods, training of users, descriptions of services and specialized features offered, and the equipment (including television adapters, computers, and software) are presented in detail, as are the research procedures concerned with sampling, data collection, and evaluation. Conclusions about viewdata are concerned with its form for the future, its socioeconomic influence, and its impact on libraries.


Information is provided on technological and social trends as background for a workshop designed to heighten the consciousness of workers in community information systems. Initially, the basic terminology is considered in its implications for an integrated perspective of community information systems, with particular attention given to the meaning of isolation within a community context. The dynamics of information processes and their relationships to societal groupings are also discussed. Secondly, new technologies such as View-data, BOM (Brainstorming on Microfiche), and computer conferencing are considered as they impact on community computer information systems, and questions posed by mainstream media and databases and their alternatives are discussed in respect to the national or international linkages they may provide. In the final section, a number of questions are asked dealing with the implications of community information systems for both individuals and societies as a whole.

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books are also a valuable aid in the creation of library study guides for specific college courses, allowing analysis of course syllabi to reveal terminology, ideas, and instructions that can be converted to Library of Congress subject headings. Finally, they provide an anticipatory reference aid by which terms that describe a subject field can be assembled in advance.

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