COLLEGE & RESEARCH LIBRARIES

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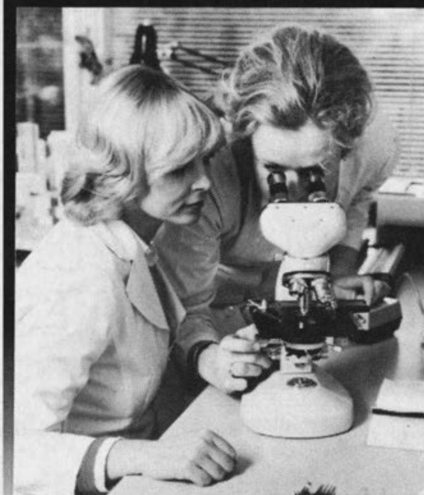

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Editorial

More Alternatives for Scholarly Publishing

In the March editorial, I discussed resource sharing as a possible alternative to rising serials prices. I now offer two other alternatives: a revised balance between quantity and quality as criteria for judgment in the academy and a redesign of scholarly publishing.

Knowledge expands. In response, journal markets have become increasingly more specialized. Increases in pages, twigs from existing titles, entirely new titles, and additional issues are legitimate sources of price increases. Yet many believe that existing systems encourage and reward the proliferation of knowledge by dividing it into the smallest publishable units. College and university administrators—and I include myself in their number—find quantity easier to judge than quality. Yet the clear result of that comfortable attitude is more articles in more serials at a greater cost, and the misunderstanding discussed in this issue's letters to the editor seems a likely, if not natural, consequence of the emphasis on quantity.

Quality should reign. A recent revision of National Science Foundation grant proposal requirements requests a list of up to five most relevant and five additional publications in place of the usual complete list. This change would emphasize quality in the merit review process. Similarly, Harvard Medical School now allows promotion to professor to be judged on no more than ten papers, associate professor on seven, and assistant on five.[1] Excellence is to take precedence over numbers. These initiatives toward quality as a more important criterion than quantity offer hope.

The academy should publish. The advent of electronic publishing offers hope for restructuring scholarly publishing. Currently, university faculty are the primary authors of scholarly articles. Especially in the sciences, government funding supports the research reported in these articles. However, the articles themselves are exported to foreign publishers, who sell them back to the originating academic institutions and their libraries at a substantial premium. While the history of this arrangement is reasonable, its continuation is not. In the last issue of *C&RL*, Paul Metz and Paul Gherman described the establishment of a corporation of scholarly publishing as an alternative.

Electronics simplify. The expensive typesetting equipment and the attendant—poorly paid—but expert operators are rapidly ceding to electronic publication systems. The advent of relatively inexpensive desktop publishing, with its ability to support a variety of typefaces and character sets, makes it possible for colleges, universities, and societies to take up again their responsibilities for print journals. Even more exciting is the prospect that many journals and even books will be published electronically. As knowledge becomes more and more specialized, many kinds of resources will be saved. Only the subspecialist will download or print out an article in the subspecialty, whereas currently such articles are delivered to all, regardless of interest.

Actions count. Librarians must actively work toward adopting these solutions. Talk to college and university colleagues and administrators about the consequences of quantity over quality as a criterion. Tie those concerns into your presentations about the need for more serials monies. Discuss the possibilities of electronic publication and prepare for its acceptance as legitimate credit in academia. Through action, hopes can turn into realities.

GLORIANA ST. CLAIR

REFERENCE

1. Ann Okerson, "NSF Grant Proposal Requirement Revised," *ARL Newsletter* 154:1–2 (Jan. 4, 1991).

* * *

College & Research Libraries is running a series about the current serials crisis. The series includes a March article by Kenneth Marks, Steven Nielsen, Craig Petersen, and Peter Wagner, a May article by Eldred Smith, a July article by Paul Metz and Paul Gherman, a September article by Ann Okerson, and a November panel of commentators.

IN FORTHCOMING ISSUES OF *COLLEGE & RESEARCH LIBRARIES*

Librarians' Satisfaction with Faculty Status
by Marjorie A. Benedict

The Library as a Marketplace of Ideas
by Ronald J. Heckart

Academic Librarians and the Library and Information Science Monograph: An Exploratory Study by Peter Hernon

Automation in East Asian Libraries in the United States: A Review and Assessment
by Sarah Su-erh Elman

Assessment of Learning Outcomes: A Measure of Progress in Library Literacy
by Arlene Greer, Lee Weston, and Mary Alm

Citations in Hypermedia: Maintaining Critical Links
by Corinne Jörgensen and Peter Jörgensen

Research Notes

Keyword Searching in an Online Public Access Catalog: Characteristics of Users and Nonusers by Pat Ensor

The Role of Libraries in American Indian Tribal College Development

Cheryl Duran

This paper presents a model for assessing the role libraries play in meeting the institutional goals and objectives of the American Indian tribal colleges. The Carnegie Report entitled Tribal Colleges: Shaping the Future of Native America *serves as the departure point for this assessment. In analyzing the library's role, the paper applies to tribal colleges an organizational development model constructed by Eric G. Flamholtz. The model identifies key developmental tasks associated with four stages of organizational growth: (1) new venture; (2) expansion; (3) professionalizing; and (4) consolidation. The analysis considers parallels between the tribal colleges' tasks and the libraries' tasks. Application of the development model suggests a set of hypotheses that frame the role of the library in meeting the institutional goals and objectives of the colleges. The library-related hypotheses consider the three unique tribal college goals: (1) preserving tribal culture; (2) enhancing community economic opportunity; and (3) improving health care. The next phase of this investigation will consist of extensive data gathering from the twenty-four tribal colleges to test the hypotheses identified in this paper and to generate additional hypotheses and research in the area of tribal college libraries.*

This study assesses the role of the library in meeting the goals and institutional objectives of American Indian tribal colleges. There has been nominal discussion of the status of tribal colleges in the general higher education literature and virtually no discussion of tribal college libraries in the library and information science literature. I will present an overview of tribal colleges, identify their objectives, and then consider the fulfillment of these objectives by applying an organizational development model to the tribal colleges. Finally, from this model I will derive a set of hypotheses that consider the contribution of library and information resources to meeting these institutional objectives. Based on the hypotheses formulated in this paper, future research will include an extensive longitudinal study on the role of libraries in tribal college development. A focus group drawn from the tribal college presidents perceives these hypotheses as relevant.

THE DEVELOPMENT OF THE TRIBAL COLLEGE

The development of American Indian tribal colleges represents the determination of native peoples to achieve academic excellence rooted in cultural traditions. Tribal colleges seek to rectify the inability of the U.S. government to honor the educational provisions agreed upon in more than 300 treaties dating from 1778.[1]

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Federal control of Indian education, excluding mission schools, began in 1870 with a $100,000 appropriation to operate federal industrial schools.[2] One of the few successful efforts in higher education was the 1882 founding of the Haskell Indian School (in 1965 renamed Haskell Junior College) in Lawrence, Kansas. In 1887, the Lumbees established Old Main Indian College at Pembroke, North Carolina.[3,4] In the early twentieth century, the idea of an American Indian college was proposed by a number of American Indians, including August Breuninger (Menominee), who in 1911 suggested the development of an Indian university. Arthur C. Parker (Seneca) established the Society of American Indians to found an "Indian College."[5]

It was not until the 1960s that American Indian higher education became of pivotal concern to both American Indian communities and the federal government. Beginning in 1965 and extending into the 1970s, American Indians lobbied for the passage of legislation to support the establishment of tribally controlled higher education in their communities. The thrust of this predominantly federal legislation was to enable American Indians to affect the direction and expansion of American Indian education. Consequently, the educational system changed from one that had been controlled by religious and governmental agencies to one designed and controlled by American Indian communities. Thus, the task became to manage major change in American Indian higher education. A primary manifestation of this change was the development of tribally controlled colleges. These colleges have been confronted not only with meeting the challenges faced by all traditional community colleges, but also with the need to ensure that their institutional objectives coincide with their cultural imperatives.[6]

TRIBAL COLLEGE OBJECTIVES

The objectives of tribal colleges are not significantly different than those of other community colleges. Arthur Cohen identified five educational objectives that community colleges in America attempt to meet:

1. Preparation for transfer, typically to four-year colleges;
2. Preparation for job entry, both professional and paraprofessional;
3. Literacy development;
4. Career upgrading and skill enhancement; and
5. Support of personal interest activities.[7]

In addition to establishing curricula and practices to achieve these five objectives, tribal colleges also have defined a set of goals that are intrinsic to their mission: (1) preserving and communicating traditional culture; (2) enhancing economic opportunity within the reservation community; and (3) improving health care at the community level through support or participation in alcohol and drug abuse programs.[8]

While adequate funding is a standard concern of all community colleges, it is even more critical and complex for tribal community colleges.

These three goals were identified in a recent Carnegie Special Report, *Tribal Colleges: Shaping the Future of Native America*, as meriting immediate action and additional research. The Carnegie Report cited two reasons, also supported by the tribal college presidents, for emphasizing these goals. The primary rationale is to provide an educational curriculum that can help rectify the negligence of the federal government's policies and practices regarding American Indian higher education. The second reason is to define explicitly the role of the tribal college in facilitating community development and promoting economic self-determination. The Carnegie Report offered a set of recommendations aimed at enabling tribal colleges to manage better their growth and to shape their own educational future. (As previously noted, the fundamental change was movement from nonindigenous control of education to indigenous design and management of education.) The Carnegie Report also identified assessment criteria for evaluating tribal colleges' ability to meet their objectives. These criteria depend on adequate funding, staffing, and accreditation.

While adequate funding is a standard concern of all community colleges, it is even more critical and complex for tribal community colleges. The funding issue is complex in that it involves analysis and application of treaties, federal legislation, state and local laws, private sources, and tribal allocations. Inadequate funding affects the stability of faculty and administration. The Carnegie Report and other studies have identified low pay, large teaching loads, and geographic isolation as the funding issues that contribute to substantial faculty and administration turnover.[9] The Carnegie Report suggested that these high rates of turnover have had an adverse effect on the colleges' ability to meet accreditation standards, support existing academic programs, and maintain linkages with the student body and community as a whole.

Historically, the primary indicator of institutional performance and recognition has been the achievement of accreditation. For community colleges, including tribal community colleges, institutional accreditation means that "a postsecondary institution's own goals are soundly conceived, that its educational programs have been intelligently devised, that its purposes are being accomplished, and that the institution is so organized, staffed, and supported that it should continue to merit confidence."[10] Navajo Community College, the first tribally controlled college, was chartered in 1968 at Tsaile, Arizona, as a result of the interest and determination of the Navajos. At present there are twenty-six tribally controlled colleges in the United States and two in Canada. Twenty-four of the twenty-six tribally controlled colleges are tribally chartered institutions. They are located primarily in the Northwest, with seven in Montana, five in North Dakota, and four in South Dakota.[11] Twelve of these are accredited and eight are candidates for accreditation.[12] Given the relatively short history of American Indian tribal colleges, the results have been remarkable. The ability to acquire adequate funding, retain faculty and administrators, and achieve accreditation are all measures of institutional performance. Before considering the role of libraries in the assessment of institutional performance, it is necessary to provide a brief description of the colleges' current status and growth prospects. Following the discussion of tribal college status, an organizational development model will be used to identify and assess the role that libraries play in the tribal colleges' efforts to meet their institutional objectives.

TRIBAL COLLEGE STATUS

Curriculum

Tribal colleges parallel most nontribal community colleges in offering two-year degrees in general education and in professional and paraprofessional fields. Two of the colleges in South Dakota (Oglala Lakota and Sinte Gleska) have developed baccalaureate degree programs in education, business administration, and human services. Unique among these tribal colleges, Sinte Gleska also offers a master's degree in education.[13]

Culture

The role of culture in the curriculum of tribal colleges is important. As previously stated, preservation of the tribal culture is acknowledged as a key institutional goal of the colleges. This goal is significant when contrasted with past federal educational policies which contributed to the eradication of native cultures by promoting forced assimilation at the expense of intrinsic values. In contrast, the policies of tribal colleges reflect the goal of integrating native culture into the curriculum. As a result, native studies programs are an important component of all tribal colleges.

Enrollment

The economic lifeblood of all community colleges is student enrollment. Community colleges receive funding based on the number of students who enroll, not on the number of students who complete programs or who move on to four-year institutions.[14] Therefore, tribal colleges are especially affected by enrollment figures because the total community from which each one draws is both small and generally dispersed.

In 1989, there were 4,400 full-time equivalent students enrolled in tribally controlled colleges throughout the United States. While this number is minuscule compared to the number of students enrolled in nontribal community colleges, it is a notable increase from 1981, when only 1,689 students were enrolled. However, enrollment figures must be considered in relation to total reservation population. For example, in 1989 Salish Kootenai College in Montana had 500 students enrolled out of a tribal community of 3,100, representing 16 percent of the total population.[15]

Two findings of the Carnegie Report in regard to enrollment merit note. The first is that most of a tribal college's enrolled students live on the reservation, and the second is that most of the students are single women (average age 33) with an average of two dependents. These findings validate the linkages that tribal colleges have with their own communities, particularly with single-parent families.

Resources

The adequacy of classrooms, libraries, laboratories, and other support systems available to students varies across tribal college campuses. While Navajo Community College has focused on the development of dormitories, classrooms, and recreation facilities within a centralized framework, Oglala Lakota, for example, operates as a decentralized college, offering classes throughout the reservation. Fiscal necessity has forced other campuses to take creative approaches to securing space for instructional purposes.

Two important laws partially address the inadequate funding base of tribal colleges. The 1971 Navajo Community College Act (P.L. 89-192) was of major significance in American Indian higher education because it paved the way for the development of other tribally controlled colleges.[16] For example, Navajo Community College was developed by the Navajos themselves, who established the college with monies from various grants. Two years later, Congress provided support through the Navajo Community College Act. Other tribes recognized the achievement of the Navajos and began to pursue the development of their own colleges. These colleges were the outcome of tribal commitment to higher education made feasible by the Tribally Controlled Community College Assistance Act of 1978 (P.L. 95-471).[17] This act is central to the survival of tribal colleges because the majority depend on it to meet 80 percent or more of their annual operating expenses.[18] The problem is that while enrollments have increased, the allocated amount of funds has decreased. The Carnegie Report highlighted this issue:

> Congress authorized $4,000 per student in the original legislation—an authorized level that has since been increased to nearly $6,000—but the amount actually released has become only progressively smaller. In 1980, for example, $5 million in federal money was distributed under the Tribally Controlled Community College Act, providing about $3,000 per student. This year (1989) the appropriation climbed to $8.5 million, but the amount generated for each student declined to $1,900! In effect, tribal colleges are being penalized for their own success.[19]

Tribal colleges have struggled valiantly to provide quality educational programs in less than adequate facilities for adult students living below the poverty line. They have contended with high faculty and administrative turnover in the face of inadequate funding. Despite these difficulties, a spirit of optimism pervades the tribal colleges' determination to meet their institutional objectives.

Library Status

Unfortunately, there is a paucity of information in the library literature concerning the status and role of libraries in tribal colleges. Yet libraries were specifically mentioned in the second Carnegie Report recommendation, which urged that libraries at tribal colleges be significantly improved through federal government appropriations.[20] Given the lack of descriptive literature and research literature in this area, I conducted interviews with seven tribal college presidents in January 1990 to determine the status of libraries within these institutions.[21] One of the indicators of library status is the availability of a librarian. Only one of the seven colleges had a full-time librarian with an MLS. Five of the seven colleges had librarians with college or graduate degrees in other fields, and one of the colleges was conducting a search for a librarian.

The range of services, facilities, and adequacy of collections varies among the colleges. Little Big Horn College Library is located in a gymnasium and houses 6,500 volumes. Navajo Community College has a functioning community college library with 45,000 volumes. In the interviews conducted thus far, all seven college presidents recognized that the colleges require additional information resources. Specifically mentioned by the presidents was the desire to enhance access to various databases, increase acquisition and preservation of archival materials, expand reference services to support broader curriculum, and facilitate the delivery of community-based health and educational programs.

DEVELOPMENTAL MODEL

Having briefly identified the institutional goals of tribal colleges and their current operational status, I will now apply a model for identifying and assessing the role of libraries and information resources in meeting the colleges' institutional goals and objectives. While there are numerous developmental models with close parallels, I will use the model developed by Eric G. Flamholtz and his associates.[22] The Flamholtz model has been successfully used to assess the stages of growth in developing organizations.

Organizational Growth

The Flamholtz model has seen its greatest value in respect to organizations undergoing significant transition and growth. For the purposes of this article, the primary value of the model is that administrators have used it for managing transition in a limited resources environment. The focus of this study is to examine the role of libraries at each stage of tribal college growth. The Flamholtz model defines four stages of growth common to all maturing organizations:

1. The **New Venture Stage**, which focuses on preparation, planning and analysis;
2. The **Expansion Stage**, where the emphasis is on increasing resources and enhancing services;
3. The **Professionalizing Stage**, whereby methods, procedures and practices are formalized; and
4. The **Consolidation Stage**, where the organization's objectives are both accepted and operationalized throughout the system.[23]

Applying the model to tribal colleges shows that their very existence is a testimony to the new ventures stage of their development. Tribal colleges were a direct result of community activity and were initially founded as culturally unique responses to the tribes' educational requirements. During this initial stage, tribal colleges concentrated on defining the educational population, planning and developing a curriculum, identifying faculty and administration requirements, securing space for facilities, designing support systems, and establishing budget requirements and allocations.

During this initial stage, tribal colleges explicitly considered the core requirements for providing library and information services to support both the curriculum and potential community needs. As previously stated, one of the unique goals of the tribal college was to serve proactively as the institutional guardian of tribal culture and tradition. One specific manifestation of this goal during this first stage was the attention given by some tribal colleges to including archival functions within the library. These functions were linked directly to the desire of the community to have ready access to the print and nonprint materials associated with the tribe's history and current status.

During this start-up stage, tribal colleges also recognized the need to identify the level of library and information resources necessary to support the core curriculum. As might be expected, the result was that each individual college determined what constituted the appropriate level of library and information resources for its institution.

The developmental model postulates that during the next stage, expansion, institutions concentrate on acquiring the fiscal, human, and material resources necessary to begin providing the services they have planned for the end-users. For the tribal college, this implementation and growth stage translates to enrolling students, communicating its mission to the community, offering a core curriculum, recruiting and retaining faculty and staff, and preparing for accreditation. At this second stage, the tribal college makes a conscious effort to enhance its economic commitment to the community. One of the more tangible outcomes of this commitment takes the form of college alliance with community health care providers, especially with regard to drug and alcohol abuse and mental health programs. During this stage, the community also becomes increasingly integrated into various components of the college curriculum. In essence, the college seeks ways to expand internally and externally into the community.

The adequacy of library and information resources is an important consideration during the expansion phase. Each tribal college deals daily with the reality that library and information resources—including staff, space, equipment, and materials—are barely adequate to meet the needs of students, faculty, administration, and community. While resource limitations are acute in all areas, they are especially evident in the level of professional staffing and the libraries' use of complementary electronic technology, such as computers. At this stage, library and information resources attempt to play integral roles in meeting at least two of the tribal college's immediate objectives: first, basic curriculum support by providing students and faculty with materials, reference services, and basic research support; and second, community support by meeting the basic needs of community-based individuals and agencies, particularly those working in health care and related areas.

Each tribal college deals daily with the reality that library and information resources are barely adequate to meet the needs of students . . . and [the] community.

As an institution enhances its ability to deliver products or services, it migrates to the professionalizing stage, which is characterized by the building of the management infrastructure to support the institution's achievement of its objectives. This third stage requires a qualitative change in the nature of the institution, particularly in respect to restructuring and formalizing goals, defining managerial responsibilities, and establishing procedures and control systems. In the professionalizing stage, institutions need to formalize a planned program of organizational development with a dual focus of implementing operational systems and improving the capabilities of the people who manage the institutions. For tribal colleges, this stage is characterized by broadening the curriculum and by improving support for student and faculty research.

At this stage, tribal colleges will have to depend increasingly on the functional capabilities of their libraries because the libraries' resources and services ensure the colleges' ability to support an enhanced curriculum and a research orientation. Most tribal colleges are just now entering this third stage because of their relatively short history. As previously stated, one-half of those tribal colleges now migrating through this stage have an overarching requirement—accreditation—that must be met in order to ensure their ability to provide an officially recognized level of quality education. The emphasis on libraries and their related information resources is significant, as libraries are specifically referenced in accreditation handbooks as one of the standards by which accreditation is granted.

During the accreditation process, a library must demonstrate competencies in three areas. The first has to do with the degree to which the philosophy, goals, and objectives of the library reflect the institution's (tribal college's) goals and objectives. The second major area is that of the quality, quantity, and appropriateness of library staff, holdings, services, facilities, and budget. The third area relates to evaluating the use of library services by the college community.

The developmental model used by Flamholtz and other organizational theorists suggests that institutions encounter a different type of challenge in the consolidation stage. During this stage, the institution moves from implementing workable systems for planning, organization, management development, and control to consolidating its more intangible asset: the institutional culture. The development of institutional culture is necessary to complete the institution's transition from a fledgling entity to a professionally managed one.

Some tribal colleges are just now beginning to address how they will manage transition during this fourth stage. The preliminary view held by the seven tribal college presidents contacted for this article is that at least three key goals must be met during this consolidation stage. The first is the tribal college's ability to direct or control its own future by successfully competing for and obtaining external or noncommunity-based monies. The second goal concerns the college's being recognized as a contributing institution by other tribal colleges as well as by the larger educational community. The third goal is to increase the presence of faculty and administration, which reflects the ethnic and cultural composition of the community.[24]

Libraries and information services will have a critical role to play within the tribal colleges as they move toward the consolidation stage. During this stage of tribal college development, the role of the library will be essential to the colleges' achievement of the three aforementioned goals. The library has an especially vital contribution to make in the area of institutional recognition and cooperation. That contribution takes the form of the library's ability to forge cooperative ties with other libraries and information networks, including other tribal college libraries. As a result, the linking of the tribal college's library resources, including the archives, to other institutions is in itself a measure of institutional recognition.

Developmental Tasks

Tribal colleges exist as a result of a self-determined effort by American Indians to develop culturally sensitive institutions capable of providing a range of relevant educational services. Currently, they are facing the same management issues encountered by other developing organizations as they move through stages of organizational growth. Having presented the four stages of organizational growth according to Flamholtz and applied them to the growth of tribal colleges, I will now consider the interplay between the colleges' developmental tasks and those of the libraries undertaken to achieve the institutional objectives.[25]

The first set of tasks undertaken by the tribal college library is to define its philosophy, establish its goals, and specify its operational procedures in relation to supporting the overall mission and objectives of the tribal college.[26] Concurrent with this set of tasks is the requirement to plan and provide core library materials and services to assist students and faculty. While it is making basic library services available, the library must frame and implement a plan for increasing staff, expanding holdings, adding services, and improving facilities to better serve students and faculty in addition to the local community.

Following the accomplishment of the first set of tasks, the library's focus turns to the operational systems necessary for the organization and dissemination of the library's resources. This includes attention to the following: technical processing of materials, including archival and multimedia resources; consistent provision of reference and basic research services; improved delivery of archival services; circulation control systems for all materials; and evaluative measures of resource use and service quality.

The third set of developmental tasks centers on acquiring and developing the human and physical resources needed to support an adequate level of services. For the tribal college library, the immediate priorities are to professionalize the staff (librarians with an MLS), to enhance the holdings (including archival holdings), and to increase services to the community. The tribal college is similarly engaged in retaining and nurturing faculty, supporting research efforts, improving physical facilities, and actively supporting community-based programs.

The aforementioned tasks, in turn, require the development of those library operational systems needed to implement policies and procedures for expanding the range of library programs. These operational systems address the following functional areas: material accessibility, resource selection guidelines, principles of collection management, guidelines for budget preparation, procedures for staff development, plans for technology implementation, and internal performance measures. The college is similarly involved in implementing operational systems for budget formations, staffing programs, community relationships, and internal assessments.

The Flamholtz model characterizes the fifth set of tasks as developing the management systems required for the overall functioning of the organization on a long-term basis. Comparably, the tribal college's emphasis is directed at strategic, operational, and contingency planning, with the immediate purpose of achieving accreditation and cultural integrity. Concurrently, the tribal college library seeks to implement management systems for determining collection policies, community involvement, staff development, technology implementation, and internal assessments (personnel and information resources).

The successful completion of these five sets of developmental tasks is predicated on the early formalization of tribal college libraries' involvement in the colleges' planning processes. As a result of successfully implementing these tasks, college administrations and library administrations become partners in implementing new academic and community-based programs.

Application of the model has shown that these tasks are always being performed to some degree at any given point in time by virtually all institutions, but that they do not always require the same amount of emphasis at any particular stage. The utility of the model was validated by a representative sample of seven tribal college presidents who agreed unanimously with its application to tribal college development.[27] The presidents also concurred that these developmental tasks are being performed currently at both the broad institutional level and the departmental (library) level. In addition, they noted that within the tribal college structure, economic considerations affect the movement of any given department from one stage to another.

While most tribal colleges are engaged in the developmental tasks associated with the second (expansion) and third (professionalizing) stages, a few colleges are moving toward stage four (consolidation). One tribal college president, Elgin Bad Wound of Oglala Lakota College, observed that movement within the four stages of development might be more accurately characterized in the tribal setting as circular rather than linear. The remainder of this article identifies that set of variables and hypotheses that will be critical for tribal colleges as they move through the organizational growth stages and achieve their goals and objectives.

HYPOTHESES

The organizational development model as applied to tribal colleges provides a framework for considering the role of libraries in supporting a range of institutional objectives. This model makes it possible to identify specifically those developmental tasks that have strong linkages between the institution and the library. While a number of hypotheses can be generated readily through application of the developmental model, this study will focus on the set of hypotheses that contribute to the tribal college's set of unique objectives, specifically those concerned with preserving tribal culture, enhancing community economic opportunity, and improving health care.

The primary objective of this article is to establish a framework for conducting a longitudinal study of the role of libraries in meeting tribal college objectives. Consequently, the hypotheses generated in the succeeding section will be tested in the next phase of the research. Discussion of the hypotheses is limited to providing operational definitions and linking the hypotheses to the institutional goals.

Also, the proposed hypotheses were submitted to the representative sample of tribal college presidents. The consensus among the group was that the hypotheses were relevant, reasonable, and testable. Most of the presidents suggested that low faculty salaries be controlled for as a factor that might affect faculty turnover in the third and fourth hypotheses.

Tribal Culture

The preservation of tribal culture is a tribal college objective that is most evident in both the curriculum and the projects and programs related to community involvement. Based on the Carnegie Report and the series of personal interviews, a primary criterion used by tribal colleges for assessing their effectiveness in meeting this objective is the extent of community use of institutional resources—especially tribal archives, where available.[28] The development of a tribal archives under the management of the tribal college library is one of the most visible demonstrations of the college's commitment to the preservation of tribal culture. The question to be addressed here is the extent to which the archival function of libraries contributes to the tribal college's objective of preserving tribal culture.

The primary objective of this article is to establish a framework for conducting a longitudinal study of the role of libraries in meeting tribal college objectives.

"Archives" may be defined as "those records of any public or private institution which are judged worthy of permanent preservation for reference and research purposes and which have been deposited or have been selected for deposit in an archival institution."[29] This study makes no distinction between the definition of an archives in a tribal setting and an archives in a nontribal setting. John Flekner, one of the recognized experts in this field, supports this position when he defines a tribal archives as "a body of materials permanently retained because it contains historically valuable information for the tribe and tribal members."[30]

The following hypothesis considers the role of an archives in respect to meeting the institution's objective of preserving tribal culture: Tribal college libraries that have an archives have more community use than those tribal college libraries without archives. The measure of "community use" to be applied in this study will draw from the performance measures identified by Nancy Van House and her colleagues in *Output Measures for Public Libraries*. These measures may include library visits per capita, library registrations, circulation per capita, in-library materials use per capita, and turnover rate.[31] "Community" will refer to two groupings that must be distinguished: (1) the students, faculty, and administration of the college and (2) the area residents who are not students, faculty, or administrators of the college.

Economic Enhancement of Community

The role of the library in contributing to the tribal colleges' objective of enhancing community-based economic opportunity was presented in the discussion of the developmental model with its parallels between the college and the library's tasks, specifically in the third set of tasks. What contribution, if any, can the library make to enable the community to enhance its economic base? A second hypothesis considers this question: Funding proposals submitted by tribal organizations that use tribal college library resources in proposal preparation are more frequently granted than those proposals submitted by tribal organizations that do not use tribal college library resources.

Before we consider this hypothesis, three terms require definition: (1) "funding proposal" is identified as a written document submitted to a funding agency (nontribal, nonlocal) for purposes of obtaining monies to support community-based programs or services; (2) "tribal organization" refers to any formalized group, department, agency, or program recognized by the current tribal government; and (3) "tribal college library resources" include the complete holdings and services of the tribal college library, including print, nonprint, archives, reference, and research. Testing this hypothesis will require control for the use of nontribal college library (e.g., public or special library) resources.

Health Care Support

The third unique tribal college objective is that of addressing the provision of health care programs within the community, specifically in the areas of alcohol and drug abuse. Tribal colleges have attempted to address this issue by emphasizing three approaches: the training of health care professionals, the provision of physical facilities to support health care programs, and the direct implementation of community health education efforts. Two of the major obstacles faced by tribal colleges in effectively supporting their total curriculum, especially the health sciences curriculum, have been the high turnover rate of faculty and the limited access to the library information resources needed to support the health sciences curriculum.

As the primary information resource within the institution, the library has a critical role to play in retaining faculty and in increasing access to specialized information resources. The hypothesis to be tested in this area is that tribal colleges that have established library networking and cooperative relationships with other libraries and information service providers experience less faculty turnover than tribal colleges that do not have such relationships. It may be possible to test a more specific hypothesis: Tribal colleges that have library networking and cooperative relationships with health services information providers experience less health science faculty turnover than tribal colleges that do not.

Three terms require definition in respect to testing this set of hypotheses. "Established library networking relationship" refers to a contractual agreement that has been in place for a minimum of one year whereby the tribal college library has access, via electronic or nonelectronic means, to information from information service providers such as Medlars, OCLC, and DIALOG.

"Established library cooperative relationship" refers to a contractual agreement that has been in place for a minimum of one year between the tribal college library and any other libraries (public, special, or academic) to share print and nonprint resources. Interlibrary loan arrangements are an example of this type of cooperative relationship.

"Faculty turnover" is more difficult to define because of the relatively short history of the tribal college. According to Arthur Cohen, a leading scholar in the field, turnover in nontribal American community colleges for full-time faculty is typically measured in reference to a mean institutional affiliation of twelve years.[32] For the purpose of testing this hypothesis, "faculty turnover" will be represented as the annualized percentage of vacancies over a five-year period caused by the voluntary departure (excluding death and retirement) of faculty members.

Accreditation

Apart from these three objectives, which are specific to tribal colleges, the colleges also strive to meet the five previously cited objectives that are common to all community colleges: (1) preparation for transfer; (2) preparation for job entry; (3) literacy development; (4) career upgrading; and (5) provision of personal interest activities. The tribal colleges' ability to meet these five objectives is related to their success in achieving and maintaining accreditation. The final hypothesis to be presented considers the role of the tribal college library in helping to achieve institutional accreditation.

According to the *Accreditation Handbook,* "the purposes of a library and learning resources program is to support and improve instruction and learning in ways consistent with the philosophy and evolving curricular programs of the institution."[33] Therefore, those tribal colleges that, from their founding, have identified and implemented appropriate library services to support all their institutional objectives should be more successful in achieving accreditation, particularly at the initial time of submission. Based on this rationale, the final hypothesis is: Tribal colleges with written strategic plans explicitly identifying the role of the library in meeting their institutional objectives achieve accreditation on their initial review more frequently than tribal colleges that do not have such plans. In this hypothesis, "written strategic plan" is defined as an officially approved tribal college document that addresses the educational mission, philosophy, goals, and objectives of the institution.

These four hypotheses focus on the role of the library in meeting the tribal college's objectives, particularly that set related to tribal culture, economic empowerment, and health care. While other hypotheses relate more directly to internal assessments of library performance, the intent in this article has been to derive, from the development model, hypotheses that can validate the role libraries have in meeting the institutional objectives of the tribal colleges.

CONCLUSION

While tribal college presidents recognize the value of libraries, a quantum leap in the provision of information services is needed to help meet their institutional objectives. For example, few tribal colleges possess adeqquatecomputer technology, yet in order to meet institutional objectives an electronic networking approach is essential. Similarly, the strong focus on archival collections for preserving tribal culture and history suggests the appropriateness of using newer technology such as image processing and CD-ROM.

The role of libraries in tribal college development provides the field of academic librarianship with a unique opportunity to recast the mission of libraries with respect to meeting institutional and community-based objectives. The nature of the tribal college has many parallels to the entrepreneurial nature of many businesses. As such, the academic library world may want to look at the applicability of developmental models that have been used in the business community. The dearth of research in this area mandates an intensive look at the role of tribal college libraries in a nonbiased fashion, free of preconceived notions.

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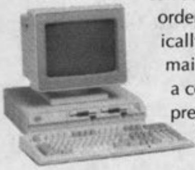

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Humanists and Electronic Information Services: Acceptance and Resistance

Stephen Lehmann and Patricia Renfro

The design and implementation of online systems in libraries have proceeded without much demonstrated empirical understanding of the complexities of users' needs. The authors interviewed a group of humanist scholars at the University of Pennsylvania about their experiences with the RLIN database. These interviews yielded a wide range of responses. Four factors emerged consistently as significant determinants of use: content, connectivity, user-friendliness, and cost. The significance of these factors, individually and in relation to one another, is discussed and evaluated.

If the development of online systems gives librarians a new opportunity to reshape library service, it also mandates a renewed commitment to understanding how scholars work and how they use information. Librarians understand the use of online catalogs, journal article databases, and now full text retrieval systems only intuitively, yet they are puzzled if scholars do not fall upon these resources with enthusiasm.[1]

What will draw researchers to computerized information systems, and what will repel them? What are the trade-offs of the new technology, and how do these stack up? Where should resources be allocated in the face of difficult choices?

At the University of Pennsylvania, we recently had an opportunity to ask these questions. After making personal search accounts to the RLIN database available to faculty at no charge, we interviewed a small group of humanists who had become committed RLIN searchers.[2] Knowing that this catalog of the holdings of major research libraries could be an important resource for any scholar involved in historical research, we wanted to know why it worked for some, but not for others. What distinguished enthusiastic RLIN searchers from colleagues who had little interest in opening search accounts or who, having received accounts, rarely used them? Was the database inadequate for some purposes? What were the barriers to its use?

This is a case study in the use (and nonuse) of new electronic resources by humanist scholars. The numbers are small and the evidence is anecdotal, but what we heard was suggestive and even compelling. As we talked with this group of scholars, certain themes began to recur. We were reminded of the fundamental importance of database content. We became aware of a range of issues relating to connectivity. We heard comments on the importance of user-friendliness and reactions to the issue of cost. We believe that the insights these interviews gave us provide useful point-

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ers for the planners of academic information environments and hypotheses about the use of computers in the humanities. These hypotheses can later be tested and reformulated as the new generation of local mega-systems starts to provide data about their use.

CONTENT

Librarian: "Is RLIN central to your work?"
Philosopher (and heavy RLIN user): "Thinking *is central to my work.*"

The most fundamental distinction between researchers and librarians is perhaps the emphasis on *content* by the one and on *access* by the other. Generally, the concerns of librarians—information organization, control, and access—hold the same kind of interest for scholars as a car does for family vacationers: it's what gets you there. This separation of process (technique, technology) from content accounts largely for librarians' failure to excite teaching faculty about library instruction and also explains, at least in part, their lack of interest in online searching. Librarians marvel at the retrieval power of online search systems, Boolean capabilities, keyword searching, and the rest of it, but the humanist scholar, after checking for his or her own publications, looks for that seminal work published in Belgium in 1937 and wonders what the use is of a system that does not include it.

Although RLIN's coverage of nineteenth- and early twentieth-century imprints is far from complete, the scholars we interviewed clearly felt there was enough in the database for it to be useful. RLIN statistics show that about 49 percent of the titles in the books and serials files were published after 1970 and that 8.4 percent of the titles were published in the nineteenth century.[3] We conducted a small study using a bibliography of Hegel scholarship consisting largely of titles not in English and found that 37 percent of the titles published from 1844–1879 were in RLIN, as were 49 percent of those published from 1880–1912, 53 percent for the period 1913–1945, and 77 percent for 1946–1975. Inclusion of titles from the largely English-language listings of *Annals of American Literature* was 84 percent for 1817–1843 imprints and 91 percent for 1844–1879.[4] Files that go back twenty or even forty years are useful, but the work of scholars is content-driven, and in the humanities content knows no barriers of time or language. Without exception or hesitation, every faculty member we interviewed expressed a strong preference for retrospective expansion of the RLIN database over further development of a research-in-progress file.

The most fundamental distinction between researchers and librarians is perhaps the emphasis on content by the one and on access by the other.

For at least one Penn faculty member, the relative depth of the RLIN database makes it valuable not only for research, but also for teaching. His students search RLIN on his office PC to find what has been published on a given topic. The "extraordinary riches of the database," he maintains, give students a sense of wonder: "RLIN is a teaching tool in a deep sense . . . through RLIN [students] realize that they are becoming a part of a transcultural, transtemporal community of inquiry." Unlike their professors, students tend to take RLIN's power for granted; what impresses them, rather, is the content of the database, much as the printed catalogs of the great national libraries impressed earlier generations of scholars.

CONNECTIVITY

Penn faculty member: "I want the information right away, before I write the next paragraph."

The idea that information should be accessible at the scholar's workstation, whether in the home or office, is fundamental to the concept of the electronic scholar. While RLIN has proven its usefulness at the reference desk (logging approximately 40,000 searches a year at Penn), the direct search accounts have allowed scholars to use RLIN in a different and extremely powerful way. Without the barriers imposed by the need to be in the library and to ask a librarian to mediate a search, use of RLIN has changed. The autonomous relationship between the searcher and the database encourages relaxed browsing—intellectual cruising, one searcher called it. A member of the Penn English Department spoke of the "gigantic difference" that direct access makes because it allows for "the browser-shopper frame of mind that comes from years of being socialized in the library stacks." RLIN satisfies that urge and provides "a sense of serendipitous exploration." As one scholar explained, "I won't share my semi-focused curiosity with a librarian."

The electronic information resource must, then, be available wherever research or teaching goes on. Unfortunately, this is not yet always the case. Some people can write only at home; others find access in campus offices to be vital; others need to be away from both home and office, perhaps in a library study carrel. Scholars are limited by the hardware and software available to them. Humanists typically have fewer resources than scientists to pay for campus network connections and for the hardware and software that will maximize their use of the network. Is institutional support for home modems and PCs adequate? If the network and online catalogs are designed to operate virtually twenty-four hours a day, subsidized computers and modems might make the institutional investment in a twenty-four-hour resource worthwhile.

But connectivity means more than the installation of network connections and the provision of the necessary hardware and software. It means connecting people to resources—in other words, getting the scholar to the resource with a minimum of effort on his or her part. Many scholars can set up and configure hardware and software, find their way through systems manuals, and persist in eliminating bugs. These are the computer literate members of our faculties, people who jumped at the opportunities offered by new technology and had the interest and inclination to try it out. All of Penn's frequent RLIN searchers are in this category. Most scholars, however, do not have the time, inclination, or endurance for this process. One searcher talked about the "endemic impatience" that humanists have for computing. Many described the fear and frustration that they see in their colleagues. As information providers, librarians must deal with the entire range of reactions to technology, from the enthusiasm of the humanist hackers, to the hostility of "constitutional Luddites," to the impatience of the average-to-busy, overstressed researcher whose time is already budgeted tightly.

The major problem identified by all the libraries that participated in the Research Libraries Group's (RLG) 1988 Research Access Project to experiment with direct scholars' use of RLIN was the issue of connectivity—people with adequate equipment, but no support for installation and setup.[5] The same picture emerged on all campuses: faculty interested in trying out the database, but frustrated by the difficulties of adapting hardware and software to access it. In order to realize their investment in networks, universities must find ways to provide scholars with simple, universal gateways. Some libraries are beginning to meet this need by offering their patrons a straightforward menu of information options—an online catalog, locally loaded databases, and general library information.

USER-FRIENDLINESS

Penn faculty member: "RLIN is difficult to manipulate. . . . It has the appearance and reputation of complexity."
Another Penn faculty member: "I would rather put the money into making the system more powerful than into making it more user-friendly."

Although the RLIN search interface is logical and consistent, it is not remarkable for its ease of use. The faculty to whom we spoke, themselves RLIN users and also motivated, patient, and generally confident computer users, agreed that many of their colleagues, perhaps especially humanists, would find the less-than-intuitive commands and codes an impediment. Certainly, we encountered faculty who seemed frustrated, even at first exposure to the command structure.

The major problem identified by all the libraries . . . was the issue of connectivity—people with adequate equipment, but no support for installation and set up.

In the absence of hard data, we cannot say with any certainty how significant a factor user-friendliness is relative to connectivity and cost, but we surmise that where all other circumstances are favorable, an interface like RLIN's should not be a deterrent in most cases. Where other disincentives, such as poor connectivity, interfere, an unintuitive interface will be a ready-at-hand reason not to go further. It is also evident that a relatively unfriendly interface discourages occasional users—scholars not engaged in ongoing, intensive research requiring a large bibliographic database, but rather faculty who need now and then to go beyond the local catalog to verify a title or determine a location.

COST

Librarian: "Would you use RLIN if you had to pay for it?"
Historian: (with raised eyebrow) "How much?"

Librarians know from experience that library services are cost sensitive. In some disciplines researchers can pass along costs and charge them to grants, but this is generally not the case in the humanities. The committed RLIN searchers at Penn indicated that the database had become so important to their work that they probably would be prepared to pay something toward the search costs. They probably would not have allocated funds initially, however, before acquiring some knowledge of the system's usefulness. Clearly, direct charges are a significant barrier to use in some academic environments—at most institutions, travel costs, photocopying fees, and research assistant salaries all compete for the limited discretionary research dollars available to humanists—and because cost is often related to the volume of use of a system, the process can be self-defeating.

CONCLUSION

This ranking—content, connectivity, user-friendliness, and cost—is, for the most part, relative and not absolute. That is, if a particular system happens to be extraordinarily user-friendly, poor connectivity might not significantly impede its use. Content, we believe, is a *sine qua non*, however accessible, easy to use, and cheap a system may be otherwise. However, content, though necessary, is not sufficient. RLIN searchers at Penn are faculty whose work benefits from the database but who also have enough comfort with computers to overcome hardware and software obstacles. We are convinced that if more faculty had easier access to RLIN and that if the RLIN interface were more intuitive or offered a menu-driven option, use of RLIN would be much more widespread. If, on the other hand, libraries were to pass back costs, use would be significantly less.

Every faculty member we interviewed expressed a strong preference for retrospective expansion of the RLIN database over further development of a research-in-progress file.

While librarians will, in time, learn much more about the scholarly use of computers and computerized information systems than we have outlined here, this effort to understand will always be like shooting at the proverbial moving target. Surely electronic systems will engage scholars and librarians in a dynamic of change, where both sides interact in a back and forth of stimulation and adaptation. New technologies will spur on new research methodologies, and these, in turn, will guide new technological developments. It is important that technology in the scholarly environment be understood as a part of this dynamic process and not as a Darwinian, adapt-or-die imperative. For this model to work, librarians cannot let systems be systems driven. Rather, decisions always should be informed by users' needs—in all their complexity.

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Research Productivity and Publication Output: An Interdisciplinary Analysis

Charles A. Schwartz

Although research productivity of librarians has been investigated for several decades, some fundamental problems of measurement and analysis have endured. This paper compares productivity patterns in library science with those in other fields and explains why such plausible factors as intellectual traits, educational experience, institutional support, and available time are not useful for understanding variation in scholarly output. The final part of the paper presents an overview of findings, examines certain myths that have dominated discussions in the library field, and suggests a different approach for future research.

Study of research productivity has attracted growing attention in the library field for more than fifty years and especially since issues of academic tenure have come to the fore. From precursory reports done at the University of Chicago in the 1930s to surveys of the literature in the 1980s, investigations have generally focused on such plausible productivity factors as having a Ph.D., institutional support, and available time.[1,2] Some fundamental problems, however, have deterred understanding in this area.

First, the literature offers few clues as to how analysis of productivity factors for librarians relates to that for social scientists as a whole. Moreover, the diversity of institutional contexts in the library field has obscured any continuity in the consideration of such factors.

This lack of systematic analysis also results from the common practice of considering all publications in library science to have equal research content or scholarly value. The prevalence of that simplifying assumption may stem from a desire to bypass the question of what exactly constitutes a piece of research, as well as from a need to keep investigations within manageable bounds. Whatever the actual reasons, the fact remains that hardly any reliable figures on research productivity of librarians exist. For example, Charles McClure and Ann Bishop, in a survey of productivity reports in the library field, list an assortment of largely unrelated findings with a claim that further review is not feasible: "Existing reports are rarely longitudinal, nor do they present data in a form comparable with earlier studies or make enlightening comparisons with studies in other disciplines."[3]

The analysis of research productivity set forth here is developed in six parts. Part one compares productivity patterns in the library field with those in the scholarly system as a whole. A consistent picture across all fields is that of a highly stratified system, in which a small pro-

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portion of participants produces much of the literature while the majority of Ph.D.s publish little or nothing in their lifetimes. Investigations of this wide variation in productivity traditionally have focused on such plausible factors as intellectual traits, educational experience, institutional support, and available time. These factors are examined in the next four parts of the paper. None of them, not even having a Ph.D., is generally effective. After several decades of research, some of it involving comparative analysis of thousands of academic careers, social scientists simply have failed to come up with a reliable model of productivity factors.

The last part of the paper presents an overview suggesting that any fairly stable propensity to do research seems to depend on a "sacred spark" of achievement needs, the cumulative advantage of early performance, and continuing socialization. Certain myths about research productivity are examined, and a different approach for future analysis is suggested.

PRODUCTIVITY PATTERNS

Two widely cited reports on research productivity suggest an average publication output of one article per year for librarians with Ph.D.s.[4] What seems to have escaped general notice, however, are all the caveats and qualifications the authors of those two reports attached to their findings. Masse Bloomfield cautioned that his productivity rate was based simply on author listings for publications of any kind in the *Library Literature* index and that it was highly inflated by the output of some extremely prolific writers who received their Ph.D.s in the early 1960s.[5]

As with quantity, so with quality. Jana Varlejs and Prudence Dalrymple observed that fewer than 20 percent of the publications they counted were included in more than one of the three library science literature indexes. This finding indicated that the great majority of publications tend to be on the fringes of the field—outside the core of refereed, research-oriented national journals.[6]

Indeed, virtually all writers on this subject point out that most listings in library science indexes refer to opinion pieces published in local or institutional organs.[7] More specifically, in a random sample Susan Bonzi found that 60 percent of the papers listed in *Library Literature* contain no references; and Christine Korytnyk found in another random sample that only a third of the publications in *Library Literature* are published in refereed journals.[8,9] Also, Robert Hayes found that the majority of listings in the *Social Sciences Citation Index* for prolific writers in the library field are for book reviews by them, rather than for articles of any type.[10] Even to rely on the use of references as an indicator of research quality is problematic; literature reviews of citation analyses reveal that roughly half of the references in core library journals tend to be irrelevant, not used to support any particular point.[11]

Recently, John Budd and Charles Seavey published an authorship study that provides, for the first time, multiyear data. They recorded the authors and institutional affiliations of 1,656 full-length articles published in thirty-six library and information science journals from 1983 through 1987. Not all of those journals are scholarly or refereed, but their study comes closest to gauging research productivity in the field. Of a total 1,373 authors, 1,027 (75 percent) published only one article in the five-year period, and only 128 (9 percent) published more than two articles. Budd and Seavey suggested that insufficient institutional support might be responsible for such low productivity.[12]

Perspective may be gained by reviewing productivity patterns in other fields. Such a review requires some caution, given the variety of scholarly norms, refereeing processes, publishing outlets, and conceptions of what constitutes a piece of research. Indeed, the "wisdom of treating each discipline . . . separately" has been recognized for decades.[13] The review presented here is meant simply to serve as a "reality check" of the broadest sort.

The publish-or-perish standard that supposedly governs American higher education actually applies to only a small band of elite institutions. Every study shows that most academics publish very little. This general pattern was first recognized in the mid-1950s when Paul Lazarsfeld and Wagner Thielens found that fewer than half of 2,451 social scientists had published more than three articles in their careers.[14] In the early 1960s, Nicholas Babchuk and Alan Bates found a corollary pattern: only a small proportion of academics publish much. In their sample of 262 sociologists holding Ph.D.s for at least ten years, Babchuk and Bates found that 36 percent had published no articles, 31 percent had one to three articles, 12 percent had four or five articles, 12 percent had six to nine articles, and the top 10 percent had ten to sixty articles.[15]

The publish-or-perish standard that supposedly governs American higher education actually applies to only a small band of elite institutions.

During the heyday of productivity studies in the late 1960s and early 1970s, two large-scale interdisciplinary studies were undertaken. The 1969 National Surveys of Higher Education, sponsored by the Carnegie Commission, found that more than half of 27,000 faculty members had not done any research during the preceding two years, while only 3 percent had published ten or more articles in that period. The diversity of participation in publishing was even more striking among different fields, ranging from 91 percent for biologists in elite universities to 9 percent for business faculty in junior colleges. The rate of participation for a category of practitioner fields that included library science ranged from 67 percent in elite universities to 13 percent in junior colleges.[16]

The other large-scale study was the 1972 American Council on Education survey of 17,399 faculty members at universities and four-year colleges. Briefly sketched, this survey reported lifetime mean averages for article productivity to be about thirteen in the natural sciences, nine in the social sciences, and six in the humanities.[17] A smaller study in 1975 of lifetime research productivity, by Everett Ladd and Seymour Lipset, showed that only 4 percent of academics forty-five to fifty-four years of age were actively interested in research, another 21 percent did some research but leaned toward teaching, 50 percent published rarely, and the remaining 25 percent had published nothing in their careers.[18]

In the late 1970s, productivity studies in the library field began to gain momentum. Outside the field, however, this type of investigation had run its course as interests shifted to other areas, such as graduate school ratings and general surveys of advances in the social sciences.[19,20]

The essential point of these studies for our purposes is twofold: (a) the great majority of academics do surprisingly little research; and (b) when one counts all publications of librarians as being equal, measures of their scholarly output are overblown because of the various factors noted above that mitigate against any assumption that such output embodies comparable research value. Cross-disciplinary analysis of library science productivity with that of other fields, to any greater degree, becomes somewhat meaningless. For instance, in the American Council on Education survey library scientists are vaguely comparable to business and fine arts faculty members at the junior college level in the sense that only 10 percent of such individuals had published at least one article within the two years preceding the survey.[21]

INTELLECTUAL TRAITS

Psychologists have delineated a set of core intellectual traits of productive and creative individuals across a broad range of endeavors, including literature, art, music, and science. Such individuals are said, for example, to handle problems with much more ego strength, reflection, persistence, tolerance for ambiguity, and attraction to complexity than their colleagues.[22] In a similar vein, sociologists have described the work habits of eminent scholars in terms of a "sacred spark" productivity thesis, which holds that an inner drive compels some scholars to do research, even in the absence of rewards.[23]

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The overwhelming limitation of this approach, however, is that generally reliable ways of developing intellectual traits are unknown. It does little good to espouse such traits when no one can teach them effectively. Likewise, no one can explain background or behavioral factors that account for the "sacred spark" phenomenon. Accordingly, investigation in this area was abandoned by most scholars in the 1970s, leaving a vacuum in the literature that has been filled with how-to books on creativity written by nonspecialists for the popular press.[24]

EDUCATIONAL EXPERIENCE

Although there is an intuitive symmetry between research productivity and the doctorate, the actual relationship is full of incongruities. Consider the plausible factors of (a) predoctoral work experience and (b) quality of graduate training. In the library field, reports on predoctoral experience as a factor of postdoctoral productivity are contradictory. Kathleen Garland and Galen Rike, in a study of 168 library science faculty members, posited a direct relationship: those who earn Ph.D.s after many years of practice in the field are likely to publish the most.[25] Other writers, however, have described an inverse relationship between predoctoral experience and subsequent productivity. Nancy Lane, in a 1975 dissertation, found that prolific writers tend to have fewer years of practice; and Pauline Wilson conjectured that extensive library experience, being pragmatic rather than research oriented, may work against the internalization of scholarly norms in a doctoral program.[26]

A third line of investigation holds that no discernible relationship between predegree experience and postdoctoral productivity exists. Herbert White and Karen Momenee, in a 1978 survey of 403 library Ph.D.s, found that neither professional practice nor publication activity leading up to the doctorate appears to be associated with later productivity:

> This would appear to be a sharp indictment . . . of the quality of present doctoral programs: in their selection criteria, in communicating to students the conditions and responsibilities of what the terminal degree means and requires, in the school's treatment of research, and in the acceptance of lesser standards in the undertaking of research leading to the dissertation.[27]

In effect, White and Momenee showed that librarians, by and large, go through Ph.D. training without becoming socialized to scholarly norms in the process.[28]

Investigations in social science fields, however, have discounted quality of doctoral programs as a signficant factor in later research productivity. For example, Frank Clemente and Richard Sturgis, in a series of analyses of early career determinants of Ph.D.s in sociology, found that quality of doctoral programs accounts for less than 10 percent of the variation of postdoctoral research output. To reassess this startling conclusion, they tested the hypothesis that a Ph.D. from a top-quality department could be a "necessary but not sufficient condition" of high productivity by using more sophisticated statistical techniques than linear regression. That test supported their original findings, which were based on the publication records of 2,205 academics over a thirty-year period.[29]

Indeed, the American Council on Education survey described earlier also found that among faculty in the social sciences and humanities, such factors as quality of doctoral programs, tenure, teaching load, grants and fellowships, and even possession of the Ph.D. bear only weak relationships to research and publication.[30] However, the survey did find other factors to be generally associated with research productivity, including years of post-doctoral experience, number of journals regularly read, weekly time at research, and quality of employing institution.

Some additional significant factors were found to have more complex interactions. For example, teaching load has a salient effect only for members of the humanities, and then its effect is partially positive—the greater the time spent teaching, the greater the productivity for publishing books, though not articles. Also, while academic rank and productivity are highly correlated, the survey (not being longitudinal) could not determine their causal direction—whether prolific writers simply advance in rank and then perhaps produce less or whether full professors and deans continue to publish at a high rate.[31]

INSTITUTIONAL SUPPORT

What is known in any systematic way about institutional support for research activity of librarians indicates a grossly ineffective professional development system. First, although three out of four academic libraries provide faculty or academic status of some sort, only a few require librarians to publish. For example, about 15 percent (ten university libraries) of Association of Research Libraries member institutions appear to have that requirement.[32] In other academic institutions, criteria for librarians are substantially modified to maintain job performance as the key or sole consideration.[33] Indeed, Budd and Seavey found that, although 60 percent of a sample group of institutions either require or strongly encourage publication for promotion, there is a striking "disparity between the rhetoric of the requirements and the performance exhibited by librarians at those institutions."[34]

Second, publishing activity by librarians—even where required by universities—is not generally evaluated for research content or quality. Rather, all types of nonrefereed items (conference papers, book reviews, in-house pieces, and so forth) are acceptable.[35] Third, faculty status does not promote publishing productivity, let alone research work. In an analysis of authors and their institutional promotion and tenure systems, Paula Watson found that "there is not a marked difference in productivity between those who must meet true faculty standards . . . and those who do not."[36] Moreover, an analysis by Karen Smith and Gemma DeVinney of 530 tenured librarians at thirty-three large academic libraries showed that about 47 percent of the librarians had no publications at the time they received tenure, 19 percent had just one publication, and 34 percent had two or more.[37]

Finally, publishing activity by librarians is not usually supported, even where required. While there is very little consistency in faculty status systems from institution to institution, professional development funds appear to be reserved mainly for conference expenses.[38] Additionally, Nancy Emmick calculated from a study of professional development funding in 367 libraries that most of them grant somewhere between 1 and 5 percent of a librarian's time for all forms of professional development—at most, two hours a week.[39]

AVAILABLE TIME

The relationship between research productivity and available time has a couple of troublesome characteristics. First, investigations of this relationship across various fields do not generalize well—that is, they do not provide enlightening perspectives beyond the grasp of ordinary knowledge. One group of writers, for example, suggests that productivity is a function of time. Within this group, however, writers disagree about whether large blocks of uninterrupted sessions at home or brief stints during the workday are more productive.[40,41]

Another group takes the opposing position that productivity is not a function of time; however, individual explanations differ as well. Most writers within this latter group believe that "everyone has sufficient time, though some have more than others," whereas others point out that "there is surely a factor of simple energy level that allows people who are active in one area [teaching or administration] to be active in other areas [research and publishing] beyond the average."[42,43]

Whatever the bases of adherence to any of these positions, there is no logical basis for their being ranged against each other. Generalizations about productivity being a function of time can be tempered by considering their relationship as a *curvilinear* one, with the lowest levels of productivity being associated with either very large or very small proportions of time spent on research.[44]

Generalizations about productivity *not* being a function of time can also be tempered by considering the need for a regimen of a sort, writing regularly without undue regard for inspiration or convenience. For example, Aaron Wildavsky begins his book on scholarly writing by emphasizing the "importance of habit and rhythm: Try to work in the same place, at the same time, and in the same way . . . so that body and mind expect to be called on and will respond."[45]

Robert Boice has written widely on clinical treatments for writer's block based on a regimen of brief (thirty- to sixty-minute) daily writing sessions.[46] As Boice points out, such an approach runs counter to conventional views of librarians and academics, who tend to believe that they need thirty minutes just to warm up. He describes such initial resistance at a writing productivity workshop (which was eventually successful):

> Both groups [librarians and faculty members] seemed to have discretionary time that could have been devoted to scholarship. When asked about this possibility, almost every participant gave the same answer: their occasional breaks in an otherwise busy schedule were not sufficient for scholarship. Writing, they pointed out in almost complete agreement, requires large blocks of uninterrupted time. Thirty-minute blocks were too short.[47]

Basic realities of the library profession—structured schedules, the view that scholarship is a personal indulgence, and an overriding concern for patron service—engender resistance to the notion of a writing regimen, however brief, during the workday.

CONCLUSIONS

The main conclusions of this paper, covering productivity factors and output patterns of scholarly research, stand in sharp contrast to two myths that have dominated discussions in the library field.

> Myth #1: The Ph.D. degree is a significant factor of research productivity; thus, when the numbers of doctorates reach a "critical mass," library science will take off in terms of aggregate scholarly progress.

On the contrary, the American Council on Education's large-scale survey concluded:

> "It is curious that despite the vaunted role of the Ph.D. degree as the essential academic, scholarly, and scientific credential, when other determinants are controlled, its possession seems to confer no added increment to article productivity."[48]

There is simply no evidence that possession of the Ph.D. accounts for any measurable part of variation in publication output, either in library science or in the scholarly system as a whole.

Nor is there support for the so-called "critical mass" expectation, which suggests that scholarly progress in the library field depends on the sheer number of Ph.D.s and the volume of their research activity. It is true that the growth of library science doctorates has been exponential: the cumulative total doubled in the late 1950s, doubled again in the late 1960s, again in the mid-1970s, and again in the early 1980s—to about 1,000.[49] Yet the average productivity rate for Ph.D.s in the library field has actually declined—and in roughly proportional terms. According to Bloomfield's study, those who earned their degrees after the mid-1960s tend to publish at one-half to one-quarter the rate of the earlier generation of Ph.D.s.

Only part of this large decline can be attributed to the extremely high productivity of that earlier generation. Moreover, in writing about those early prolific Ph.D.s, David Kaser noted that, while they made up the leadership of the nation's largest academic libraries during the 1960s, very few of them published real research work:

> All of these directors had been, in their doctoral experience, imbued with the rigor of scholarly method; yet, . . . with the exception of one or two, virtually none of them pursued scholarly research in their later lives. Virtually all of them remained prolific authors. . . . but almost-none of them sustained in their postdoctoral careers what could be called, even with generosity, even a modest regimen of the research to which they were trained.[50]

Overall, the Ph.D. has become an increasingly common factor in research settings, but its impact has been greatly diminished or entirely muted in many of them.

Myth #2: More large-scale statistical studies are necessary to determine general productivity factors and output patterns of research activity.

Everyone is in favor of better data and more analyses on virtually any topic, yet any such assumption about research productivity is misleading. It should make us pause when social scientists are unable to come up with anything that resembles a general explanation of scholarly output, one identifying significant factors within researchers' control. Any fairly stable propensity to do research somehow depends on a "sacred spark" of achievement needs, the cumulative advantage of early performance, and continuing socialization (mostly by working in a large university that recognizes research activity). Beyond that framework, no one really knows what to say; in the main, this field of inquiry has run its course, and most social scientists have abandoned it.

This lack of study is not to suggest a closure of inquiry, but rather that future investigation might well offer a shift in approach and focus. As discussed, the traditional approach—publication counts based on literature indexes—is wholly inadequate for measuring and analyzing research productivity in the library field. (That approach, of course, is based on the principle of expediency: any attempt to establish criteria of what is and is not a piece of research is persnickety in theory and time-consuming in practice.)

Moreover, much of what we would like to know of a practical nature, such as the potential for in-house research development programs, is context dependent and not at all likely to show up in aggregate statistics. One solution might be to take a more interpretive approach in which productivity is investigated in the context of specific institutional surroundings. The aim of inquiry would thus shift from discovering general "laws" of research productivity, to understanding particular cases of effective factors in particular settings.[51]

There is simply no evidence that possession of the Ph.D. accounts for any measurable part of variation in publication output, either in library science or in the scholarly system as a whole.

Consider as an illustration the issue of whether greater institutional support of research activity would be effective in the library field. Funding is so negligible and released time so scarce that one wonders whether this issue has been put to a real test. The literature on institutional support as a factor of research productivity of academics is mixed but helpful.

On the one hand, such support is not a significant factor for academics in the aggregate. As a general "law," people in any field who do little or no scholarly work do not tend to change course in response to the publish-or-perish standard, more benign forms of academic status, reduced teaching loads, or the like. Early performance is strongly associated with continued productivity in later years. Correspondingly, prolonged procrastination in research activity (beyond normal post dissertation paralysis) is likely to last a career. Late bloomers in the scholarly system are a rarity.[52]

On the other hand, colleague support appears to be especially relevant for librarians. Yoram Neumann and Edith

Finaly-Neumann, in a comparative study of 380 faculty members drawn from certain sciences (physics and electrical engineering) and social sciences (sociology and education), tested the relative significance of colleague support for publication output in those domains.[53] The study showed that such support is rather influential in the sciences (accounting for 47 percent of publication output variance in physics, 26 percent in electrical engineering), but quite weak in the social sciences (accounting for 15 percent of output variation in sociology, 12 percent in education). Other studies bear out this general finding.[54]

Colleague support appears to be especially relevant for librarians.

The essential reason for this difference in significance of colleague support between the sciences and the social sciences has a positive bearing on prospects for research collaboration in the library field. In the sciences, research can be highly collaborative within a department because colleagues have a common work environment—they share the same technology and much professional knowledge. In this kind of environment, ample opportunity for informal socialization, seminars, and other mechanisms exists to facilitate colleague support and feedback.

In the social sciences, by contrast, much less opportunity for collaborative research exists within a department because faculty hiring tends to maximize intellectual diversity as a means of ensuring instructional coverage of broad disciplines. In that kind of environment, lacking shared technology and subject expertise, institutional support is more people oriented than task oriented. The Neumanns observed that increases in publication output may depend on department chairpersons setting helpful goals for new faculty members as a means of socializing them to scholarly norms.

The traditional approach . . . is wholly inadequate for measuring and analyzing research productivity in the library field.

In the library field, *both* task and people orientations appear to be prospective factors of research productivity at the institutional level. A task orientation, based on shared expertise, would derive from librarians' knowledge of in-house technology and service functions. A people orientation, with its emphasis on goal setting and other forms of mentoring, would seem useful for reducing the role ambiguity of librarians who are motivated to do research but who perceive weak institutional support and performance recognition.

Overall, a set of four factors might inform future studies of research productivity in the library field: early socialization (in the first few years after graduate training); goal setting (to reduce role ambiguity); institutional support (e.g., project funding, released time, and performance recognition); and colleague support (e.g., collaborative efforts and informal seminars).

Finally, the great variation that exists among academics with respect to research productivity has not been recognized in the library field. Rather, the prevailing view has been that librarians are particularly negligent when it comes to publishing. Broader awareness of actual productivity patterns in the scholarly system, as described in this paper, should enable us to put this matter into better perspective.

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With Feathers: Effects of Copyright and Ownership on Scholarly Publishing

Ann Okerson

Editor's note: This article is the fourth part of a series on scholarly communications and serials prices.

The copyright legislation of the United States was conceived to promote the "progress of science and useful arts." While copyright law, which defines ownership of published works, is effective for trade and mass market publications, its effect upon scholarly publishing can act as a barrier to the wide sharing of ideas. The reasons for this perception are discussed in relation to both current paper and electronic publishing practices. Broader sharing of scholarly ideas can be successful through addressing the larger arena of university and scholarly distribution and ownership of intellectual ideas. The increased number of electronic journals and research and academic electronic networks offers hope for the future.

Emily Dickinson wrote in a celebrated poem that " 'Hope' is the thing with feathers." Why a thing with feathers? Because like the bird the metaphor evokes, hope is soft and fluffy. Hope is probably small. It is elusive; it lights suddenly and then vanishes. It sings sweetly, but is hard to capture. This paper is about hope for the publishing system, specifically the current scholarly publishing system, some of whose characteristics, particularly ownership, place this species on at least the moderately endangered list.

We sense from annually published Association of American Publishers (AAP) statistics that the general arena of paper and other trade and mass market publications is thriving, that the market is large enough and the competition great enough so that the overall publishing system remains largely affordable and accessible. It fulfills its mandate of providing hardcover and paperback books, magazines, videos, and computer games to meet broadly based public needs. Price inflation is at tolerable, affordable levels.

Popular books are widely available and either stay in print or recycle secondhand in a cottage industry, out-of-print marketplace. These days, librarians worry a great deal more about scholarly publishing and seek hope for it, because it is becoming dysfunctional and endangered. For the purposes of this paper, scholarly publishing communicates largely or mainly to researchers, scholars, and academics, or seeks to communicate within the community where these scholars work—that is, within academe—to students and colleagues. At times the system communi-

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cates passively. To wit, academic writing may be perceived as unread and possibly uninteresting, but it is purchased and stored by academic libraries as a record of what has been thought about a variety of subjects, as "the body of knowledge." Strictly speaking, scholarly publishing is, for the most part, limited to the segment of the industry that has become almost exclusively dependent on researchers for authorship and on academic or scholarly libraries for income.[1]

A special and anomalous characteristic of scholarly publishing is that its financial fountainhead is largely public or governmental, funding being given either directly to public institutions or less directly to private ones. For example, grants from the private sector or tuitions are tax deductible. Unlike the situation with trade publications, with scholarly publications (1) the government funds researchers, (2) the government funds the libraries that purchase researchers' output, and (3) in between (1) and (2), the publication process (authoring of articles and refereeing or peer reviewing of them, both substantial components of the publication effort and both performed by scholars without pay) gives scholarly output to publishers, which may sell it at a price of their choosing. Because of its public-based funding, scholarly information may be viewed as government information, or information for the "public good." I would argue that like government information, it ought to be widely available as a matter of public policy, rather than treated as a market commodity.

The present scholarly publishing system is in danger for four reasons, most of them entwined with the notion of ownership:

1. Prices of printed books and journals are increasing far more rapidly than national inflation rates, and individual libraries can afford a decreasing percentage of them. Coincidentally, the majority of at least scientific publishing is in private, for-profit ownership—ownership that charges higher unit costs to purchasers. Many for-profit scholarly journals are so expensive individuals cannot afford them.
2. The academic world rewards quantity in publication. Thus, an increasing number of publications is produced, often in small runs. Librarians feel compelled to buy them, although quality is often perceived as mediocre and (as recent revisitations to citation data indicate) many materials may go unread. While their journals generally include the titles with higher citation impact factors, universities and learned societies are increasingly minority scholarly publishers, at least in the sciences. For instance, more than 70 percent of the journal titles indexed in the Institute for Scientific Information's *Science Citation Index* are produced and most likely owned by the for-profit sector.
3. Via the conventions of scholarly publishing, copyright of writings from the largely not-for-profit educational sector is assigned to publishers that resell intellectual efforts back to the educational sector. Value is added, but when priced for purchase, particularly by commercial owners, academe grumbles that the price is not worth it or is unaffordable.
4. Although technology offers greater opportunities for creating and transmitting information and for writing, it simultaneously poses unresolved problems in just about every other area, including ownership.

Such stresses imperil the higher education, research, and library functions. Additionally, research library collections and customer service depend on both ready and eternal accessibility to intellectual property and ideas. By eternal, I mean that in addition to establishing breadth and depth of collections, research libraries are committed to preserving recorded knowledge over a long time.

En route to analyzing the relationship of ownership to scholarly publishing, I will first briefly consider the problems inherent in ownership as defined by copyright law and copyright law's effect on scholarly publishing in paper forms. Then I will extend that discussion to emerging electronic forms. Finally, I will discuss the more general notion of ownership and how it might effectively resolve some of the strains on the present scholarly publishing system.

IS U.S. COPYRIGHT LAW OPTIMALLY EFFECTIVE FOR SCHOLARLY AND ACADEMIC PUBLISHING?

In its precise definition, "ownership" is legal title or proprietorship. Our legal system has created various frameworks for describing different kinds of ownership: for example, real estate law for land; corporate law for businesses; trademark law for product identifiers; patent law for inventions; and copyright law for authored works. Therefore, copyright law creates a definition of intellectual property that has identity. That identity is "works fixed in a medium of expression," such as writings, music, and pictures. Copyright law gives the creator the right to produce or reproduce, to distribute, perform, or display, for the duration of the copyright period, fifty years and up. In the United States, more than in most other countries, the rights of the creator become secondary to the rights of the publisher, as the creator signs over copyright (ownership) to the publisher. Such assignment is the norm in scholarly journals and monographs, whose authors are generally not paid by the publisher for either initial publication or subsequent copying revenues. It is generally recognized that authors publish to spread their ideas and reputations and that very little scholarship is read enough to have any hope of attaining best-seller status.

Copyright law is meant to protect the expression of an idea while encouraging the dissemination of the idea itself. Accordingly, its fundamental objective is to balance rewarding the creator with circulating intellectual products. The stated intent of the authors of the 1909 Copyright Act was to "promote the progress of science and the useful arts."[2] Much of the writing about the Copyright Act compliments it on striking that balance. However, several problems exist.

1. Copyright law provides incentives to authors only in "normal" (i.e., trade) market conditions.

Copyright works for trade books, but it does not work for scholarly publications because the market is limited and purchasing incentives are very different. The recent dramatic increases in quantity and price of scholarly journals indicate that the system for producing and distributing scholarship does not adhere to free market laws. Each scholarly article and book is unique. The potential pool of purchasers is specialized and relatively small, and the vague definition of scholarly "need" leads to the tendency for the small consumer group to seek completeness in purchasing scholarly works.[3] Once ordered, journal subscriptions have been difficult to abandon. The academic marketplace orders for quality and prestige over pages for dollar. Therefore, the market for scholarly publishing is inelastic: demand for journals does not respond significantly to price increases. The more reputable titles have the potential for growing rapidly in price, absorbing a larger proportion of the institutional budget, and remaining sacrosanct despite adverse financial performance.

Furthermore, the creator or author, by tradition writing for recognition of ideas and for academic reward, assigns copyright or ownership to a publisher. No money changes hands. A typical scientific journal copyright statement transfers from the owner to the publisher rights for paper publication, reprints, microform, electronic media, and (some statements say) media that have not yet evolved. For the risk and added value of production, the publisher owns the work, the rights to it, and the profit from it. Because scholarly works are not interchangeable, the owner of each work has, in effect, a monopoly on that unique product. Those desiring to purchase goods from a monopoly must rely on the good will of that monopoly in setting prices.

The most severe indications of dysfunction and overpricing in the scholarly world occur in the sciences, where studies repeatedly show that certain types of publishers—mainly large commercial producers that have no direct interest in the knowledge itself and whose principal stake is profit—raise prices at least twice as rapidly as standard national inflation increases.[4] This phenomenon is in direct contrast to the practices of the not-for-profit sector and other smaller or humanistic publishers. A recent LSU study of three major international scientific publishers shows that they doubled prices in about six years while doubling the size of journal content in about twelve years.[5]

Nonetheless, academic institutions are subject to strong internal pressure to keep up with significant scholarly publications. Judgments on significance can be drawn from some imprecise assessment of the status of the editorial board or of the quality of the publisher. These scholarly publications are thought to be vital to scholarly communication, education, and research, as well as to the body of knowledge. Because budgets have limitations, such collecting efforts are increasingly doomed. Cancellations occur at the rate of 2 to 3 percent per year, scholarly journal publishers inform us; scholarly monographic press runs are greatly reduced; in research libraries, journal collections displace book purchases.[6] Purchasing is top heavy in sciences over humanities, leading to what the Modern Languages Association (MLA) has termed for the title of its next annual conference the "Crisis in Humanities Publishing."[7] When part of the system becomes out of proportion, it displaces other parts.

2. *Copyright law does not provide for broad copying of works created at public expense. It effectively converts public property to private property.*

This statement has a significant exception. Article 105 of the Copyright Act states, "Copyright protection under this title is not available for any work of the United States Government." In article 101 "Definitions," a "work of the United States Government" is a work prepared by an officer or employee of the U.S. government as part of that person's official duties.[8] Authors of such work cannot sign over rights to producers. Instead of signing a copyright transfer form, such authors assert that the work was done under the conditions of article 105. A statement to that effect appears on the printed piece, and users may copy the work freely. Article 105 does *not* include work produced under government grants, for example from the Defense Department, the Department of Energy, NASA, or the National Institutes of Health. A great deal of academic and laboratory scientific research in the United States is accomplished with such funding. Authors of work so produced observe conventional academic ownership policies—embedded in tradition—and are free to reassign ownership. Additionally, if a work is produced by a government employee in collaboration with a nongovernment employee, the nongovernment employee still transfers copyright to a publisher. Furthermore, article 105 does not apply to state-funded activity.

The recent dramatic increases in quantity and price of scholarly journals indicate that the system for producing and distributing scholarship does not adhere to free market laws.

Generally, whatever the funding sources, authored work done in universities and research facilities is the creator's, and in the process of publication that creator signs over ownership. It is not clear what would happen should authors refuse to transfer copyright. If a work is exciting enough to the publisher, it will presumably be printed according to the author's restrictions. Publishers believe that nonownership of scholarly works would quickly undercut their livelihood and profitability. If an author allowed unrestricted copyright, it would be possible, theoretically, for institutions to share a single book or subscription and copy freely. If the author retained copyright, there would remain the logistics problem of individual authors handling rights and permissions to their work. Such a function could, of course, be absorbed by a central university office that clears permissions campuswide.

Not infrequently, the copying or recopying of scholarly materials pits readers or librarians against publishers. Because of the quasi-public nature of research findings, the readers and librarians feel morally entitled to generous reproduction allotments, publishers to generous compensation for copying. In general, publishers, booksellers, and librarians adjust definitions of "fair use" through sometimes uneasy compromise or arbitration—rarely through the courts. Librarians tend to be conservatively law abiding, so most of the squabbles and legal battles occur between merchants and publishers rather than between librarians and publishers. Indeed, Kenneth Crews, in his recent dissertation for the UCLA library school, discovered the "overwhelming tendency of librarians to choose narrower fair use standards. Interviews with librarians revealed an acute sensitivity to liability possibilities, even without exposure to actual threats at their campuses."[9] Still, the provision for systematic, collective ownership of publicly supported research is a significant omission from the Copyright Act.

The above discussion has not dealt with the provisions of fair use. If, as librarians believe, many ideas are generated through the generosity of the public purse and that they ought to be shared generously as a public good, the kind of fair use described in the Copyright Act would have to be rethought. Fair use and the way it has been defined by the CONTU guidelines (no more than five copies from the same book or journal title—not issue or edition—by any one library in any year) may place some libraries, in cancelling expensive journals and sharing titles or collections, in transgression of the Copyright Act.

Another curious situation relates directly to the public support of a great deal of research and of the libraries that store and service that research. The situation is that printed materials, especially scholarly ones, go out of print quite rapidly as publishers produce shorter press runs of monographs and maintain smaller inventories. The publishers' original support through printing and distribution deserves fair compensation, but publishers do not find it profitable to support those publications in the long term. Probably a vast majority of what is photocopied and shared by libraries is no longer purchasable. Thus, the responsibility for maintaining, in effect, publishers' back stock or warehouses falls on the publicly supported and not-for-profit institutions called libraries that are nonetheless expected to reimburse the original publishers.[10] This oxymoron is not addressed adequately by either the information community or the guidelines that elaborate upon fair use.

3. Copyright law does not treat emerging technological capabilities and issues adequately.

As the expression of scholarly ideas becomes less and less affordable, the question of whether the 1909 or 1976 copyright law, or any copyright law, is the right law for sharing scholarship is again raised in some quarters. Scholars like Harlan Cleveland write of the "fraying fictions of patent and copyright law." He asserts that it has been possible to sustain the distinction between ideas and their expression—albeit with controversy—in the print age. With the enormous changes wrought by ever quicker and cheaper, pervasive electronic communications means, Cleveland champions the information commons and the radically different rules for sharing information. In an oft-quoted editorial, he asks, "How can intellectual property be protected? The question contains the seeds of its own confusion: it's the wrong verb about the wrong noun."[11]

Recently, it has become fashionable to speak of the end of copyright because, in addition to its existing flaws and limitations, current copyright law does not address the realities of the kind of scholarly communication increasingly available in the electronic information age.[12] Reasons advocated for this view are as follows:

- In electronic communications, it can be impossible to distinguish between ideas and the expression of those ideas. In a software program written in some language or configuration, how does one reproduce the idea, which is permissible by copyright law, without reproducing the expression of that idea, which is not?

- In electronic communications, copying becomes indispensable to even reading an idea. According to the International Federation of Reproduction Rights Organization's Working Group on Electrocopying, any storage, display, manipulation, dissemination, and reproduction of an electronically stored work would constitute copying.[13] According to the IFRRO, any act of reading would incur a charge. Yet existing copyright law does not constrain the use of an idea or of the work itself; it simply sets rules about copying.
- Copying can be easily metered only the first time information is read. After that, it may become difficult to determine whether a work has been recopied or forwarded to other users. While means of deterring unauthorized usage can be created, users will avoid purchase of copy-protected materials if other options are available. Auto-deterrents can fail: they can damage users' software or disks, and they can be decoded. Copying hesitations deter publishers from using new technologies that are potentially quicker and cheaper for users to access.
- Works can be combined, recombined, accessed, and used in ways not anticipated by the original creator or compiler. Consider, for example, hypertext. O. B. Hardison in his book *Disappearing through the Skylight* describes reading Shakespeare's *The Tempest* in hypertext.[14] The initial scene of the shipwreck offers the "reader" the ability to delve into explications of shipwrecks, maps of the New World, London theaters, and magic. Can such an experience be remotely like taking the play home to read one evening? Can readers be said to have shared the experience of reading *The Tempest* when each pursued different discourses and enrichments during the course of reading the play?
- Electronic technologies encourage widespread communication, data sharing, and collaborative work. The number of authors may be sizable or it may, indeed, become very difficult to determine precisely who the authors are. Their intentions or wishes about reuse may vary. Work may be amended and annotated. Its packaging disappears. Interactive "journals" appear. The sharing enabled in the electronic environment leads to what has been termed the "collaboratory."[15]

RESPONSES TO PROBLEMS IN COPYRIGHT LAW

Clearly, substantial controversy exists about the 1976 copyright law, to some degree for traditional paper publishing and to a much greater degree for electronic communications. Resolutions put forward by various experts include:

- Use the existing law, amending it as needed, recognizing that amendments take a long time, lag behind technological developments, and produce statements that immediately displease a number of the parties involved.
- Supplement the law with contracts or licenses that grant permission that might otherwise violate existing laws. Licenses, as for CD-ROM, might limit a purchaser's sharing of information he or she rents but does not own. Or they might authorize a central agency, such as the Copyright Clearance Center (CCC), to collect user fees which are returned to the legal owners.
- Adopt a *sui generis* option. Robert Oakley of Georgetown University's law library suggests that some things simply do not fit existing intellectual property laws and that the law might, rather than stretching itself, create new laws that meet the special requirements of each mode and situation.[16]
- Throw the act out or revise it completely.[17]

In 1886, Congress asked the Office of Technology Assessment (OTA) what would be the appropriate course of action to take in regard to copyright law, given the emergence of new technologies. In its report, the OTA argued that new technology needs could be solved only by significant changes in the intellectual property system. Describing the thinking behind the OTA's report entitled *Intellectual Property Rights in an Age of Electronics and Information*, Linda Garcia explains that the 1976 copyright law, in spite of attempting to build in language for any technology as yet unintroduced, has been unsuccessful. That law protects "original works of authorship fixed in any tangible medium of expression now known or later developed."[18] Nonetheless, no sooner was the new law passed than it needed to be amended, first for software, then for audio- and videocassettes.

OTA staff reasoned as follows: First, the printing press gave rise to the need for permission to copy, or copyright, because it became possible to reproduce works, and that process created a marketplace. The relatively limited number of publishers had the presses and skills to copy and market. New technologies expanded this ability to copy to virtually everyone, quickly. Second, intellectual property and the development of technology are part of the social system. Technology affects society and its values, behaviors, and expectations, and these in turn affect the law. Because technology is introducing sweeping changes, intellectual property needs to be fundamentally reconsidered, along with related concerns of authority, access, privacy, integrity, and liability.

WHERE DO WE GO FROM HERE, OR IS THERE OWNERSHIP BEYOND COPYRIGHT?

It is fair now to offer a personal view of intellectual property law, specifically copyright. Defining ownership of the expression of ideas is a particularly useful concept, and we need such a law. As someone once remarked, an individual has to know who the giants are in order to stand on their shoulders or even to cry on them. The law does indeed have flaws and limitations, and it lags behind societal developments. Nonetheless, it enables intellectual work to be produced and disseminated in a comparatively orderly fashion. Discarding the law would cause chaos. The current U.S. copyright legislation was devised after much bloodletting, anguish, and compromise, and the fundamental idea will not be abandoned. It was written to be technology neutral, which suggests that revisions are likely to attempt to incorporate new technologies rather than to except them or treat them specially. Some suggest that the copyright law could be altered to exempt scholarly ideas or to place them within a special category. For instance, some propose that scholarly articles might legally come out from under copyright provision in a very short time period, such as two to five years. However, such a compromise seems unlikely for the small, hard-to-define subset of writing or application known as scholarship. The copyright law will persevere; we will continue amending it; we will work with it.

That opinion offers no solution to the vexing problems for scholarly publications as outlined above. Given the limitations of existing copyright legislation in advancement of the scholarly arts and sciences, and the time and difficulty of changing such complex legislation, with its many proponents and opponents, are there other solutions? As we have discussed, being the creator of scholarly writings has offered relatively little hope because of the way in which scholars and creators have reassigned ownership. The funder of research, whether university, state agency, or federal government agency, has by tradition not retained ownership for the public good.

Hope does exist, however, and it rests in changing the ownership of scholarly ideas as opposed to or in addition to modifying copyright legislation. Those who speak about the "crisis in scholarly publishing" encourage a change in ownership, as opposed to copyright, by nudging the not-for-profit sector— university presses and scholarly and professional societies—to become central again to the distribution of scholarly information. Librarians have been assertive in suggesting that such groups "take back" publications that have been contracted out to the commercial sector, that they become greater risk-takers in starting new publications. In parallel, the library community is encouraging academics to write for the not-for-profit sector when that is possible. The purpose of encouraging movement to the not-for-profit sector is to make materials more accessible through the greater affordability that seems to result from not-for-profit ownership of scholarly writings. It would also strengthen competition.

As the expression of scholarly ideas becomes less and less affordable, the question of whether . . . any copyright law, is the *right* law for sharing scholarship is again raised in some quarters.

Closer to the issue of retaining ownership of ideas is the suggestion that academic administrators provide incentives for their own university presses to make a stronger showing in scholarly communication and for their faculty to publish in university outlets. This process would keep a larger proportion of scholarly copyrights within academia and enable universities to make generous sharing possible among their libraries, without running afoul of fair use provisions and the CONTU guidelines. Another feather of hope is in reminding authors that they may grant limited or restricted rights to publishers. This modification could be effective if universities created standard copyright assignment forms that any of their faculty could routinely submit to publishers—forms that would limit the extent of rights by time or format. No single scholar could be as effective as an entire university or a group of universities that choose to retain rights to their institution's authored output.

A few such shifts are occurring, but fundamental changes take a long time. It may be that not-for-profit publishers have lost too much ground over the past three decades to large for-profit paper publishers. At a November 1990 meeting of the Coalition for Networked Information (CNI), Stuart Lynn of Cornell University reported that only 15 percent of scholarly publication today is done from universities. And that is a generous 15 percent, including the work of individual departments on campuses. However, electronic networks and complementary technologies are in place in many government agencies and are increasingly pervasive in academic institutions; they offer hope. Government and academe are spending hundreds of millions of dollars a year to "wire" the nation. Champions of a National Research and Education Network (NREN) have put forward legislation that will speed up the linkage, acceleration, and development of such networks. This massive investment is clearly offering information-generating and -distributing opportunities to the education and research sector. Universities, colleges, and research laboratories could find themselves in a position of Samsonian strength as owners of the means of scholarly and research communication and distribution—provided that at least some content ownership is retained within academia, whether by authors or authors in collaboration with their institutions. That is to say that at least academe has a genuine window of opportunity.

"I HAVE A DREAM"—OF UNIVERSITY-BASED PUBLISHING

Several librarians have dreamed about university-established networks in scholarly publishing. An early statement was made by Patricia Battin, now president of the Commission on Preservation and Access.[19] In the April 12, 1989, issue of the *Chronicle of Higher Education*, Richard Dougherty imagined universities regaining control over their own scholarly output through commitments to computer and telecommunications technologies. "Why not marry," he asks, "the technological capabilities of computer centers with the expertise of university presses as producers and libraries as retailers and distributors, to expand the university's role?"[20] An additional—probably the most valuable—benefit would be regaining copyright control for the universities.

In a widely discussed article, Sharon Rogers and Charlene Hurt asserted that scholarly journals are obsolete as the primary means of communicating current scholarly findings. Their call also was for a university-based publishing system into which scholars from all disciplines would place their findings, according to subject. The works would be available to all readers, who would be free to comment on—in effect, peer review—the pieces. After six months, a work would be revised and finally reviewed by a board of colleagues, and the article would be entered into the system with annotations about its quality. Rogers and Hurt imagined such a system, constructed from the top down, to be possible within five years.[21]

The copyright law will persevere; we will continue amending it; we will work with it.

In June of 1990, Jerome Yavarkovsky, from the State Library of New York, exhorted at the start-up meeting of the ARL/Cause/EDUCOM Coalition for Networked Information that "it is time to talk about joining institutions in a vast and powerful system for scholarly communication. . . . In traditional terms, we are the authors, the editors, the paper mills, the printing presses, the binderies, and the readers. We are part of a perfect, vertically integrated enterprise. . . . Our universities and other research organizations have the choice: Control electronic publishing to our economic and intellectual advantage, or surrender the initiative and the future of scholarly communication to others."[22]

A statement of vision presented at the CNI November 3-5, 1991, meeting called for research and educational institutions to seize the opportunities presented by technology and the opportunities to print knowledge on demand. It described Information Technology Imaging (ITI) projects and discussions, and it referred to pioneering projects at Cornell, Harvard, Princeton, Virginia Tech, and the University of Michigan in partnership with Xerox to produce publication on demand.[23]

The Association of Research Libraries (ARL) October 1990 membership meeting featured a daylong interactive program called "The Future of Public Services in the Year 2000." Futurist Robert Weber presented five different scenarios for sources of information. In one of them, "University Consortium Creates 'Info-Online'," he sketched a consortium of forty leading universities creating the largest online repository in the world, in cooperation with university presses, societies, and other consortia. The result would be potentially low-cost online information and heavily subsidized access to scholars and students.[24]

Apparently, the idea of university-owned and -based scholarly publishing is in the air, or at least in the air breathed by librarians and academics. Exciting digitizing projects being ventured at the National Agricultural Library (NAL) and at North Carolina State; calls for project proposals by CNI; and statements of intent from major universities about becoming electronic information providers—such projects abound and offer hope. Networked publishing is also exciting and energizing individual academics. The first edition of an ARL directory of scholarly networked publications (summer 1991) lists some thirty academic journals, twice that many newsletters, and hundreds of academic discussion lists. Much of this work has flowered in recent months.

ELECTRONIC "JOURNALS"

On October 8, 1990, ARL convened a meeting of refereed electronic journal editors with the North Carolina State University Library as host institution.[25] In attendance were editors from eight of the e-journals either already in existence or proposed, as well as collections, public services, technical services, and systems librarians. The projects range among disciplines: adult education, postmodern culture, communications, hospitality studies, and librarianship. Two science journals are due to appear next year. The lag exists because of technical developments needed to transmit nontext data.

The projects share a great many characteristics. They are from the not-for-profit sector, all but one originating at the grass roots: faculty members from within universities. All are either free or comparatively inexpensive. Those that have produced issues are experiencing rapid circulation growth. Innovative, experimental trailblazers in networked publishing, they are relatively unknown. The creators are excited and impatient, with a philosophy of "let's put out some issues and let the problems be solved as they come along." All the university-based projects are generous about ownership, imposing either no copying constraints or very generous allowances. One electronic journal editor commented on ownership of ideas:

> Perhaps [some]one might try to purloin an idea and publish it as his own. So what? The peers saw it first and know whence it came, and where and when, with the archive to confirm it. . . . The few big ideas that there are will not fail to be attributed to their true source as a result of the net. As to the many little ones, the "minimal publishable units," well, I suppose that a scholar can spend his time trying to protect those too — or he can be less stingy with them in the hope that something bigger might be spawned by the interaction. . . . I am inclined to think that for the really creative thinker, ideas are not in short supply. . . . Einstein was asked in the '50s by some tiresome journalist what activity he was usually engaged in when he got his creative ideas, and he replied that he really couldn't say, because he had only one or two creative ideas in his entire lifetime.[26]

Everywhere in the 1990s there seems to be the whiff of a changed scholarly publishing system, shareable, affordable, and accessible, its main function to spread ideas as widely and quickly as possible. The vision is possible, of course, because of a revitalization of two relatively ancient principles: that scholars own and share ideas and that a university's role is to distribute those ideas widely. Will the vision come to pass? Can essentially materialistic individuals and organizations conceive a new and different system? Would universities be any more altruistic as scholarly information publishers than those publishers some now accuse of overcharging or even price gouging? "The answer," as on a sampler in the apartment of a friend, "is a definite maybe, and that's for certain."

ARE UNIVERSITIES ALTRUISTIC?

Dougherty promoted the idea of university-based publishing as one that makes a lot of dollars. Rogers and Hurt argued more practically: to whit, the savings effected from funding spent last year by academic libraries could support such a publishing system. (About 40 percent of the 1.25 billion acquisitions dollars spent by the United States' 3,500 academic libraries comes from the ninety-four ARL university libraries.[27] The proportion of ARL university library budgets spent on serials runs about 18.7 percent.[28] For the remainder of the 3,500 academic libraries in the United States the percentage is only slightly less: about 16.7 percent.[29]) In supporting university-based publishing, universities could reduce the enormous amounts of money expended in buying back their scholarship and probably improve the effectiveness of communicating scholarly ideas.

Let us speculate that the silver cloud has a potentially stormy lining. Certain difficulties are involved in universities' undertaking publishing or commercial ventures. One difficulty is universities' comparative lack of experience in managing businesslike, risky, capital-intensive ventures. Academic years, budget structures, charters, and legislation may not lend themselves readily to such enterprises. Universities have, after all, gradually given over publishing of their intellectual output to outsiders. Perhaps intellectual ownership and distribution within the academy still does not strike enough of a chord to interest those who must fund and organize shifts in academic philosophy.

Another difficulty grows out of the relatively new fashion for collaboration, coalitions, and partnerships, specifically between the for-profit and university sectors. The University of Southern California's textbook project is a partnership between the university and McGraw publishers. Cornell and the Commission for Preservation and Access are collaborating with Xerox in a pilot project to test advanced technologies for recording deteriorating books as digital images.[30] In a broader endeavor, Merit, a consortium of IBM, MCI, and state-supported universities in Michigan, is forming a not-for-profit company called Advanced Network and Services, Inc. (ANS) to manage and operate the federally funded NSF network backbone.[31] Several universities have ties to research and development corporations, particularly in biomedicine.

Current copyright law does not address the realities of the kind of scholarly communication increasingly available in the electronic information age.

Such alliances are formed for the common good. Universities provide brainpower and corporations provide equipment and technology to achieve a project neither could accomplish alone. It might, devilishly, be reasoned that corporations also seek significant tax write-offs, which they can achieve with the fig leaf of a not-for-profit company, and that universities seek funding to make up for the increasing costs of doing research and the inability of the usual tax and tuition sources to provide funds. Already emerging from some partnerships are concerns about universities' financial vulnerability in ventures that may fail and about conflicts of interest in relationships. Financial interests may interfere with the university's rigor and honesty, its role as social critic and advocate for the public good.

Questions abound. How can faculty, with a stake in the outcome of a particular product, be detached and objective about it? They are not necessarily making altruistic choices about where to publish their articles, as we have seen. Does the loss of tax revenues, as for-profit organizations mutate into not-for-profit enterprises, exacerbate the problem of inadequate funding for education and social programs? If so, ultimately we will all pay higher taxes. Maybe we ought to agree to do that at the outset and not mix a milkshake of commerce and education. Does the creation of large profits in the not-for-profit sector make the institution vulnerable to a change in tax status (the lawsuit between Dialog and the American Chemical Society raises this issue.)?

Of course, electronic distribution is already changing ownership models substantially. Because of the ease of copying concerns outlined earlier in this paper, publishers tend to retain ownership of electronic materials. This is done in charging "by the drink" as users access remotely stored information. Or libraries purchase electronic data packaged as CD-ROM, for which they generally pay a subscription, not for ownership, but for a license that restricts the breadth of distribution of that information. Legally, ownership remains with the publisher, and the library leases the information. Theoretically, at least, the CD-ROMs must be returned if the library cancels.

This publishers' "insurance policy" potentially leaves libraries owning nothing at all, except for older and print materials. The newly emerging model of library nonownership, especially via networking, in which libraries do not even see a physical product, has profound implications for universities' intellectual birthright, libraries' services, and the body of knowledge. Cooperative collection development and wide resource sharing among educational and research institutions may become virtually impossible in the electronic age, as long as the sole copyright owners continue to be external publishers. These implications, in theory, can be fully addressed and resolved if authors and their institutions, rather than distanced commercial publishers, were intellectual property owners.

Having spent a little time cautioning about universities as owners, I still have the well-founded hope that universities will choose to become nurturers and players in scholarly output. Their vital participation presents a tremendous opportunity for scholarly publishing and for competition within the system. I have the hope that, as owners of publishing systems, universities would use that ownership in good faith and good will to share ideas quickly and inexpensively. The prospects are far better than any we have had in the past forty years to accomplish this freer access to information and knowledge. We need people with idealism, enthusiasm, and conscience to promote changes in ownership of ideas and their distribution, and librarians are key in such a movement.

Woody Allen said that Emily Dickinson was wrong. Hope is not the thing with feathers—the thing with feathers is my cousin, and we sent him to an analyst in Vienna. Whether with or without feathers, we do have hope. In *Annie Hall*, Woody Allen—commenting to Diane Keaton, who has parked her car quite a distance from the sidewalk—said, "We can walk to the curb from here." If we move scholarly publishing in from the busy commercial street and closer to the curb and to home, we will have accomplished something worth our while.

REFERENCES AND NOTES

1. Adapted from Karen Hunter, "A Publisher's Perspective," *Library Acquisitions: Practice and Theory* 14:5 (1990).
2. The purpose of the 1909 act, often quoted in writings about it, was stated as follows:

   The enactment of copyright legislation by Congress under the terms of the Constitution is not based on any natural right that the author has in his writings, for the Supreme Court has held that such rights as he has are purely statutory rights, but on the ground that the welfare of the public will be served and progress of science and useful arts will be promoted. . . . Not primarily for the benefit of the author, but primarily for the benefit of the public such rights are given. Not that any particular class of citizens, however worthy, may benefit, but because the policy is believed to be for the benefit of the great body of people, in that it will stimulate writing and invention to give some bonus to authors and inventors.

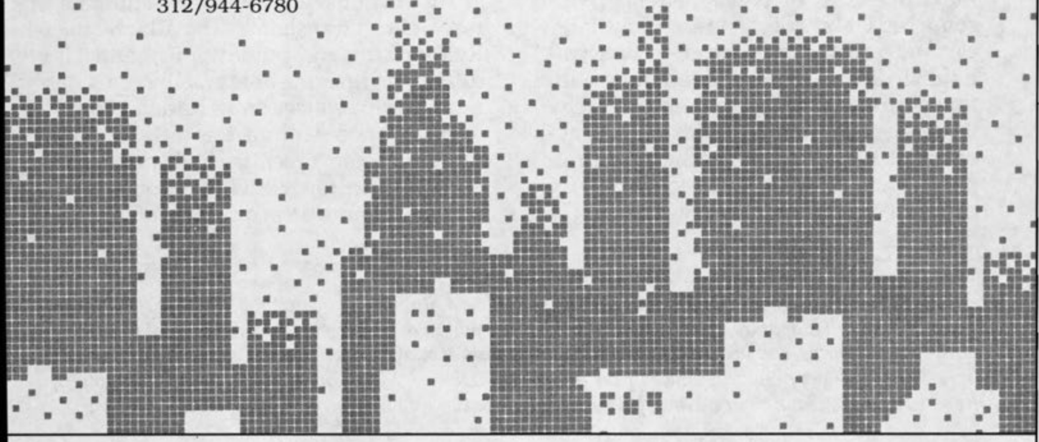
   Quoted in the U.S. Congress, Office of Technology Assessment, *Intellectual Property Rights in an Age of Electronics and Information*, OTA-CIT-302 (Washington, D.C.: U.S. Government Printing Office, April 1986), p.3.
3. Two recent articles provide insights into ingredients affecting the output and pricing of scholarly journals. David W. Lewis, "Economics of the Scholarly Journal," *College & Research Libraries* 50:674–88 (Nov. 1989), describes the economic characteristics of scholarly journals and their tendency toward "natural monopoly." Gary D. Byrd, in his excellent article, "An Economic 'Commons' Tragedy for Research Libraries: Scholarly Journal Publishing and Pricing Trends," *College & Research Libraries* 51:184–95 (May 1990), observes the damaging effects of unreined writing and purchasing on both pricing and human knowledge.
4. Substantial documentation appears for this assertion. See the annual price indexes published in *Library Journal* every April 15th by the American Library Association's Library Materials Price Index Committee; the Faxon Company's "Periodical Prices Updates" published from time to time in *Serials Librarian*; and Ann Okerson, "Of Making Many Books There Is No End," in *Report of the ARL Serials Prices Project* (Washington, D.C.: Assn. of Research Libraries, 1989), particularly fig.1, p.7–8 and the review of discipline-based pricing studies, p.30–31.
5. Chuck Hamaker, "Costs of Scientific Journals Increase at Double the Rate of Research Costs," *ARL: A Bimonthly Newsletter of Research Library Issues and Actions* 153:1–2 (Nov. 7, 1990).
6. For a written description of this trend in scientific journals in the early 1980s, see Howard J. Sanders, "Troubled Times for Scientific Journals," *C & EN* 6:31–40 (May 30, 1983). Conversations at the Society for Scholarly Publishing 9th Annual Top Management Round Table in Alexandria, Virginia, September 12–14, 1990, reaffirmed these

drop-off rates. At a convocation held at the University of Colorado in April 1991, a major STM publisher affirmed recent cancellation rates edging up to 5 percent for its journals.

7. There are no precise published data about this situation, which is nonetheless an assertion widely made within the research library community. See Okerson, "Of Making Many Books," p.21.
8. These definitions are taken from Copyright Law of the United States of America, contained in Title 17 of the United States Code, Revised to September 30, 1987.
9. Kenneth D. Crews, "Large-Scale Study of University Copyright Standards Reveals Surprising Trends in Policy-Development and Legal Interpretations," press release from the Graduate School of Library and Information Science, University of California–Los Angeles, August 1, 1990.
10. The seed of this thought comes from conversations with John R. Haak, director of libraries at the University of Hawaii, at a recent Association of Research Libraries membership meeting.
11. Harlan Cleveland, "How Can 'Intellectual Property' Be 'Protected?'" *Change* 21:10–11 (May/June 1989).
12. Robert J. Kost, "The End of Copyright," in *Intellectual Property Rights in an Electronic Age, Proceedings of the Library of Congress Network Advisory Committee Meeting, April 22–24, 1987* (Washington, D.C.: Library of Congress), p.19–25. In fact, the suggestion of abolishing or radically changing copyright law resurfaces in many recent critiques of the law, such as in the proceedings of the above meeting, in the Network Advisory Council meeting of 1988, in U.S. Congress, Office of Technology Assessment, *Intellectual Property Rights*, and in several important pieces in the May/June 1989 issue of *Change*: Francis Dummer Fisher, "The Electronic Lumberyard and Builders' Rights: Technology, Copyrights, Patents, and Academe," and Steven W. Gilbert and Peter Lyman, "Intellectual Property in the Information Age: Issues beyond the Copyright Law," *Change* 21:12–34 (May/June 1989).
13. *Report of the IFRRO Working Group on Electrocopying*, submitted by Charles Clark, IFRRO Chairman, at IFRRO's 1989 Annual General Meeting, Rome, October 17–20, 1989.
14. O. B. Hardison, *Disappearing through the Skylight* (New York: Viking, 1989), p.263.
15. This concept is developed in *Towards a National Collaboratory*, the report of an invitational workshop at Rockefeller University, March 17–18, 1989.
16. Robert L. Oakley, "Intellectual Property Issues and Information Networks: A Background Report," in *Intellectual Property Issues in the Library Network Context, Proceedings of the Library of Congress Network Advisory Committee Meeting, March 23–25, 1988* (Washington, D.C.: Library of Congress, 1989) p.46–47.
17. Fisher, "The Electronic Lumberyard," passim; and Gilbert and Lyman, "Intellectual Property," passim.
18. D. Linda Garcia, "Information Exchange: The Impact of Scholarly Communication," *EDUCOM Review* 25:28–32 (Fall 1990).
19. Patricia Battin, "The Library: Centre of the Restructured University," *Current Issues in Higher Education* 84:25–31 (1983).
20. Richard M. Dougherty, "To Meet the Crisis in Journal Costs, Universities Must Reassert Their Role in Scholarly Publishing," *Chronicle of Higher Education* 35:A52 (April 12, 1989).
21. Sharon J. Rogers and Charlene S. Hurt, "How Scholarly Communication Should Work in the 21st Century," *Chronicle of Higher Education*, 35:A56 (Oct. 18, 1989).
22. Reprinted as Jerome Yavarkovsky, "A University-Based Electronic Publishing Network," *EDUCOM Review* 25:14–20 (Fall 1990).
23. Steering Committee, Coalition for Networked Information, "Information Technology Imaging: A Vision of a New Advanced Networking Utility," in *Resources Binder*, handed out for CNI Fall 1990 Task Force Meeting, Washington, D.C., November 3–5, 1990.
24. Background information forming a portion of the 117th Association of Research Libraries Membership Meeting, session of October 25, 1990. Weber and Northeast Consulting Resources, Inc., Boston, Massachusetts, have trademarked the concept of "future mapping," and Weber has custom-written scenarios for other information-as-

sociated groups, such as the Society for Scholarly Publishing (November 1989 Round Table) and the Association of American Publishers, Professional and Society Publishing Division (February 1990 Annual Meeting). A description of the scenario approach appears in "The Academic Enterprise in the 21st Century: The Impact of Computing," *ICPSR Bulletin* 1–6 (May 1990).

25. "ARL and North Carolina State University Library Convene Symposium of Electronic Journal Editors," *ARL: A Bimonthly Newsletter of Research Library Issues and Actions*, no.153:7 (Nov. 7, 1990).
26. E-mail correspondence of Stevan Harnad, editor of the journal *Behavioral and Brain Sciences*, as well as the refereed electronic squibb journal *PSYCOLOQUY*, shared with ARL.
27. Ann Okerson and Kendon Stubbs, "The Library Doomsday Machine," *Publishers Weekly*, 238:36–7 (Feb. 8, 1991).
28. Derived from *ARL Statistics, 1988–89*, (Washington, D.C.: Assn. of Research Libraries, 1990).
29. U.S. Department of Education, National Center for Education Statistics, *Academic Libraries: 1988*, NCES 90-374 (Washington, D.C.: U.S. Dept. of Education, 1988), p.iii.
30. "Cornell, Xerox, and the Commission Join in Book Preservation Project," *Newsletter of the Commission on Preservation and Access* (Aug. 1990).
31. "Merit, IBM, MCI Form New Company," *Link Newsletter* 3:4 (Sept. 1990).



Selected Reference Books of 1990–91

Eileen McIlvaine

This article follows the pattern set by the semiannual series initiated by the late Constance M. Winchell more than thirty years ago and continued by Eugene Sheehy. Because the purpose of the list is to present a selection of recent scholarly and general works of interest to reference workers in university libraries, it does not pretend to be either well-balanced or comprehensive. A brief roundup of new editions of standard works is provided at the end of the article. Code numbers (such as AD540 and CJ331) have been used to refer to titles in the *Guide to Reference Books* (10th ed., Chicago: American Library Assn., 1986).

DICTIONARIES

Macura, Paul. *Elsevier's Russian-English Dictionary*. Amsterdam; New York: Elsevier, 1990. 4v. $307.75 (ISBN 0-686-28865-3). LC 89-25762.

This imposing dictionary is the work of Paul Macura of the Department of Foreign Languages and Literatures at the University of Nevada–Reno. With some 240,000 entries, it is easily the largest and most comprehensive Russian-English dictionary available. Along with the more standard lexical fare offered by its predecessors, it provides broad coverage of scientific and technical terminology and colloquial speech based on material gathered in the course of Macura's years of work as a translator, as well as from surveys of Russian reference works. The author has also taken care to provide as much grammatical information as possible, indicating all irregular forms and changes in stress and consistently listing imperfective and perfective forms of the verb together. A well-designed and uncluttered layout likewise makes the dictionary a pleasure to use.

For its core vocabulary, the dictionary appears to draw heavily on the well-known but smaller *Oxford Russian-English Dictionary* (*Guide* AD669) even though that work is nowhere mentioned in the introduction or bibliography of sources. A comparison of a few parallel sections of the alphabet from the two works finds most of the Oxford text very closely echoed in the Elsevier work, down to the wording of definitions, choice of idiomatic phrase, use of a given word, and even examples. So close is the parallel that the Elsevier may almost be said to supersede the Oxford.

The dictionary is aimed at "students, researchers, translators, and all who use Russian language publications," and it is difficult to imagine how any library with a significant collection in Russian could decide not to acquire this title. At the same time, however, its high price and multivolume format will no doubt tend to make it more an acquisition of institu-

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tions than of individual researchers.—*R.H.S.*

GOVERNMENT PUBLICATIONS

Guide to Official Publications of Foreign Countries. Westfall, Gloria, ed. Bethesda, Md.: CIS, 1990. 359p. $179. LC 90-187873.

Gloria Westfall is a familiar and respected name in government documents librarianship, and this guide will enhance her reputation. Compiled under the aegis of the International Documents Task Force of the American Library Association's Government Documents Round Table, this "highly selective" guide "is a ready reference and acquisition tool" (Introd.) to documents produced by foreign countries (i.e., not the United States), excluding those with populations of fewer than 100,000.

It lists, alphabetically by country, publications in seventeen subject areas, including guides to official publications, bibliographies and catalogs, statistical yearbooks, legislative proceedings, development plans, censuses, court reports, and so on. Information provided for each entry includes the title in both the original language and English, acquisition information, and a brief description. Unfortunately, though understandably, the emphasis is on current documents, so the reader cannot learn, for instance, which earlier censuses for a particular country were compiled. Even at the price—extraordinarily high for a publication compiled through the American Library Association—any library fielding questions on international affairs will find this useful.—*M.C.*

TIME

The Time Dimension: An Interdisciplinary Guide. Das, T. K., comp. New York: Praeger, 1990. 344p. $45 (ISBN 0-275-92681-8). LC 90-31137.

Too often libraries look upon a title such as *The Time Dimension* as a problem. Where does a bibliography that treats fields as diverse as biology, history, psychology, physics, literature, and management belong on the shelf? But reference librarians will find this work extremely useful in answering readers' queries about perceptions and philosophies of time in various cultures and fields of research.

The editor, whose specialty is management studies, has compiled approximately 3,000 citations to books and articles in journals or book collections. Dissertations and theses, conference proceedings, and working papers have been excluded, as have materials that discuss time management and other practical applications of time usage. Entries, published for the most part from 1960 to 1988, are arranged alphabetically within chapters on topics such as "Anthropology and Culture," "Calendars and Clocks," and "Sociology." Though the volume does include an author index, the lack of a subject index makes negotiating some of the lengthier chapters on psychology and philosophy difficult. Otherwise, *The Time Dimension* provides a fine bibliographic starting point for many quite different fields.—*B.J.*

LITERATURE

The Feminist Companion to Literature in English: Women Writers from the Middle Ages to the Present. Blain, Virginia, Patricia Clemens, and Isobel Grundy, comp. New Haven, Conn.: Yale Univ. Pr., 1990. 1,231p. $49.95 (ISBN 0-300-04854-8). LC 90-70515.

This excellent and comprehensive biographical dictionary includes more than 2,700 women writing in English in a wealth of national traditions. It includes "not only works issuing from and reflecting the dominant ideologies of race, class, sexual practices; not only the canonized genres, but also diaries, letters, writing for children, and popular forms to which women have been relegated and which, often with joy, they have claimed" (Introd.).

Entries, which are limited to 500 words, focus on the lives of the writers and are well researched and written; in many cases they include quotations from the author, information about the publication and location of author's papers, and citations to biographical and secondary material. Citations to secondary literature are remarkably current. This is a fine source for information on

African women writers, and the editors have been generous in including authors like Mariama Ba, whose work was first published in French.

In addition to the biographical entries, nearly 100 topical entries discuss genres (e.g., diaries, letters, slave narratives), subjects (e.g., suffrage, education, abolition), criticism, and theory. *The Feminist Companion* is arranged alphabetically. A chronological index, listing authors in broad categories by birthdate, a list of frequently cited works, a list of the topical entries, and a list of cross-references complete the volume.—*S.S.*

Philippides, Dia M. L. *Census of Modern Greek Literature: Check-list of English Language Sources Useful in the Study of Modern Greek Literature (1824–1987).* MGSA Occasional Papers, no. 2. New Haven, Conn.: Modern Greek Studies Assn., 1990. 248p. $15 (ISBN 0-912105-01-1). LC 90-6441.

What a bargain this book is, and what a boon to those enthusiasts (who cannot read Modern Greek) of the works of Cavafy, Elytis, and Kazantzakis. Aimed "not at the specialist, but a wide variety of readers," this volume represents a unique contribution to the bibliography of Modern Greek studies, drawing together several thousand citations to English-language translations and works of criticism.

Arranged in seven chapters, the main body of the census is taken up by an alphabetical list of approximately 125 Greek authors, with citations to works by and about them. The other six chapters include bibliographic and reference sources; journals devoted to Modern Greek studies and special issues of literary journals that treat specific authors or topics; anthologies of both Panhellenic and regional literature; volumes of collected essays; and literary history. The personal names and titles index provides alternative transliterations and spellings.

The study of Modern Greek presents so many challenges to students, scholars, and librarians: the lack of a national or systematic bibliography, the absence of a standard transliteration scheme, and the paucity of U.S. collections of vernacular writings—all serve to discourage all but the most persistent novices. Philippides's *Census* should prove useful to both the beginning student and the advanced researcher.—*B.J.*

Proffer, Carl R., and Ronald Meyer. *Nineteenth-Century Russian Literature in English: A Bibliography of Criticism and Translations*. Ann Arbor, Mich.: Ardis, 1990. 188p. $49.50 (ISBN 0-88233-943-5). LC 89-18589.

This work represents the first comprehensive, single-volume bibliography devoted exclusively to English-language translations of and English-language research on the Russian literature of the nineteenth century, the golden age of Pushkin and Gogol, Turgenev and Tolstoy, Dostoyevsky and Chekhov. Begun by the noted Slavist and publisher Carl Proffer, it was completed after his death in 1984 by Ronald Meyer, who managed nearly to double the amount of material in Proffer's original files.

The book includes publications issued between 1890 and 1986, beginning with a survey of works of general scope: bibliographies, histories, handbooks and encyclopedias, monographs, conference proceedings, dissertations and articles on broad issues, comparative studies, anthologies of translations, and so on. The second, larger section treats a total of sixty-nine major and minor Russian writers of the period from Aksakov to Zhukovsky, including a few essayists and critics, listing translations and then critical works, the latter grouped by type (bibliographies, monographs, dissertations, and articles) and then alphabetically by author.

The translations cited (which include items published in journals and anthologies) are intended largely to supplement rather than supplant the Russian material already gathered by Richard Lewanski in 1967 for volume two of *The Literatures of the World in Translation* (*Guide* BD35), particularly in the case of the better-known authors. Proffer and Meyer's assembly in a single volume of references to critical writing in English on this period is unprecedented, although the degree of comprehensiveness naturally varies, with more selectivity shown in the cases of such renowned figures as Dostoyevsky and Tolstoy, who have been or would be effectively treated in individual bibliographies, and more exhaustive coverage employed in the cases of less well-known figures.

The bibliography fills an important gap, taking its place alongside such treatments of earlier and later periods as Anthony Gross and G. S. Smith's *Eighteenth-Century Russian Literature, Culture, and Thought* (*Guide* BD1328) or George Gibian's now somewhat dated *Soviet Russian Literature in English* (*Guide* BD1353). In light of the work's breadth and comprehensiveness, however, it is unfortunate that annotations are not provided. More regrettable is the absence of an index, especially given the grouping of entries by genre rather than by theme or subject and given the length of some of those sections (there are fifteen two-column pages of citations to articles on Chekhov, for example). Nonetheless, this is a book of unquestionable value, not only to specialists, but to any reader with a more than passing interest in Russian literature. It belongs in any library supporting the study of Russian literature or, indeed, European literature in general.—*R.H.S.*

Rothwell, Kenneth S., and Annabelle Henkin Melzer. *Shakespeare on Screen: An International Filmography and Videography*. New York: Neal-Schuman, 1990. 404p. $59.95 (ISBN 1-55570-049-7). LC 89-13509.

Shakespeare on Screen bears witness to the current preoccupation of literary scholarship with the problem of intertextuality, as well as to the new opportunities presented to scholarship by the video revolution. The filmography arises out of a much larger, National Endowment for the Humanities sponsored project directed by Dr. Annabelle Melzer of the University of Tel Aviv, aiming ultimately at the creation of a comprehensive international database of film and video performances, adaptations, and transformations of all dramatic texts. While this volume draws to some extent upon her research in the film archives of Western Europe, it is primarily the work Kenneth Rothwell, of the University of Vermont, a Shakespeare specialist, and, most appropriately, cofounder of the *Shakespeare on Film Newsletter*.

While this is by no means the first Shakespeare filmography, Rothwell has striven for and achieved an unprecedented degree of comprehensiveness, producing a guide to 750 productions in Western and Eastern Europe, the Americas, and Japan, constituting "a major share of the films and videos based on Shakespeare's plays that have been produced since 1899," the principal exception being a number of no longer extant silent films listed in Robert H. Ball's *Shakespeare on Silent Film: A Strange Eventful History* (London: Allen & Unwin; New York: Theater Arts Books, [1968]). (Rothwell has chosen to list and describe such films in his filmography only when he judges them to have been of major significance or interest, although it seems unfortunate, given the overall sweep of this work, that at least a simple listing of the others was not provided.) The work does not limit itself, moreover, to actual performances of Shakespeare texts, but includes adaptations, modernizations, and works loosely inspired by one or more of Shakespeare's works or containing scenes of a Shakespeare performance. Thus, alongside BBC performances, one finds here listings for productions of Pyotr Tchaikovsky's and Serge Prokofiev's *Romeo and Juliet* ballets, Akira Kurosawa's *Throne of Blood*, and Cole Porter's *Kiss Me, Kate*. There is also a substantial inventory of major documentary films and videos about Shakespeare and his times and about the staging of Shakespearean works.

The work opens with an essay by Rothwell outlining the major trends in film and video performance of the bard's work. It is followed by descriptions of the individual productions, grouped by title and, within each title section, chronologically. A boldfaced heading briefly describes the film or video that follows and the nature of the work (adaptation, excerpt, etc.). Confusingly, this heading sometimes applies to a group of entries rather than a single entry, making the text a little difficult to scan in places. The heading is followed by the numbered entry itself, which provides the title as found on the chief source of information and any series statement. Information is then furnished, when available, on the history and significance of the production, highlights of the action, and critical reception, including selected quotations from and citations to reviews and other literature. Next comes a basic material description, detailing the medium, whether or not there is sound or color, the running time, the language or languages of the performance, the type of video, and so on. Following this are a listing of members of the cast and individuals involved in the production, an indication of archives or distributors where the work may be found, and even some current rental prices. To be sure, the amount of detail varies greatly, depending on whether the film was available to Rothwell for viewing (he was able to screen about half of them, he reports) or on the degree of information provided by other sources if the film was not.

Use of the material is facilitated by several indexes to cited sequence numbers, series and genres, years of production, actors and speakers, production teams (including producers, directors, cinematographers, composers, scenarists, etc.), and authors and critics. Extensive additional information enables the sequence number index to function as well as a detailed table of contents, and the chronological index to provide a fascinating overview of the changing focus of film and television treatments of Shakespeare. In addition, a selected bibliography with useful annotations and a listing of the addresses of film archives and distributors are provided at the end of the work.

This volume is in many ways a model reference work, serving both as a guide and finding aid to specific works and as a thought-provoking overview of twentieth-century trends in the presentation and treatment of the central figure in English literature. It promises to be a valuable tool for researchers, as well as an important resource for teachers, and probably belongs in any serious humanities collection. Coming years will no doubt see an increasing integration of different media into scholarship, and this work seems to point the way to the riches that such encounters will be able to produce.—*R.H.S.*

Yellin, Jean Fagan, and Cynthia D. Bond. *The Pen Is Ours: A Listing of Writings by and about African-American Women before 1910 with a Secondary Bibliography to the Present.* The Schomburg Library of Nineteenth-Century Black Women Writers. New York: Oxford Univ. Pr., 1991. 349p. $29.95 (ISBN 0-19-506203-5). LC 90-41447.

This fine, comprehensive bibliography is presented in five parts: writings by and about women who produced separately published works; writings by and about women whose dictated narratives or biographies were published before 1910; women whose works appeared only in periodicals and collections; women who were not writers but who were the subjects of published writings; and a topical listing of items written about, but not by, African-American women published before 1910.

The listing of the writings of eighty black American women who published at least one work before 1910 includes books, periodical and newspaper publications, works published in anthologies, reprints, published letters, and works in the *Black Abolitionist Papers* microfilm set (New York: Microfilming Corp. of America, 1981). Secondary references include biographical directories, essays in periodicals, and books (giving exact page numbers when a book is not indexed). Manuscript collections are cited but not described. Part five lists works about African-American women published before 1910 on a variety of topics, including the arts; education; employment; health and medicine; literature and journalism; marriage, family, and the home; religion; reminiscences; and travellers' accounts. In addition to searching bibliographies, periodical indexes, library catalogs, and journals, the compilers have made use of the index of Cornell University's *Black Periodical Literature Project*, an ongoing project to index poems, stories, and book reviews published in nearly 1,000 periodicals.—*S.S.*

ARCHITECTURE

Encyclopedia of Architecture: Design, Engineering & Construction. Wilkes, Joseph A., ed.-in-chief; Packard, Robert T., assoc. ed. New York: Wiley, 1988–1990. 5v. $850/set (ISBN 0-471-63351-8/set). LC 87-25222.

This work is the single most comprehensive encyclopedia on architecture and building construction now available in these fields. "It includes all aspects of architecture and engineering from the standpoints of design, education, regulation, and other myriad aspects of the profession, as well as the construction industry as a whole," (Pref.) including technology, law, and economics.

Published serially in five volumes between 1988 and 1990, the *Encyclopedia of Architecture* is a major addition to the more limited, usually single-volume reference works that have come before. It comprises more than 600 articles on architects, architectural and engineering firms, building types and components, professional associations and activities, architectural styles, standards, and specific disciplines within the field, such as acoustical design, lighting, architectural photography, historic preservation, and architectural literature.

Signed articles of from one to ten or more pages, alphabetically arranged, have been contributed by an international group of architects, educators, engineers, industry representatives, and professional organizations under the editorial guidance of the American Institute of Architects. Each volume provides a table of contents and a supplement of late entries. Volume 5 includes a full index. The subject coverage is very broad and, in some respects, inconsistent. For example, "Latin American Architecture" and "West African Vernacular Architecture" are both major articles, but there are no entries for "Scandinavian Architecture" or for "Vernacular Architecture" for any other area in either the index or the tables of contents. Coverage of architects emphasizes the twentieth century, with a few important historical architects such as Christopher Wren, Andrea Palladio, Alberti, and Robert and James Adam, but important architectural writers such as Ada Louise Huxtable are cross-referenced to "Media Criticism." Readers are better served in this area by the *Macmillan Encyclopedia of Architects* (*Guide* BE271), which lists more than 2,400 biographies of architects from ancient times to the present and from all geographical regions.

The technical articles and those on building materials, types, and styles are well-illustrated with photographs, plans, elevations, sections, tables, and diagrams. Useful conversion tables and an abbreviations list begin each volume. Bibliographies of varying lengths conclude each entry. Geographic access to cities or specific buildings is through the index under country, then by city and building, with the exception of the United States, which is by state, then city and building. Only the White House and the U.S. Capitol are given individual articles. Here too the *Macmillan Encyclopedia of Architects* is more comprehensive and has a separate index to individual buildings.

Intended as "an encyclopedia which would serve . . . as a first source of information with sufficient coverage to satisfy the needs of the average reader," this work provides sufficient scope, in most cases, to meet those requirements, but at this price may be out of reach for users of any but the most comprehensive collections.—*B.S.-A.*

POLITICAL SCIENCE

Dictionnaire des ministres de 1789 à 1989. Sous la direction de Benoit Yvert. Paris: Perrin, [1990]. 1,028p. (ISBN 2262007101).

While the comprehensive national biography for France is slowly progressing, we have seen a number of specialized biographical dictionaries coming out. The most recent addition to this group of biographical dictionaries by profession or specialty covers cabinet ministers from Jacques Necker, who became minister of finances on July 15, 1789, to Michel Rocard, former prime minister. Some 1,700 men and women are included, with the participation of forty contributors.

The book is divided by historical period, such as "Révolution et Empire" and "Cinquième République." Within each of these seven divisions, biographical entries are presented in alphabetical order by name. The general index is a handy list in a single alphabetical sequence of all people included in the volume and the names mentioned in the body of biographical entries.

Each entry, which varies in length, contains the minister's full name, place and date of birth and death, offices occupied with dates, and, for some entries, family and educational background. The emphasis is, however, on the political career of each minister and his accomplishments in office, which makes it more of a historical dictionary than a purely biographical one. As such, this book should be useful for any scholar of French history and contemporary politics.—*J.S.*

Political Quotations; Baker. Daniel B., ed. Detroit: Gale, [1990]. 509p. $39.95 (ISBN 0-810349295). LC 91-133490.

This new collection of political quotations offers more than 4,000 entries "relevant to the modern world" (Pref.). The statements are drawn from sources worldwide and from all time periods, with post-World War II citations accounting for more than one-third of the total entries. Sources of the quotations range from Bill Cosby and George Burns to such corporate bodies as UNESCO, but the majority are from politicians, public officials, and literary authors.

The numbered entries are arranged under very broad subject headings, such as "Democracy," "Expressions and Phrases," and "Taxation and Budgets." A chronological arrangement within each subject heading allows the user to see how thought on a topic has changed or remained the same over a period of time. In addition to the authors of the quotations, the source document and date are provided in the main entry (but not the page). Foreign quotations are given in English, but the original language quotation also is provided. While the keyword index gives more detailed access to the quotations than do the broad subject groupings, not every word in every quotation is listed, nor does every keyword entry list all occurrences of a word, which poses some difficulty and can lead to confusion. Also, the entries in the keyword index are listed in order by the entry number, which requires the user to read through all the listings to identify possible relevant citations. The author index usually gives birth and death dates, as appropriate, and a brief description to help identify the individual and give some context to the quotations. References are made to both the subject grouping and the entry numbers.

Despite some of the drawbacks in the keyword index and the inevitable overlap with other sources of quotations, *Political Quotations* is a helpful reference tool. With its emphasis on contemporary sources and subjects, it should be in most general or subject-related reference collections.—*B.K.*

SOCIOLOGY

Encyclopedia of Homosexuality. Dynes, Wayne R., ed. Reference Library of Social Science 492. New York: Garland, 1990. 2v. 1,440p. $150 (ISBN 0-8240-6544-1). LC 89-228128.

Designed for a wide range of readers, from the high school student to the scholar, this useful encyclopedia has more than 770 signed thematic, topical, and biographical articles, many with brief bibliographies. Both male and female homosexuality are covered, and the editor has attempted to give all sides of controversial or disputed areas. No biographies of living people are included, although people still living may be discussed in a topical article. The articles are arranged alphabetically; there is a detailed list of "entries grouped by major topic and discipline" at the beginning of volume one and a subject index that includes references to individuals mentioned in the articles. Unfortunately, the subject index could use more work; the entry for England, for example, lists more than 100 page references with no further subject breakdown. The deliberate neutrality of the encyclopedia often makes the writing bland and stilted; nevertheless, this set should be a welcome addition to any reference collection. For the price, though, the publisher could have provided a sturdier binding.—*M.C.*

AFRO-AMERICAN STUDIES

Black Americans: A Statistical Sourcebook. Garwood, Alfred N., ed. Boulder, Colo.: Numbers and Concepts, [1990]. 340p. $47.50 (ISBN 0-929960-03-3). LC sn90-2852.

Statistical Record of Black America. Horton, Carrell Peterson, and Jessie Carney Smith, eds. Detroit: Gale, [1990]. 707p. $89.50 (ISBN 0-8103-7724-1). LC 90-2242.

These two welcome works pull together statistical information from many different publications and present it in concise and convenient formats. *Black Americans,* which is intended to be an annual, presents data drawn from the federal government, for the most part Bureau of the Census figures taken from the *Statistical Abstract of the United States.* Tables are arranged in eight chapters, which cover basic demographic and population information, vital statistics and health, education, politics and government, crime and law enforcement, labor and employment, income, and miscellaneous topics. Tables provide source information, special notes, and some explanatory definitions. Especially helpful is the glossary at the end of the volume, which defines terms as basic as "mean" and "average" and as specialized as "disability day" and "uniform crime reporting." A subject index also is included.

Though *Black Americans* contains much historical information, *Statistical Record of Black America* is the more comprehensive work. Comprised of 963 tables, pie charts, and graphs, *Statistical Record* draws on public and private sources, including journal articles and commissioned studies. The material is arranged in nineteen chapters, encompassing topics such as education, the family, the professions, and sports and leisure. Sources are provided for each table, and, in cases where data are republished from a compilation, the primary publication is given as well. The volume concludes with a bibliography of statistical sources and a subject index. Though some of the information presented here has appeared in other recent Gale publications, the handiness of this *Statistical Record* should make it a valuable ready reference tool.—*B.J.*

WOMEN'S STUDIES

Women's Studies: Papers Presented at a Colloquium at the British Library 4 April 1989. Gaur, Albertine, and Penelope Tuson, eds. British Library Occasional Papers, no.12. London: British Library, 1990. 189p. £24 (ISBN 0-7123-0184-4).

The twenty-one papers presented at this colloquium address subjects ranging from "Suffragettes and Saris: Resources for Women's Studies at the India Office Library" to "Women in the Soviet Union from 1917 to the Present: Sources for Research." Although the focus is on the collections at the British Library, papers addressing the general questions of methodology and use of specific types of material will be of particular interest to American scholars.—*S.S.*

Robinson, Jane. *Wayward Women: A Guide to Women Travellers.* Oxford: Oxford Univ. Pr., 1990. 344p. $29.95 (ISBN 0-19-212261-4). LC 89-39701.

This engaging guide to firsthand travel accounts lists "some four hundred writers, all using English as a first language, mostly of British extraction, and always travelling beyond the frontiers of their native land. A biographical sketch of each lady is headed by the brief first edition details of her travel accounts, including the books' titles and imprints, pagination, and the number and nature of their illustrations" (Pref.). The entries are organized into thirteen chapters with colorful titles (e.g., "Untrodden Peaks and Unfrequented Valleys" and "Unfeminine Exploits"), each with a short introductory essay. Author and geographical indexes and a collection of maps complete the work.

The author's wit and enthusiasm ensure that this will be a useful reader's advisor. Unfortunately, it lacks the citations to reprints and secondary literature that would make it invaluable to reference librarians.—*S.S.*

Women's Studies Index. 1989– . Boston: G. K. Hall, 1991– . Annual. 502p. $125. LC sn90-15083.

Established in response to the "proliferation of both popular and scholarly journals focusing on issues of concern to women" (Pref.), *Women's Studies Index* provides access to articles, reviews, and creative writing appearing in seventy-eight periodicals. The titles represent a broad spectrum of writing on women and feminism from the popular (*Family Circle*) to the scholarly (*Journal of Women's History*), from the general (*Signs*) to the specialized (*Camera Obscura*), from the mainstream (*Feminist Studies*) to the alternative (*off our backs*).

Authors' names, personal names as subjects, subject terms, and cross-references are arranged in a single alphabet in the volume. Book, film, music, play, and video reviews are indexed under the name of the author of the work, the name of the reviewer, and appropriate subject headings; they are also listed under special headings, which include Book Reviews, Film Reviews, and Music Reviews.

While considerable overlap exists in coverage between the new *Women's Studies Index* and the long-running *Women Studies Abstracts* (*Guide* CC502), there are also significant differences. *Women Studies Abstracts* is published quarterly and is more current; many of its references have substantial abstracts; and the fifty women's studies journals indexed in the 1989 volume include more foreign titles but fewer specialized and alternative titles, and no popular women's magazines. *Women's Studies Index* is distinguished by the breadth and depth of its periodical coverage; by its full indexing of reviews and creative writing; and by its arrangement, which makes it much easier to use than *Women*

Studies Abstracts. This index is a welcome addition to collections supporting research in women's studies.—*A.L.*

BUSINESS

The Portable MBA. Collins, Eliza G.C., and Mary Anne Devanna, eds. New York: Wiley, 1990. 386p. $24.95 (ISBN 0-471-61997-3). LC 89-27382.

The authors have designed this book as a means of providing the reader with many of the benefits of a course of study leading to an M.B.A. degree, but it is not intended as a substitute for any component of an actual program. Some of the benefits of studying this book will be the ability to speak the language of business; a framework for making reasoned business decisions and judgments; and the opportunity it provides to learn from faculty members in a number of major M.B.A. programs.

Fundamental management concepts and techniques are explained as they relate to managing people, quantitative analysis, and managerial economics. The major functional areas in operating a business—accounting, finance, marketing, human resource management, information technology, operations management, and strategic management—are treated in separate chapters by specialists in each area. Discussion of essentials is supported by practical examples in a how-to approach. Each chapter ends with suggestions for further reading.

Presentation throughout is characterized by a clear pedagogic style that can be easily understood by a reader new to the topic, whether one is in business already or not. A concluding chapter discusses the role of business in a modern democratic society. *The Portable MBA* is recommended for academic and public library business or education collections, and for any social science library serving an active clientele.—*J.C.*

HISTORY

Carper, N. Gordon, and Joyce Carper. *The Meaning of History: A Dictionary of Quotations*. New York: Greenwood, 1991. 374p. $49.95 (ISBN 0-313-26835-5). LC 90-13977.

This work aims to reveal "the breadth and depth of the continuing search for the meaning and value of history" (Pref.) by listing approximately 3,000 quotations by some 1,000 authors. Because it is arranged by author rather than topic, this poorly documented source (dates, editions, and pages of sources are not provided) is not really browseable. Also, some of the inclusions seem questionable; surely Jane Austen's sentence from *Pride and Prejudice*, "Think only of the past as its remembrance gives you pleasure," is a personal credo, not a philosophy of history.

Because the entries are arranged alphabetically by author, the author index is unnecessary; the subject index, which even the compiler calls arbitrary, is inadequate. The author writes in the preface that he thinks "many people might enjoy and find useful the results of one person's excursion through the literature of history." Historians may find it enjoyable, but I doubt anyone will find it useful.—*M.C.*

Fritze, Ronald H., Brian E. Coutts, and Louis A. Vyhnanak. *Reference Sources in History: An Introductory Guide*. Santa Barbara, Calif.: ABC-CLIO, [1990]. 319p. $49.50 (ISBN 0-87436-164-8). LC 90-45169.

Reference Sources in History aims to cover "all periods of history and all geographic areas" and "all of the most important and generally useful reference works for historians" (Pref.). Primarily designed for use by English-speaking readers, this compilation cites 685 reference works and related titles, arranged in fourteen chapters by type of publication such as bibliographies, atlases, microforms, and journals. The work is indexed by title and by topic.

An intended update of Helen J. Poulton's *Historian's Handbook* (*Guide* DA2), the work includes items published as currently as early 1990 and makes an expressed effort to address microforms, online databases and CD-ROMs, and core journals. Each item has a three-line to half-page annotation, which describes its usefulness and its relation to similar reference tools.

This compilation falls somewhat between a guide to reference books for librarians, such as Sheehy and Walford, and a research guide for historians, such as the *AHA Guide to Historical Literature* (*Guide* DA1), although it does not satisfy either audience. It is too general, often skimpy in coverage for a given area, and the arrangement is problematic. The fact that the items treated in this book are limited to English-language materials with very few exceptions reduces the usefulness of the tool for specialists in European, Asian, and African history. Thus, beginning researchers and librarians will get the most use from this compilation because it offers a starting point, a cumulation of useful titles, and a guide to building a basic reference collection. A researcher might be better served by a more coherent bibliographic guide, such as the chapter in *Modern Researcher* by Jacques Barzun and Henry F. Graff (*Guide* DA4), until the revised edition of *AHA Guide to Historical Literature* becomes available.—*J.S.*

HISTORY—GREAT BRITAIN

Catterall, Peter. *British History, 1945-1987: An Annotated Bibliography.* Oxford: Blackwell, 1991. 843p. £100. (ISBN 0-631-170499).

This welcome bibliography lists about 8,500 English-language books, articles, and dissertations written from the end of World War II through 1989. It concentrates on the countries of Great Britain (i.e., England, Scotland, Wales, and Northern Ireland), but is also useful for modern histories of the former colonies. Divided into fifteen broad chapters, the text covers such areas as political history, the legal system, social history, and external relations. Each chapter is then given a detailed classified arrangement (the table of contents listing the headings is twenty-two pages), making the bibliography extremely easy to use. The annotations are evaluative and should prove useful in guiding readers to appropriate sources.

There are author and subject indexes. The author index includes those mentioned in the annotations. The subject index is presumably computer generated and needs some work. For instance, the *Times* and the *Economist*, among others, are listed under "The," while the *News of the World* is listed under "News." There is an odd reference to a "3i" in the middle of the Ts that refers to a book on privatization; privatization is in the index, but the book is not listed there. Also, an index to modern British history with nothing under "Strikes" could use some cross-references.

Nevertheless, even at the price, this bibliography should sit next to the Oxford University Press's *Bibliography of British History* (*Guide* DC231) in any library.—*M.C.*

Hines, W. D. *English Legal History: A Bibliography and Guide to the Literature.* New York: Garland, 1990. 201p. (ISBN 0-8240-4299-9). LC 90-3913.

The audience for this compilation of essays and bibliographies is "from a variety of backgrounds, coming afresh to the study of legal history" (Introd.) though I can imagine legal scholars wishing to review periods or specialties other than their own finding the text very useful. The volume begins with three bibliographic essays—for the medieval period, for 1485–1815, and for criminal justice and punishment (including a short section on crime literature)—that discuss collections of the law, commentaries and secondary works, procedures and traditions, court records, and the legal professions. The writer "on occasion has indicated those places in which there are significant gaps in the published work, in the hope that research in such areas might be stimulated."

These essays, which compose about half of the book (from page 9 through page 112) are followed by two further essays: "Periodicals and Periodical Indexes," and "Introduction to Bibliography." These are very useful surveys of reference materials, the most important periodicals, and library catalogs, for both the librarian and the researcher. Finally, the bibliography gives complete entries for everything cited, mostly monographs and collections of essays and reference tools, and a few periodical articles. This work will be useful to beginning researchers and librarians.—*E.M.*

Jones, Barri. *An Atlas of Roman Britain.* Cambridge, Mass.; Oxford: Basil Blackwell, 1990. 341p. $49.95 (ISBN 0-631-13791-2). LC 90-675155.

As the authors note in the preface to this volume, "The amount of effort that has been expended on the study of Roman Britain in terms of excavation and fieldwork probably makes it the most intensively studied province in the Roman Empire." Yet in most atlases of classical archaeology, only a page or less is devoted to that frontier outpost. The authors of this volume have attempted to present the richness of recent scholarship on Roman Britain in a series of black and white maps, photographs, charts, and tables, with extensive textual commentary.

This *Atlas of Roman Britain* is arranged in nine topical chapters: "The Physical Context," "Britain and the Roman Geographers," "Britain before the Conquest," "The Conquest and Garrisoning of Britain," "The Development of the Provinces," "The Economy," "The Countryside," "Religion," and "Devolution." Maps treat subjects that include the routes of roads and sea lanes, the placement of forts and other military outposts, mining areas, and cult sites. The author makes frequent use of aerial photographs of archaeological sites, as well as illustrations of artifacts. Charts illuminate such complexities as the Roman bureaucracy, from the small-town magistrate up to the emperor, and the political and ministerial policies of emperors and their imperial governors. The volume, which concludes with a bibliography and subject index, is handsome despite the lack of color illustrations or plates. Although highly specialized, it should prove interesting to scholars as well as students.—*B.J.*

NEW EDITIONS AND SUPPLEMENTS

The Palau y Dulcet, *Manual del librero hispano-americano* (*Guide* AA1083), is issuing a new supplement now that the main alphabet and the index are complete: *Addenda & Corrigenda* v.1 (Barcelona: A. Palau, 1990. 648p.). This volume covers A-Azzawac (entries 1–2,156), with volume two to appear in 1992. Many of the additions include a Spanish library location; there are cross-references from pseudonyms and anonymous works.

The second edition of *Who's Who of Nobel Prize Winners 1901–1990*, compiled by Bernard S. and June H. Schlessinger ([Phoenix, Ariz.]: Oryx, 1991. 234p., $39.50, 1st ed. 1986), "contains revised entries for Nobel Prize laureates from 1901–1985 and new entries for all individual winners from 1886 through 1900 . . . . Approximately 80 percent of the entries were revised substantively, either because additional biographical data became available or because new publications by or about the laureates were published" (Pref.).

The *Dictionary of American Biography* (*Guide* AJ63) has published its third cumulative index, comprehensive through supplement eight (New York: Scribner, [1990]. 1,001p. $85). It still contains the six indexes: subject, for persons about whom the articles are written; contributors, with name of subject; birthplaces, by state for the United States and by country for the foreign born; schools and colleges, in alphabetical order; occupations; and topics, with some group headings for topics such as ships or homesteads and plantations. The first index gives volume and page number, the next four indexes refer to the name in the subject index, and the last refers to volume and page (not name).

About a third of the entries from the second edition of *Who's Who in the People's Republic of China*, compiled by Wolfgang Bartke, (München: Saur, 1991). 2v. 909p., $325, 1st ed. 1981 (*Guide* AJ162), 2nd ed. 1987, have "not gained entry into this third edition" (Pref.). In fact, Bartke includes a "list of the 1,340 cadres of the 2nd edition who found no entry into the 3rd edition," with the official date of death, or date of removal from office, or date of last known appearance. This third edition gives biographical information on 4,120 people, most of whom have photographs included.

Women's Studies Encyclopedia, edited by Helen Tierney, is continuing with volume two: *Literature, Arts, and Learning* (New York: Greenwood, [1990]. 381p., $59.95). This volume focuses on "women as producers of literature, art, and music . . . [as well as on] women's relationships to writing and the fine arts and on women's education" (Introd.). As in the first volume, the articles are arranged alphabetically, with short bibliographies at the end of most.

Joan Reardon compiled a bibliography of *Poetry by American Women, 1900–1975* (Metuchen, N.J.: Scarecrow, 1979, 674p.). Now she has issued a supplement, *Poetry by American Women, 1975–1989* (Metuchen, N.J.: Scarecrow, 1990. 232p., $29.50), which adds an additional 2,880 titles of separately published volumes of poetry by 1,565 women "who are citizens of the United States" (Introd.).

Poetry Explication (*Guide* BD653) is now being revised, and the first of four volumes for English literature has appeared: *Guide to British Poetry Explication: Old English-Medieval*, compiled by Nancy C. and Joseph G. R. Martinez (Boston: G. K. Hall, [1991]. 310p., $40). This time the poems selected for treatment are allowed to have more than 500 lines; thus, epics are now included, bringing the total to about 800 poems with explication from 1925 to 1989 and a few from 1990.

Sequels: An Annotated Guide to Novels in Series was first published in 1982 (*Guide* BD236). A new edition, compiled by Janet and Jonathan F. Husband, adds detective fiction to the genres it covers, new series created since 1982, and titles in continuing series up to 1989 (Chicago: American Library Assn., 1990. 577p., $35). Another listing of sequels but this time for the movies is *Motion Picture Series and Sequels: A Reference Guide* by Bernard A. Drew (New York: Garland, 1990. 416p., $57), which gives the continuations to some 845 films, from the Harlem Globetrotters and James Bond to Zorro, Three Musketeers, and, of course, the Marx Brothers, Harold Lloyd, and the Lone Ranger. The film stills should have been placed on the same page with the series they represent.

The earlier editions of *Critical Analyses in English Renaissance Drama: A Bibliographic Guide* appeared in 1979 and 1985. It is now in its third edition (New York: Garland, 1991. 262p., $38). Brownell Salomon has increased the number of entries to 936 (from 731), added nine dramatists to the coverage of "contemporaries of Shakespeare in the years between 1580 and 1642" (Pref.), and expanded the analytical subject index. Unfortunately, there are still long lists of numbers under some headings (e.g., Allegory, Gesture).

J. P. Wearing began his calendar of the *London Stage* with 1890 to 1899 (*Guide* BG87), and his most recent work covers 1930 to 1939 (Metuchen, N.J.: Scarecrow, [1990]. 3v., 1,977p., $137.50). This fifth compilation lists 4,256 productions, with the total number of performances registered at 140,000. The indexes (the third volume) offer both a title index and a general index for performers, playwrights, production staff, and so on.

The *New Arthurian Encyclopedia* edited by Norris J. Lacy (New York: Garland, 1991. 577p., $65), is a much revised and expanded edition of the *Arthurian Encyclopedia*, 1st ed. 1986. Many of the articles have been revised, with the number increased from 700 to 1,200, and emphasis largely on modern Arthurian literature in all modern European languages and on minor characters. The index is new, along with the chronology of Arthurian events and works.

Thomas George Kurian compiled the *Encyclopedia of the Third World* (*Guide* CJ212) to present detailed, comparable information about 122 lesser developed countries. This has spawned two similar publications for other parts of the world: *Encyclopedia of the First World*, (New York: Facts on File, [1990]. 1,436p., $145. 2v.), "for 26 advanced countries (and six European ministates)" (Introd.), from Austria to the Vatican, and *Encyclopedia of the Second World* (New York: Facts on File, [1991]. 614p., $145), for eleven socialist countries, from Albania to Yugoslavia. One wonders if the two will merge for the next edition.

Barry T. Klein, in his fifth edition of the *Reference Encyclopedia of the American Indian*, (*Guide* CC469) (West Nyack, N.Y.: Todd Publishers, 1990. 1,078p., 4th ed., 1986, 3rd ed., 1978, $95), has reorganized the chapters, placed the information on Canadian Indians in a separate section, and has updated and expanded the bibliography to 4,500 inprint books (from 3,500 in the previous edition). The biography portion does not supersede that of the fourth edition because names and information have been omitted while new ones have been added. Because this portion of the reference work is in a separate volume, libraries with great interest in the topic may wish to keep the older biographical part with the fifth edition and, for that matter, the separate biographical volume of the third edition also, as the same practice occurred with the fourth edition.

A Subject Bibliography of the Second World War and Aftermath . . . 1939–1974 (*Guide DA201)* compiled by A. G. S. Enser, is a listing of English-language books arranged by topics. The 1985 supplement, covering 1975 to 1983, is superseded by a new bibliography—*A Subject Bibliography of the Second World War . . . 1975–1987* ([Aldershot, Hants., and Brookfield, Vt.]: Gower, [1990]. 287p., $59.95)—which adds an additional 1,600 titles. Enser also has expanded his coverage of World War I in: *A Subject Bibliography of the First World War . . .* (*Guide* DA200) to add another ten years; the current volume surveys 1914 to 1987 ([Aldershot, Hants.]: Gower, [1990]. 412p., $100).

Robert J. Young has greatly expanded his *French Foreign Policy, 1918–1945: A Guide to Research and Research Materials* (*Guide* DC154) (Wilmington, Del.: Scholarly Resources, [1991]. 339p., $40, 1st ed. 1981). The bibliography portion has increased from 1,554 entries to 2,090, the chapter on archives has much more detail on the contents of several of the repositories, and the dissertation listing has a new section for in-progress papers. There are still the partial subject and name index and the appendixes giving lists of ministers and administrators. Three other guides published by Scholarly Resources have been revised: *German Foreign Policy, 1918–1945* (*Guide* DC197), by Christoph M. Kimmich (Wilmington, Del.: 1991. 264p., $40, 1st ed. 1981: *Italian Foreign Policy, 1918–1945*) (*Guide* DC388), by Alan Cassels (Wilmington, Del.: 1991. 261p., $40, 1st ed. 1981); and *International Organizations, 1918–1945* (*Guide* CK416), by George W. Baer (Wilmington, Del.: 1991. 264p., $40, 1st ed. 1981).

Evaluating Reference Service in a Large Academic Library

Cheryl Elzy, Alan Nourie, F. W. Lancaster, and Kurt M. Joseph

An unobtrusive study of the ability of professional librarians to deal with factual questions was conducted at the Milner Library, Illinois State University. Students were recruited to pose questions for which answers were known, to 19 librarians in five departments. In all, 190 test "incidents" (10 questions for each of the 19 librarians) were used. Librarians were evaluated on the accuracy of the responses given and on their responsiveness and helpfulness, as judged by the student proxies. The methods used in the study are described, including the accuracy and attitude scales developed, the major results are presented, and suggestions are made on the follow-up action that seems appropriate after a study of this kind has been performed.

Several investigations have suggested that reference librarians may provide complete and correct answers to factual questions only about half the time.[1] Concern over this disappointing performance and questions about its applicability to reference service at Illinois State University prompted this study.

Illinois State University (ISU), a multipurpose university of more than 22,000 students, offers 191 degree programs in 33 academic departments organized into five colleges. Master's degrees are offered in most areas and doctorates in nine. Milner Library, the central library facility, is organized into five subject divisions on six floors: Education/Psychology, General Reference and Information, Social Sciences/Business, Science/Government Publications, and Humanities/Special Collections. The five divisions are staffed by 20 members of the library faculty, 19 classified employees, and student assistants.

OBJECTIVES

The objectives of the study were (1) to estimate the probability that a user, walking into the library with a factual question, would receive or be led to a complete and correct answer, (2) to determine to what extent student users of the library judge staff members to be responsive and helpful, (3) to identify conditions under which members of the reference staff perform well and conditions under which they perform poorly, and thus (4) to identify ways in which the service might be improved. In other words, the focus of attention would be on the accuracy with which factual ques-

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tions are answered by or with the aid of library staff. While we would agree with such writers as Jo Bell Whitlatch that success in answering this type of question is not the only criterion by which an academic reference service should be judged, we have little sympathy with others who state or imply that accuracy is of little concern to library users, who are more concerned with such things as convenience, timeliness, and the librarian's attitude.[2,3]

The study was not performed as an academic exercise. No hypotheses were formulated. Our main concerns were to get a better idea of the quality of reference service at ISU and, in particular, to identify possible problem areas.

METHODS

The following decisions were made at the outset:

1. The evaluation should be performed unobtrusively. Questions, of the type that might reasonably be put to the various departments of the Milner Library, would be collected and students recruited to pose them to members of the library faculty as though these questions represented their actual information needs.
2. Faculty members would be evaluated on attitudinal characteristics and on whether or not they were able to supply complete and correct answers.
3. The study would be conducted between April 17 and April 24, 1989 to allow sufficient time to recruit and hire students. It would occur during a peak time of activity in the academic calendar—midway between spring break and the end of the semester. Group and individual training sessions for student proxies would be held one week prior to the study. There would be one week of class and one week of finals during which proxies could pose their test questions if they somehow failed to do so during the test period.

Unobtrusive studies of reference service have been performed several times in the last 20 years, and they have been reviewed and evaluated elsewhere.[4] The present study differs from most earlier ones in several ways:

1. In most unobtrusive studies the questions have been posed by telephone rather than by personal visit to the library.
2. Most studies have been performed in order to compare libraries, and perhaps to identify broad categories of factors that might influence reference performance, rather than to derive detailed data on a single library.
3. This study, involving 190 reference transactions, appears to be the largest unobtrusive study of reference service yet to be attempted within a single library.

The director of the library requested that a memorandum be sent to all public service librarians stating that the study would be performed some time during the coming year and that the results would not affect their annual performance evaluations. This was done in January 1989. A few individuals expressed reservations, but after they learned more about the study and its background and intent, their concerns were overcome.

An evaluation form was created for students to complete after each test question had been posed. It recorded the test questions and the answers given by librarians; it also provided space for observations on the attitude and demeanor of the librarians. Each item was followed by a request for open comments from the students.

It was decided that at least 10 questions should be posed to each librarian. More would be desirable, but probably would be too unwieldy. Fewer might not provide a true picture of that librarian's attitude and skills. Therefore, 190 incidents would be recorded by the students—10 questions for each of 19 librarians.

Recruiting students for an unobtrusive study is difficult because researchers cannot simply advertise in the student newspaper or on the bulletin board and still keep the project confidential. Some contacts were made through professors known to the researchers at ISU and also at Illinois Wesleyan University across town. They were provided a job announcement describing the project and the responsibilities required of students. Some students did apply from both institutions through these personal contacts. In the end, however, the best source for recruitment proved to be Milner Library's own records of students who had applied for positions, but could not be hired for administrative or financial reasons. The person at Milner who is in charge of student employees provided files on 18 ISU students who might be suitable candidates, and these were contacted. Together with two students from Wesleyan, they formed the group of proxies. They were to be paid $75 each for approximately 10 to 15 hours of work, including attending a training session, being interviewed individually by the investigators, asking the questions, filling out the evaluation forms and attending a follow-up, or debriefing, session.

All 20 students were undergraduates: 7 males and 13 females; 4 freshmen, 4 sophomores, 8 juniors, and 4 seniors. Ages ranged from 17 to 23. Although the students came from a wide variety of disciplines, no attempt was made to match reference questions to student majors. The most difficult and time-consuming task was creating the questions to be used. The researchers put together an initial pool of hundreds of questions gathered from reference texts, other reference studies, and the investigators' own backgrounds and experiences.[5] Most were rejected on the first reading. Approximately 150 different questions were selected for research in the Milner Library collection and evaluated for possible use. All questions that could not be answered from Milner's collection were eliminated. Those of a type or subject not usually asked in this library were also discarded. From those that remained, questions were matched by subject and specialty with appropriate floors and librarians, and 58 questions were finally selected. Most were asked more than once. For example, many questions were asked of each librarian on a particular floor because librarians are responsible not only for reference work in their own subject areas, but for all disciplines housed on their floor (e.g., the music librarian has to answer questions in music, fine arts, literature, and languages). The same question was asked on different floors where it was appropriate to do so. Through repetition of questions, 190 test incidents were created.

The set of questions used differed from that of most earlier studies in that it contained a blend of factual questions (e.g., Who was the secretary of state when Sumner Wells was his assistant?) and of questions that were more research oriented (e.g., I need some articles discussing the short story entitled "The Lottery"). Because all questions could be answered from the resources of the Milner Library, the study was really an evaluation of the librarians' ability to exploit the library's resources.

Simply recognizing that one may be perceived in a certain way by a patron . . . might be enough to solve the problem.

The scheduling of when a student was to pose a question was essential to the project because the student was to seek a particular librarian, identified by desk nameplate. This proved difficult with so many people and questions involved. The researchers wanted to avoid questions being asked twice of the same librarian. Another goal was to spread the questions out evenly during mornings, afternoons, and evenings, and through the several days of the study. Librarians work the reference desks only at certain times, and students had to try to match their schedules with those of the librarians. The researchers also wanted to spread the student proxies out among the five floors and over the evaluation period so that they would not become too familiar to anyone on a given floor and in any time frame. The questions were laid out against the floors with the librarians' schedules, and 20 question sets of 8 to 10 questions each were created.

The week before the actual study, group training sessions were organized for the student proxies. The background for the project was discussed, as was how the study would be conducted and how the results would be used. Packets were given to each student with a schedule of when and to whom each question should be asked, along with a list of questions and an evaluation form for each. The forms were explained in great detail. Students were encouraged to complete the forms immediately after the encounter so that information and impressions would be fresh in their minds, and comments were strongly encouraged. Finally, their pay, the time frame, and other requirements were discussed. An individual training session was set up with each proxy over the next three days to assist each one in understanding the project, questions, and forms, and to help each construct a "cover story" for the questions in the event of an extended reference interview.

A number of unexpected problems occurred during the study itself, such as librarians being on vacation or out sick, no nameplates on desks, making identification difficult, and so on. But only about 14 questions had to be carried into a third week; all 190 forms were returned, and the students performed diligently. A follow-up session was held with the students a few days after the evaluation period. They were eager to share their thoughts and experiences. Comments ranged from how the time of day affected how librarians handled questions to the perception that the better the students dressed, the better the service received.

The work of verifying and grading answers, and of summarizing the mounds of data collected, continued through summer and fall. The investigators from Milner rechecked each answer on each floor and scored it. The attitudinal scores from each form were compiled, and comments on each librarian recorded. Each individual student, librarian, floor, and question was given a unique code, and the SPSS program was used to manipulate the data. Demographics on each student were entered, as well as information about each of the 190 incidents (e.g., time of day and date the question was asked, minutes spent with the librarian, and so on).

RESULTS

Each student was asked to record the details of the answer and search results provided by the librarian for each question posed and also to supply information on the source of the answer—title, edition, page number, and so on. Also requested were the date and time of day the question was posed and how many minutes were spent in contact with the librarian. The researchers checked each answer in the 190 cases for completeness and correctness and noted sources used by the librarians. Each incident was assigned a code reflecting the relative success of the librarian in answering the question (see table 1).

Arriving at a viable scoring procedure was difficult. It is relatively easy to score the results of a question posed to a library by telephone. The library can be considered as simply a "black box" and the librarian scored on a binary scale—giving the correct answer or not. For a walk-in to an academic library, scoring is more complicated. It was decided to score from the viewpoint of the student user. Because we were evaluating the role of the library in answering questions rather than in bibliographic instruction, we decided that the best possible result was one in which the user was *given* the complete and correct answer. Anything less should receive a lower score. Being led to appropriate sources by the librarian was judged less satisfactory than receiving a correct answer, but being led to sources was judged better than being pointed to them. It was also thought that being led or pointed to several sources, one of which included the complete and correct answer, was less satisfactory than being led or pointed to only one source that contained the complete and correct answer. Finally, the worst result was one in which the user finished with an incorrect

TABLE 1
SCORING METHOD USED

	Points
Student *provided* with complete and correct answer	15
Student *led to a single source,* which provided complete and correct answer	14
Student *led to several sources,* at least one of which provided complete and correct answer	13
Student *directed to a single source,* which provided complete and correct answer	12
Student *direced to several sources,* at least one of which provided complete and correct answer	11
Student *given an appropriate referral to a specific person or source,* which provided complete and correct answer	10
Student *provided* with partial answer	9
Student given an *appropriate referral to the card catalog or another floor*	8
Librarian *did not find an answer* or suggest an alternative source	5
Student given an *inappropriate referral to catalog, floor, or source,* or librarian unlikely to provide complete and correct answer	3
Student given *inappropriate sources*	2
Student given *incorrect answer*	0

answer. These principles are reflected in the scoring method used.

Some findings from earlier investigations support the scoring method used in this study. Wyma J. Hood and Monte J. Gittings found that librarians accompanied users about 54% of the time when answering reference questions in one academic library.[6] About 46% of the time, they showed them how to find the answer, and about 34% of the time, they found the answer for the user. Thomas Childers, in an unobtrusive study of reference service in public libraries, found that when proxies were directed to library tools, such as indexes or catalogs, they were not accompanied by the librarian in more than half the cases.[7] When directed to browse through shelves, books, chapters, or articles to find answers to their questions, they were not accompanied by the librarian in about 80% (129 out of 159) of the cases. Charles A. Bunge found that library users received correct answers only 47% of the time when merely directed to appropriate sources by a busy librarian. This improved to 59% when a busy librarian helped the users search and to 65% when a librarian not otherwise busy helped the patrons search.[8]

The scoring method we adopted served our purposes, but it can hardly be considered definitive, and other researchers might well disagree with it. Its major limitation is that, to avoid complications in data processing, a zero was assigned to the situation in which a student received an incorrect answer when, in fact, it would make much more sense to give this situation a minus score. If a zero is associated with an incorrect answer, it is necessary to give certain other unsatisfactory outcomes (e.g., an inappropriate referral) a positive value, because they are considered somewhat less heinous, but this hardly seems logical. In fact, a more logical scoring procedure would probably assign a zero to the situation in which no answer was provided (which scored 5 in table 1) and would give minus values to inappropriate referrals and to incorrect answers.

The attitude scale, in contrast to the accuracy scale, was a very simple one. The students rated the librarians on their helpfulness and approachability on a continuous scale of 0 to 10 in answer to

24 questions (e.g., Looks approachable? Acknowledges user's approach to desk? Friendly attitude?). The attitude value for a librarian or a floor is merely the mean of all values recorded by the students for that librarian or floor for all 24 questions.

The scores for the 190 reference incidents are summarized in table 2. In 58 cases, the librarian received a score of 15, meaning that he or she provided a complete and correct answer. However, the philosophy of service in academic libraries often is to provide the appropriate sources or point the student in the right direction. If that level of service is accepted as adequate, then scores of 10 or above would be considered acceptable. This was true of 111 cases (58% of all incidents). If an appropriate referral to the card catalog or another floor is considered acceptable, the library's score increases to 121 cases (about 64% of all incidents). It goes to 128 cases (about 67% of the total) if partial answers are considered acceptable. In 18 of 190 cases (9.5%), the librarian could not or did not find an answer. In 36 (19%) instances, inappropriate referrals and sources or outright wrong answers were given.

The time of day the question was asked was coded to determine whether it seemed to affect the accuracy or the behavior of librarians. Accuracy decreased during evening hours, but the decrement was not statistically significant. Time of day also had no significant effect on how well the students perceived they had been treated (attitudinal scores).

Table 3 shows how often each of the 58 questions was posed, the accuracy of scores achieved (mean score for questions posed more than once), and the mean time spent per question. Because of minor mix-ups, questions 7 and 17 were not asked. In a few other cases, students failed to record needed data—particularly minutes spent with the librarian—or sufficient information on answers to allow the investigators to verify them. The number of these cases is noted in parentheses in table 3.

The frequency with which a question was asked ranged from 1 to 8 times. Accuracy ranged from 2.3333 on question 43, to 8 total questions scoring 15, and 7

TABLE 2
ACCURACY OF ANSWERS PROVIDED

Answer Code	Frequency	Percent
15	58	30.5
14	24	12.6
13	13	6.8
12	5	2.6
11	8	4.2
10	3	1.6
9	7	3.7
8	10	5.3
5	18	9.5
3	10	5.3
2	16	8.4
0	10	5.3
Missing*	8	4.2
	190	100.0

* Some students failed to provide enough information upon which to base judgments, or asked the question in such a way as to change the expected response, thus invalidating the question.

TABLE 3
QUESTION BY QUESTION RESULTS

Question	Times Posed	Accuracy	Mean # of Minutes Spent on Question
1	2	12.0000	13.5
2	2	13.0000	5.0
3	2	7.5000	4.0
4	2(1)*	15.0000	3.25
5	2	14.0000	6.5
6	4(1)†	5.5000	6.0
7	–	—	—
8	2	8.0000	9.0
9	5	10.2000	4.2
10	2	14.0000	3.0
11	4	9.7500	4.2
12	4	13.2500	8.0
13	2(1)*	14.0000	5.0
14	2	15.0000	3.5
15	2	11.5000	3.0
16	5(1)†	5.2500	4.3
17	–	—	—
18	3	10.5000	15.0
19	5(1)†	10.4000	2.5
20	7	9.7143	8.63
21	4(1)†	13.0000	4.66
22	5	5.8000	6.4
23	7	10.1667	4.93
24	2	8.5000	2.0
25	1	11.0000	2.0
26	6	15.0000	6.66
27	3	11.3333	5.83
28	4	3.4000	4.0
29	4	7.2500	2.5
30	4	7.6667	9.0
31	1	15.0000	12.5
32	3	9.3333	5.6
33	2(2)*	—	6.0
34	3	15.0000	11.66
35	2	15.0000	7.5
36	3	15.0000	9.3
37	3(1)*	5.0000	6.3

Question	Times Posed	Accuracy	Mean # of Minutes Spent on Question
38	5	11.6000	6.9
39	2	5.0000	12.5
40	3	4.3333	5.3
41	4	7.5000	5.0
42	3	10.3333	7.3
43	3	2.3333	7.83
44	3	7.0000	5.66
45	3	14.3333	3.0
46	2	8.0000	5.25
47	3	6.3333	9.33
48	7	11.5714	9.86
49	8(1)*	7.1429	3.69
50	3	15.0000	4.83
51	6	12.3333	5.25
52	3	10.0000	3.1
53	3(1)*	14.0000	4.3
54	3	6.3333	6.83
55	7	9.5714	6.43
56	2	14.0000	7.5
57	3	12.0000	3.0
58	1	14.0000	5.0

* Missing data in accuracy code.

† Missing data in minutes spent.

scoring 14 on the accuracy scale. Minutes spent went from a low of 0 (the librarian did not leave his or her office, but conducted the transaction through the student assistant covering the desk) to a high of 25 minutes. Mean actual minutes spent went from 2 on questions 24 and 25, to 15 on question 18. There was no appreciable correlation between minutes spent with students and accuracy ($r = .1008$, $n = 179$, $p > .09$). Thus, the accuracy variable was collapsed into three categories for further analysis (15 to 10 as acceptable, 9 to 6 as minimal, 5 to 0 as unacceptable), but there was still no relationship between minutes spent and accuracy ($r = .0299$, $n = 179$, $p = .346$). Time spent with the student did not reflect how complete and correct the answer was.

Table 4 shows the accuracy and attitude scores achieved by floors or divisions. Floor E achieved both the lowest accuracy figure and the lowest attitude scores. Floor C received highest marks for attitude, while floor B was most accurate.

Table 5 records the attitude and accuracy scores by librarian, along with the number of questions each librarian was asked and the minutes the librarian spent with the students. Attitude scores ranged from 8.75 on a 10-point scale, down to 5.74. Accuracy ranged from 13.889 out of 15, down to 7.125. While the librarian who scored highest in attitude also received highest marks in accuracy, the same was not true of the lowest scores in each category. Both accuracy and attitudinal scores are discriminat-

TABLE 4
ACCURACY AND ATTITUDE SCORES BY FLOOR

Floor	Questions	Accuracy	Attitude
A	30(3)*	10.4074	8.2100
B	30	12.7333	8.2067
C	20(2)*	11.7778	8.5200
D	71(2)*	9.6377	7.7141
E	39(1)*	8.1053	7.1256
Mean	190(8)*	10.1538	7.8342

* Missing data for accuracy scores.

TABLE 5
ACCURACY AND ATTITUDE SCORES FOR EACH LIBRARIAN

Librarian	Number of Questions Asked	Attitude	Accuracy	Mean Minutes Spent
1	10(1)*	8.1900	10.3333	4.35
2	10	7.0000	7.6000	5.45
3	10	7.6300	7.5000	6.975
4	9(1)*	7.6000	7.1250	5.65
5	10(1)*	8.7500	13.8889	7.88
6	10	8.2100	13.000	4.85
7	10	7.7200	11.8000	6.7
8	10	8.2300	10.8000	6.3
9	10(1)*	8.2900	9.6667	4.3
10	10	7.8000	9.5000	7.6
11	10(1)*	5.7400	7.2222	2.15
12	10(1)*	7.3600	11.8889	3.95
13	10(1)*	7.7800	11.2222	6.95
14	10	7.8700	8.6000	8.05
15	10	8.1800	9.7000	5.85
16	12	7.0750	8.5833	4.75
17	10	8.6900	13.4000	7.30
18	9	8.2444	10.2222	8.05
19	10(1)*	8.6600	9.6667	8.5
Mean	190(8)*	7.8342	10.1538	

* Missing data for accuracy scores.

ing. One individual, for example, scored a low 7.2222 on accuracy and a low 5.74 on attitude.

Accuracy was found to be only minimally associated with attitudinal scores (r(182) = .2482, p < .0001). Answering a question correctly and completely was not a good predictor of how well the students in this study perceived they were being treated. Conversely, librarians who project positive images do not necessarily answer questions with the highest accuracy. Minutes spent with students apparently did affect the attitudinal scores they assigned to the librarians. Librarians who spent 4 or more minutes with students tended to get assigned a higher attitude score than those who spent less time ($F = 7.592$, $p < .00001$).

In 36 instances, inappropriate referrals and sources or outright wrong answers were given.

It was thought that perhaps differences might be found between questions of a ready reference nature and those involving more extended research. Therefore, the 58 questions were divided into two groups based on the number of sources needed to find the complete and correct answers and the level of difficulty of the questions (as perceived by the investigators) to test the prediction that when ready reference questions are asked, the accuracy and attitudinal scores will be higher. However, the type of question did not affect either attitudinal scores (t (186) = -.30, p = .768) or accuracy (t (177) = 1.10, p = .271). Therefore, the difficulty of the question did not significantly affect student ratings of accuracy or attitude.

SIGNIFICANCE AND USE OF THE RESULTS

The study was intended as a practical one—to gain information and insights on how reference service at ISU might be improved. While the significance of certain relationships was examined statistically, no formal hypotheses were formulated or tested. This section of the paper, then, deals with the authors' perceptions of the value of the results to ISU and with how these results have been and are being used.

As full faculty, ISU librarians are evaluated each year for the distribution of merit dollars. Three areas of performance are scrutinized: (1) practice of librarianship (the equivalent of teaching performed by general faculty), (2) research and scholarly activity, and (3) service. Librarianship (the most heavily weighted component) may also be the most difficult to evaluate in many instances—especially for public service librarians. In evaluating reference activity, impressionistic anecdotes or testimonials from colleagues often replace more objective data. Teaching faculty have traditionally been subjected to regular student evaluations. In a similar fashion, unobtrusive evaluations, such as that reported here, furnish a comparable examination of reference performance from several perspectives, accuracy and deportment among them. Such evaluations allow the quality and character of reference service to be discussed and evaluated at a level more concrete than opinion, conjecture, or speculation.

In considering the results of this study, a consensus must first be arrived at as to exactly what is an acceptable level of accuracy and of attitude. Is 70% accuracy acceptable? Is 50%? Is an attitude score of 7.8 on a 10-point scale what an institution should be aiming for or should tolerate? What level is unacceptable—7, 6, 5? Is the fact that 15% of the questions are dealt with in less than two minutes significant? That 37% are dealt with in less than four minutes?

In making use of the results the librarians involved should be made thoroughly familiar with the methodology of the project and the instrument used. Once the group recognizes that there very well could be problems in the level of service furnished, ideas on how to address them can be solicited, or presented, and discussed in an informal meeting. On one level, simply *recognizing* that one may be perceived in a certain way by a patron, or that two or three minutes may not be an appropriate amount of time to give all questions, or that one may have developed a tendency over the years to point students in the direction of sources rather than lead them, might be enough to solve the problem. With some librarians, the mere fact that they are reminded of possible problems or weaknesses in their performance may be enough to create a self-correcting situation. However, this will not always be the case, and other options should be explored—for example (1) personal interviews for the librarians falling at the low end of the rating scales; (2) use of outside speakers to present a workshop on improving reference service and combating and reducing the effects of burnout; and (3) identification of the types of questions most likely to be dealt with inadequately.

From an unobtrusive study of the type described, improvement in reference service can be addressed at several levels: personal, divisional, and institutional. If warranted, personal conferences with the librarians can be conducted to discuss, for example, undesirable elements of service. This might be a tendency to use inappropriate reference sources, to conduct peripheral business at the reference desk, or to give an undesirable impression of one's approachability, friendliness, or willingness to help. At this personal level, one can simply run through the list of comments made by the surrogate users and discuss the individual questions with the librarians.

On the divisional or institutional level, the collective consciousness relating to reference service can be heightened by broad, nonconfrontational group discussion of patterns detected. Traditional assumptions and platitudes about the excellence of service furnished can be challenged and strengths and weaknesses pointed out. Librarians with an accuracy score below some selected level should be consulted privately. The pattern of time spent on questions may be worth discussion with some librarians (one librarian spent one minute or less on half the questions received and less than three minutes on 80% of them), as would the collection of comments made by observers (about 7 pages for each librarian).

Traditional assumptions and platitudes about the excellence of service furnished can be challenged and strengths and weaknesses pointed out.

The third level for discussion would occur at the divisional level. Here, if the assessment of performance showed real excellence, as it did in some instances, it can be commended and serve as a morale builder. If, on the other hand, undesirable trends were disclosed (e.g., reluctance to handle questions dealing with a certain collection located on the floor), they should be discussed and existing policy regarding them clarified or revised. One unfortunate aspect of providing anonymity in such a project is that, while the identities of the underachievers are protected, so too are the identities of the stars—the librarians whose performance is truly exemplary and who should be used as role models.

After conducting personal interviews, general and divisional meetings, and an in-house developmental institute, the library should implement a similar project, after an appropriate amount of time has passed, to determine what changes, if any, have occurred as a result of the evaluation process.

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Content Analysis of ACRL Conference Papers

Pamela Snelson and S. Anita Talar

This study examines the content of papers presented at the second, third, and fourth national conferences of the Association of College and Research Libraries. An analysis of the papers presented at the first national conference revealed that one-third of them were research reports. Given that ACRL has initiated a series of activities designed to encourage the research pursuits of its members in the time period under study, it is our hypothesis that the second, third, and fourth conference papers will contain more research reports than were present in the first set of papers. Using the first study as a baseline against which future conferences can be compared, we examined papers presented at subsequent conferences using the technique developed by Pauline Atherton for analyzing research methods in the published literature of information science.

Conference papers are important to a discipline—they are an index of critical issues, a barometer of a profession's maturity. Most professional organizations have a long history of annual or biennial conferences, some going back more than 100 years.[1] J. C. Rowley succinctly lists many functions of conference proceedings: identification of contributions and activities of individuals in the field, realization of areas of new research and development, and awareness of current problems and possible solutions.[2] Relatively new to the academic library profession, the national conference has produced a forum for the presentation of research and conference papers.

The Association of College and Research Libraries (ACRL) has had five national conferences. An analysis for research content of the papers presented at the first conference (Boston, 1978) revealed that fewer than a third of the papers presented could actually be termed research.[3] That study investigated whether the papers presented at that first conference followed the norms established for scientific or scholarly papers in other disciplines; this study will build on that framework. Four subsequent ACRL national conferences (Minneapolis, 1981; Seattle, 1984; Baltimore, 1986; and Cincinnati, 1989) have added significantly to the growing body of conference literature. That scholars will create more reviews of research than actual research is always a danger in a profession. If ACRL conference literature is to make contributions similar to those of scholarly conference literature in other disciplines, the preponderance of papers at its conferences should be reports of original research. This article examines the papers presented at the second, third, and

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fourth ACRL national conferences to determine their research content.

LITERATURE REVIEW

W. D. Garvey, N. Lin, and C. E. Nelson conducted extensive studies on communication activities in the physical and social sciences and found that most conference paper presenters had already reported on their work through some other vehicle prior to the meeting.[4] While physical scientists seem to disseminate information most intensively in the shortest period of time, social scientists disseminate more diffusely and over a longer period of time. In addition, social scientists show greater activity than physical scientists, both in contacting authors and presenters at the meeting and in later correspondence. Distribution of presentation copies (conference proceedings), particularly among the social sciences, is a major dissemination activity associated with national meetings. The national meeting was an occasion on which social scientists devoted considerable time and energy to interacting with colleagues and to establishing lasting informal contacts with conference paper presenters.

B. C. Griffith and W. D. Garvey studied the American Psychological Association's (APA) annual convention as an outlet of scientific work in psychology.[5] As the largest of the behavioral sciences, psychology has one of the most highly attended and oldest national meetings. APA conference attenders considered the short speeches, symposia, and papers presented at these annual meetings most important in the dissemination of individual research studies, trends in research, and reports on research programs. The publication of a portion of the contributed papers by APA more than one month before the convention assists the information exchange. The declared purpose of the *Proceedings* is "to publish, with minimum delay, studies that would normally be submitted to journals and to offer a better means of disseminating brief research reports... [leading] to more critical discussion of work within the sessions."[6]

A review of the literature on research in library science has revealed a varied and scattered approach. M. H. Harris discussed the problems with research in library science, as did B. C. Peritz, C. C. Williamson, and J. H. Shera.[7] Peritz noted an increased output of research papers, indicating real research activity between 1960 and 1975. M. M. Nour's further study of research articles suggested that while the number of research articles is increasing, the proportion of research articles in core journals has declined since 1975.[8] Nour concluded that this difference may reflect changes in editorial policies; increased emphasis on practitioners' publishing, which is less likely to be research; the inclusion of different journals in the study; or a stricter definition of research. Peritz, too, found that "factual information on research publications in librarianship is scarce."[9] In an issue of *Library Trends* devoted to this subject, Rose Mary Magrill reiterated that while "research in librarianship has increased over the past 20 years . . . there is evidence that librarianship has not yet established effective quality-control procedures."[10]

The ACRL conference is not the vehicle of choice for research dissemination.

ACRL has initiated a series of activities designed to encourage research within the academic library community. In 1971, *College & Research Libraries* started a "Research Notes" column to provide short reports of current research. More recent examples include the "Research Forums" column, begun in mid-1984, in *College & Research Libraries News*, the research clinic held in July 1985 at the 104th Annual Conference of the American Library Association, and the newly formed ACRL Committee on Research Development. A final imprimatur on the renewed thrust toward research can be taken from ACRL's strategic plan, which promises to "promote study, research and publication relevant to academic and research librarianship."[11] ACRL members also have the opportunity to participate in the activities of ALA's Library Research Round Table.

Reviewers of ACRL's published conference proceedings are generally positive in their comments. H. Edelman stated that the papers of the first conference are "a very efficient and useful way of presenting a state of the art . . . and a tribute to the depth and quality of academic librarianship in the United States."[12] N. Stevens found the papers of the second conference interesting, "a solid contribution to the literature."[13] Speaking of the third conference, S. Rothstein stated that it was "important as a massive and multifaceted assemblage of findings, views and proposals regarding college and university libraries in North America."[14] Larry Hardesty wrote that qualified progress was made at the third national conference and cited an analysis of this conference prepared by Sharon Rogers and Robert Pesek.[15] Rogers and Pesek noted an improvement in the format of the third conference over that of the first and second conferences.

The third conference showed an increased sophistication evidenced by use of the format "author as analyst" rather than "author as biographer." The latter format describes a system, while in the former the author discusses issues in their complexity, usually involving some primary research, such as a survey instrument, and including a discussion of the literature and the background of the problem. Reviews of the fourth conference proceedings were more critical of the conference's lack of research. William Miller wrote, "These papers are not of great theoretical import," while Hardesty observed that many papers "describe[d] solutions to particular problems not generalizable beyond a specific library" and asked the question, "Are we going to promote research through the conferences or not?"[16]

HYPOTHESES

Given that ACRL initiated a series of activities designed to encourage the research pursuits of its members in the time period under study, it was our hypothesis that the second, third, and fourth conference papers contained more research reports than did the first set of conference papers. The null hypothesis was that there was no significant increase in the number of research papers. Our methodology was content analysis of each paper presented at each conference to determine whether or not it was a research report.

Apparently, prospective contributors, if given a choice, do not choose to present research.

A second hypothesis, given the short history of ACRL conferences, was that the research papers presented differed from scientific papers in adherence to the norms of research papers. These norms include the following standard parts: problem statement, literature review, hypotheses, research methodology, findings, and conclusions.[17] Methodology for testing this hypothesis was content analysis of the conference papers that we categorized as research.

METHODOLOGY

The first study of ACRL conference papers provided a baseline against which all future conferences can be compared. Papers presented at the second, third, and fourth conferences were examined using the same technique Coughlin and Snelson employed to study papers presented at the first conference. Coughlin and Snelson's definition of categories supplemented a content analysis methodology developed by Pauline Atherton for analyzing research methods in the published literature of information science.[18] These categories provided the criteria we used to make decisions as to whether an article was a research report or a nonresearch report and examines each research paper for selected characteristics, such as the overall goal of the article, the measure on which findings were based, the nature of the variables, questions on data collection and

TABLE 1
RESEARCH CONTENT OF CONFERENCE PAPERS

	First Conference %	Second Conference %	Third Conference %	Fourth Conference %
Research	30.33	26.79	27.70	18.33
Nonresearch	69.67	73.21	72.30	81.67
	(N=66)	(N=56)	(N=65)	(N=60)

analysis, and the objectives and weaknesses of the study.

Reports were prepared for each of the 181 papers presented at the three ACRL conferences under discussion. In order to test coder reliability, a small sample of papers was used in a test run and each researcher coded this group. A reliability coefficient of .90 was achieved.[19]

FINDINGS

Analyses of the 181 papers presented at the second, third, and fourth conferences indicated that less research appeared in these conference papers than in those of the first conference. While 33.3% of the papers at the first ACRL conference had a research focus, the research content in subsequent conferences never achieved 30%, decreasing to a low of 18.3% in papers presented at the fourth ACRL conference (see table 1). For the obtained x^2 of 5.23 with 3 df, $p > .10$. We concluded that the null hypothesis could not be rejected; there was no significant increase in the number of research papers. Therefore, our first hypothesis—that the research content of papers presented at ACRL conferences was increasing—was not supported. On the contrary, when the actual number of research papers was examined, we found that the research base was declining. Expert opinion, as evidenced by reviews of the published conference proceedings, lends support to this discovery.

The fourth conference contained the lowest percentage of research reported. This particular conference's call for papers clearly gave prospective contributors the opportunity to choose among authoring research reports, position papers, or idea briefs. Apparently, prospective contributors, if given a choice, do not choose to present research.

The overall goal of most research papers in the second, third, and fourth conferences was either evaluative—that is, a comparison or an assessment of issues—or exploratory—that is, a speculative or reflective consideration of issues (see table 2). This contrasts with findings from the first conference, where research paper goals were spread among the categories, with the heaviest concentration having model building as the major goal. Although most researchers paid attention to sampling, they rarely pretested the research instrument. Objectives were often clearly stated and achieved; in many research papers, a literature review generated objectives. It was not until the fourth conference that the majority of research papers proposed hypotheses (see table 3). Only in the third conference papers were findings from a majority of research papers integrated into the current state of the art.

The overall research approach used most often in the research papers presented at the second and third conferences was survey research. Data collection for a majority of the research papers presented at these two conferences was done through questionnaires (53.33 percent and 77.78 percent, respectively). In contrast, the research papers from the fourth conference used a variety of data collection methods—questionnaire, discussion, interview, and observation. No method predominated. The overall research approach also varied at the fourth conference. In addition to survey research, paper presenters used content analysis, regression, and focused interviews in their research.

No one-to-one correlation between any one question on our research report form and the accepted parts of a research paper exists. For example, we did not ask of each

TABLE 2
MAJOR GOAL OF RESEARCH PAPERS

	First Conference %	Second Conference %	Third Conference %	Fourth Conference %
Evaluative	25.00	46.67	61.11	45.45
Prescriptive	5.00	0.00	0.00	9.09
Exploratory	10.00	33.33	22.22	36.36
Developmental	10.00	0.00	0.00	0.00
Descriptive	15.00	13.33	5.56	0.00
Model-building	30.00	6.67	0.00	0.00
Predictive	5.00	0.00	11.11	9.09
	(N=20)	(N=15)	(N=18)	(N=11)

TABLE 3
RESEARCH PAPER CHARACTERISTICS

	First Conference %	Second Conference %	Third Conference %	Fourth Conference %
Careful sampling	5.00	60.00	37.50	44.44
Instrument pretested	5.00	13.33	16.67	9.09
Hypothesis stated	35.00	6.67	38.89	63.64
Objectives clearly stated	95.00	100.00	94.44	81.82
Objectives achieved	80.00	66.67	83.33	81.82
Objectives from state of the art	55.00	46.67	55.56	54.55
	(N=20)	(N=15)	(N=18)	(N=11)

research paper, "Is there a problem statement?" However, a researcher can look at a conference's totalled response to certain questions on the report form and make observations about adherence to the norm of scientific papers at a given conference. If we consider a positive response to questions about sampling, instrument pretesting, statement of hypothesis, and clearly stated and achieved objectives an indication of a paper's possession of research characteristics, it appears that the research papers presented at the ACRL national conferences do not follow the systematic processes of the scientific method. A majority of the research papers scored negatively in more than half of the questions dealing with standardized parts of a research paper, thereby supporting our second hypothesis that the ACRL conference papers differ from the established norm of scientific papers. This is the case in all three sets of conference papers we examined. While papers presented at the fourth conference resembled scientific papers no more than those presented at earlier conferences, the methods employed in the research were more sophisticated, moving beyond the questionnaire and survey.

In summary, our findings indicate that the research content of the conference papers declined and that few of those papers that can be considered research met the norms of scientific study.

CONCLUSIONS

Initial publicity on the fourth national conference invited librarians to "listen as your colleagues present position and research papers on a range of topics which concern the academic librarian."[20] Clearly, the intent is there. Yet analysis of the 1986 conference papers showed that less actual research was presented than at other conferences, despite an increasing emphasis or thrust by ACRL to "promote study, research and publication relevant to academic and research librarianship."[21]

The scientific qualities of research in librarianship have often been called into question. Through the years, various studies of research methods used by library researchers have shown that much of the published research centers around dissertations. The current increased demand for publication by academic librarians necessitates a sound research base for this activity.

In the first issue of *Library Quarterly*, Williamson decried the lack of research in the library profession and wondered about the justification for using the term "library science":

> If the library is to rise to its opportunity as a social and educational force it must . . . begin very soon to attack its problems by a thoroughgoing application of the spirit and methods of research that are being found to be effective in every other field. In the natural sciences as well as the humanistic and social sciences, in the applied sciences, in education, in business and industry, in social service—everywhere except in the library field—extensive programs of research are being carried out, highly organized and well financed.[22]

More than fifty years later, conference proceedings provide little encouraging evidence that research has increased, despite the fact that academic librarians now have in proceedings an appropriate and viable tool for the dissemination and publication of research. To compare ACRL conference proceedings with those of other disciplines is difficult. First, ACRL does not yet have a conference history corresponding to that of long-established organizations such as the American Psychological Association or the American Chemical Society. Second, research on conference proceedings in the various disciplines appears to assume a research content for conference papers and measures other variables, such as percentage of association members presenting or number of papers contributed per academic institution.[23,24]

Conference papers *should* be a vehicle for the dissemination of current research in any scholarly field. Our research showed that the ACRL conference is not the vehicle of choice for research dissemination. At least two explanations are possible: academic librarians are not conducting research, or their research is reported outside ACRL conferences. If it is the former, ACRL must increase its conscious efforts to encourage and foster research by academic librarians (e.g., through conferences, workshops, its strategic plan). If it is the latter, which we believe to be the case, efforts must be made to draw academic researchers into that unique channel for the transmission of information—the conference presentation. The three-year cycle of ACRL conferences is not conducive to timely dissemination of research. If annual ACRL conferences are not feasible at this point, ALA biannual meetings might provide between-conference opportunities for research presentation. Additionally, the structure of ACRL conferences should facilitate the communication of research by providing opportunities for informal discussion of research projects, in addition to the formal presentations.

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Letters

Editor's note:

Last year, *College & Research Libraries* reviewed and accepted for publication a paper entitled "Longitudinal Study of Scientific Journal Prices in a Research Library," by Kenneth E. Marks, Steven P. Nielsen, H. Craig Petersen, and Peter E. Wagner. The authors signed copyright forms dated 7/20/90 through 8/3/90. The copyright agreement represents that the work is original and "does not infringe any subsisting copyrights." The paper subsequently appeared in the March issue of *C&RL*.

Shortly after its publication, one of the editors of "The Future of Serials: Proceedings of the North American Serials Interest Group, Inc." (volume 19, nos. 3/4 of the *Serials Librarian*) forwarded a copy of it to me and suggested that I compare the Marks and Nielsen article with the one in *C&RL*. The comparison showed the articles to be virtually the same. The NASIG editor has copyright forms dated 6/8/90.

After discussing the matter with the Board of *C&RL*, the NASIG leadership, and the ACRL Publications Committee, I sent a letter from the *C&RL* Board to Marks and Nielsen. Marks' reply is printed below.

For the publishing record, the American Library Association does not own copyright for the *C&RL* article cited above. Scholars seeking reproduction of it should apply to Haworth Press.

To the editor:

Your letter of May 8, 1991, has caused both Mr. Nielsen and me considerable concern since we received it. Neither of us, at any time, contemplated or considered that we might be creating a copyright conflict or violation when we made the presentation to the NASIG annual meeting in June 1990. We believe we told the NASIG attendees that the findings of our study had been submitted to *C&RL* and, we hoped, would be accepted and published. At the time of the presentation to NASIG, we believed that we were offering a paper that was sufficiently different from that which had been submitted to *C&RL* and was undergoing continued review and refinement.

That we should have acknowledged in the *C&RL* article that the findings of the study had been presented at the NASIG meeting and were to be published in their proceedings is true. There is little to excuse that oversight. Suffice it to say, we should have been concentrating not only on making the requested editorial adjustments in the manuscript of the article but ascertaining that it conformed to the specifications of the *C&RL* instructions to authors. You have our public apology for that.

The commitment that we can make relates to the careful avoidance of any noncompliance with all instructions to authors, the letter and spirit of copyright. As concerned as we have been about other aspects of copyright, it is embarrassing to find ourselves in this situation.

DR. KENNETH E. MARKS,
Director of Academic Library Services,
East Carolina University

To the Editor:

The *Choice* Editorial Board and the editors approved a request from the Commission on Preservation and Access, in the spring of 1989, that *Choice* include acid-free paper information in the bibliographic entries that head our reviews. *Choice* uses the abbreviation "afp" for acid-free paper and prints this indicator before the ISBN.

In reporting whether the book that is sent out for review is printed on alkaline paper, *Choice* relies on information provided by the publishers. The information comes from the published version of the book itself. *Choice* will not physically test book paper for a pH value.

Robert Cohen, associate editor, Book News, Inc., in his letter to the editor (*C&RL*, May 1991) called on *Choice* to indicate acid-free paper in our reviews. We do. I hope this sets the record straight.

PATRICIA E. SABOSIK
Editor & Publisher,
Choice

To the Editor:

Marcia J. Myers and Paula T. Kaufman ("ARL Directors: Two Decades of Change" (*C&RL* May 1991)) have carefully and clearly documented the impressive rise of women to the ranks of ARL directors. But after completing their article, I was struck by the lack of consideration given to questions of race and ethnicity. Are there any minority ARL directors now? Were there any in 1970? That these questions were not even asked is unfortunate, especially at a time when diversity is such a broadly stated concern. This lapse is a clear reminder of how far the profession has to go before it can truly represent our society and its institutions of higher learning.

DAVID W. LEWIS
Head of Research and Information Services,
University of Connecticut

Book Reviews

Collection Development in College Libraries. Hill, Joanne Schneider, William E. Hannaford, Jr., and Ronald H. Epp, eds. Chicago: American Library Assn., 1991. 214p. $45 (ISBN 0-8389-0559-5). LC 90-27006.

Although much has been written and published about collection development during the last twenty years, most of it has focused on large university and research libraries. The editors of this volume question the assumption implicit in much of that literature—that practices appropriate for large academic libraries can be easily adapted to smaller libraries—and have designed this collection of essays to fill the gap they perceive in the literature. The authors chosen to contribute papers all currently work in colleges, but most have also worked in large academic or research libraries—a fact that should make them particularly capable of addressing the assumption in question. ("College library" is defined here as one with a primary mission to support undergraduate instruction, holding fewer than a million volumes, spending less than a $1 million annual materials budget, staffed by two to fifteen professionals, and serving approximately 2,000 students.)

The twenty papers are presented in five sections. The first considers whether college and university libraries do, in fact, differ. Mary Casserly identifies both philosophical and procedural areas in which qualitative differences exist between college and university library collection development. Joan Worley likens the college library to a small neighborhood grocery store that can compete successfully with the supermarkets because it emphasizes service and a collection that has exactly what its customers want. Roger Davis, however, challenges some of the viewpoints offered by others concerning the unique nature of collection development in college libraries and argues that the most basic difference between larger and smaller academic libraries is money.

Although most contributors take a practical (in some cases, a "how-we-did-it") approach to their topics, the second group of papers, entitled "Emerging Issues," tends to be more theoretical. This section contains essays by Thomas Leonhardt on the need to simplify collection development in colleges; by Thomas Kirk, who proposes the contingency theory of organizational behavior as a conceptual context for collection development activities; and by William Hannaford on the ethical versus the expedient in collection development.

"Effective Collection Development," the third section, emphasizes specific activities that affect or constitute collection development. Evan Ira Farber advocates effective bibliographic instruction as an important adjunct of effective collection development, while Michael Freeman discusses the usefulness (or uselessness) of budget allocation formulas in college libraries. Practical advice on gathering information on new faculty, new courses, and new programs in order to anticipate collection needs is offered by Willis Bridegam. For all those college librarians who dream of supplementary, unrestricted collection development grants, Richard Hume Werking explains the techniques used at Trinity University to double the collection between 1980 and 1988. Although the editors of this volume deliberately chose to use the term "collection development" (and explain in the introduction their reasons), Herbert Safford and Katherine Martin argue in their essay that "collection management" is a better term for what should be happening in college libraries.

"The Role of the Faculty" addresses this much-debated factor in college library collection development with four essays. Ronald Epp reviews several recent studies dealing with higher education and scholarly communication and argues that college librarians ought to interact more with learned societies, granting agencies, etc. A 1988 survey of faculty research habits at Albion College is reported by Larry Oberg, while Larry Hardesty cites findings from several studies concerning faculty attitudes and participation in book selection. Mary Scudder and John Scudder describe how faculty involvement in collection development is encouraged at Lynchburg College.

This volume concludes with a section entitled "Trends in Collection Development." Two of the papers (by Wanda Dole and Ann Niles) remind readers once again of the difficulties in designing an approval plan for a college library with a small materials budget. Two other papers focus on preservation and its importance in college libraries. Charlotte Brown and Kathleen Moretto Spencer describe a preservation project undertaken in 1985 at Franklin and Marshall College. Joanne Schneider Hill reports on a 1988 survey of preservation practices at fifty-five college libraries. Peter Deekle's bibliographic essay on the literature of college library collection development rounds out this section.

Most of the essays presented in this volume are relatively short, and all are quite readable. Readers presently working in college libraries will find in some of the essays ideas that they may try in their own libraries; other essays will only be restatements of the obvious. The volume will probably be most useful for those who, never having worked in a college library (as defined by the editors), are about to seek employment there.—*Rose Mary Magrill, East Texas Baptist University, Marshall, Texas.*

Publishing Research Quarterly. New Brunswick, N.J.: Transaction Periodicals Consortium, Rutgers University, 1985– . Individuals: $32/year; institutions: $68/year. (ISSN 0741-6148).

Publishing Research Quarterly entered the crowded field of professional journals more than six years ago under the title *Book Research Quarterly*. As behooves a product designed and edited by publishing experts, the new journal sought to define a niche for itself: somewhere between a trade journal like *Publishers Weekly* and a research journal like the *Journal of Communications*. It would combine up-to-the-minute reports on practice with new research, discussion of broad concepts, and historical studies. Its closest kin is probably *Scholarly Publishing* (Toronto), which is oriented toward the humanities and deals mainly with university press publishing. *Publishing Research Quarterly*, however, reflects the interdisciplinary, social-science style of its parent, Transaction Publishers, located at Rutgers. The recent name change does not signal any change in emphasis, for this journal has always covered the gamut of publishing as industry, profession, and cultural phenomenon.

A typical issue consists of several articles (often illustrated), quarterly U.S. book industry statistics, and a few book reviews. Subject coverage is unusually varied. Picture a set of concentric circles with the publishing industry—past, present, and future—at the center. As the circles widen, they encompass specific kinds of publications; the legal and social environment of publishing; literacy and reading; technology; authors and writing; libraries; bookselling; and higher education. It hardly needs pointing out that academic librarianship shares many of these concerns, though the center of interest would be located elsewhere.

How well has the journal fulfilled its intentions? In some respects, very well. The variety of materials that has appeared over the last few years is the mark of an energetic editor. The international scope of the journal is admirable, ranging from the increasingly interdependent world of big publishing (North America, Europe, and Japan) to the Third World. The list of contributors is international and includes publishers, consultants, educators, librarians, economists, sociologists, and historians. In addition to submitted manuscripts, there are commissioned reports of research in progress, statistics, updates on organizations, and book excerpts. Recent special issues—"Publishing Education," "Changes in the Environment of Scholarly Publishing," and "Europe 1992"—focus on timely topics. In another vein entirely are the interesting historical studies of reading that have appeared from time to time. These studies reflect the current interest in popular culture, literacy, and reader response.

Not surprisingly, this variety is both a strength and a weakness. At times the journal appears thin, uneven, or choppy, as when a study of "Economic Reform and the Dearth of Books in Nigeria" is followed by an explanation of "CD-ROM Data Storage Technology." The whole does not always succeed in being more than the sum of its parts.

Academic librarians should definitely take a look at this journal, which regrettably is not included in the standard indexes of librarianship. They should do so for two reasons. First of all, librarians need to understand how publishers view issues such as pricing, distribution, copyright, and changing formats. One comes away with a strong sense of what is worrying at least some publishers: loss of readers to audiovisual media, loss of the trust of universities and librarians, uncertainty about the risk of publishing in new formats, and anger that increasing consolidation and globalization of publishing, printing, bookselling, and distribution have destroyed "many authors, entrepreneurs, managers and publishing programs."

The second reason for reading *Publishing Research Quarterly* is of less immediate relevance to libraries: the intrinsic value in understanding the world of publishing, described by the editor, Beth Luey, as "our most important cultural industry." Long dismissed as the "accidental profession," publishing is only now beginning to establish itself as a full-fledged profession. Educational programs and degrees are springing up (at NYU and Simon Fraser, for example). Boundaries are being defined. Academic conferences are taking place. Professional publications (such as this journal) are appearing. This fragile growth is occurring at a time of unprecedented mergers, cutthroat international competition, declining readership, and dizzying technological change. Librarianship seems almost placid in comparison.—*Jean Alexander, Northwestern University, Evanston, Illinois.*

Kohler, Robert E. *Partners in Science: Foundations and Natural Science 1900–1945*. Chicago: Univ. of Chicago Pr., 1991. 414 p. alk. paper, $34.95 (ISBN 0-226-45060-0). LC 90-43520.

Historians of science have since tired of the debate in their ranks between internalists and externalists. The former group, which provided the core around which the discipline crystallized in this country shortly after World War II, has concentrated on the internal dynamic of the growth of scientific knowledge and often assumes that broader cultural features are not of great significance to the content of science. The externalists, who came to dominate the field in the 1970s, have concerned themselves with the political, economic, and institutional environments in which science is done. The debate has faded because many historians of science saw it as fruitless. In some ways, the difference is merely aesthetic: one group likes to study the changing content of scientific knowledge; the other prefers to look at the circumstances in which scientists work. Moreover, some observers would say that the best work of the past decade and a half has combined aspects of both programs—concerning itself with the content of scientific knowledge, but seeing contextual factors as crucial in the development of that knowledge.

Robert Kohler, a trained biochemist and an unabashed advocate of traditional externalism, abandoned internalism soon after he began doing research at the newly opened Rockefeller Archives in 1974. Kohler's work since then has concentrated on the institutional history of laboratories, university departments, and the like. In the preface to *Partners in Science*, Kohler describes how he "became aware that science was a complex social system with many actors, in which securing resources, negotiating with patrons, creating departments and disciplines, competing for talents, designing products and services, and projecting public images were no less essential than bench research." As a consequence, he moved away from the history of *science* ("that is, of finished intellectual products") and toward the history of *scientists* ("that is, science as a social process").

This book is the natural outcome of Kohler's fascination with the Rockefeller patronage of science and culminates his nearly twenty years' work with manuscript sources. In some detail, yet in a readable style, it tells the story of how Rockefeller (and to a lesser extent, Carnegie) money was applied to basic research in physics, chemistry, and the nonmedical life sciences during the first half of this century.

During the early years, foundation support was modeled on the older practice of grants-in-aid to individual scientists, and ultimately was channeled through fellowships offered by the National Research Council (established for this purpose by the National Academy of Sciences in 1916). The scene changed in 1923, when the Rockefeller-funded General Education Board (GEB) and the International Education Board (IEB) began giving grants directly to institutions for support of science departments and laboratories. The growth of the California Institute of Technology and of graduate science programs at Princeton University, in particular, was the result of Rockefeller activities at this time.

When the GEB and the IEB were dismantled in the late twenties as part of a reorganization of the Rockefeller charities, these grants ended and support for the natural sciences was transferred to a Rockefeller Foundation division, headed by the mathematician Warren Weaver. Weaver, driven by a vision of interdisciplinary scientific work, cultivated close relations with individual scientists through a system of project grants and used the project grant system to bring physicists and chemists into partnership with physiologists and other life scientists. The term "molecular biology" came into use during this period in association with Weaver's program, and researchers made good use of Rockefeller money in investigating the structure of protein and genetic material. Kohler clearly admires Weaver for having finally created a system for the management of scientific research, but he wisely avoids making a direct link between the success of Weaver's strategy and developments in genetics that came after 1953, in the wake of the description of the double helix.

Kohler also avoids making a link between the foundations' funding programs and the federally dominated "big science" of World War II and the postwar period. The difference in scale is too great; and the type of relationship that prevailed between patron and scientist is too different: for example, peer review of funding proposals was unknown in Weaver's natural science division. Kohler postulates that the extramural programs of the National Cancer Institute (founded within the National Institute of Health in 1937) set much more of a precedent for the activities of war-time and postwar federal science funding agencies.

What then is the import of Kohler's story? It is an account of the activities of a group of scientists and university administrators who came to manage a portion of the private wealth of this country in support of a set of working scientists at a particular moment in history. This book does not address the development of scientific knowledge; and, contrary to his assertion in the preface, Kohler tells us very little about the activities of working scientists beyond their relations with the foundations. Nor, for that matter, is the politics of philanthropy discussed much, although Kohler implicitly denies that the Rockefellers and their associates had any object other than to put a portion of the family wealth to use in disinterestedly advancing knowledge.

But the story is more important than it appears when described in this way. For a time, Rockefeller money was central to scientific research in the United States and around the world; and Weaver, in particular, helped create a paradigm for creatively managing science through control of funding. Kohler provides crucial material with which other scholars can further explore the means by which institutional arrangements—and especially patronage—served as intermediaries between broader political and cultural contexts and both the daily activity of working scientists and the knowledge they produced. The story of foundations and natural scientists is one worth telling; and it is hard to think of anyone better equipped than Robert Kohler to tell it in as lucid and engaged a fashion.—*Ed Morman, Institute of the History of Medicine, Johns Hopkins University, Baltimore, Maryland.*

Johnson, Peggy. *Automation and Organizational Change in Libraries*. Boston: G. K. Hall, 1991. 201p. alk. paper (ISBN 0-8161-1919-8, hardcover. ISBN 0-8161-1920-1, paper). LC 90-26147.

Peggy Johnson has provided an excellent summary of state-of-the-art management of research libraries that have undergone or are in the process of undertaking a transition to automated systems. While the monograph describes the results of a survey of academic libraries in the United States and Canada, it also contains a well-researched historical overview of academic libraries, followed by a description of the organizational environment of libraries. The introductory chapters provide substantive background for the work that follows and include many references to supplemental reading and supporting documentation, including a substantial number of articles and monographs from the general areas of organizational development and management.

The remainder of the work describes the survey methodology devised by Johnson, the responses to the survey, and the interpretation of the data as they relate to organizational development and human factors in large automated academic libraries. A comparison of the survey responses to predictions in the literature places the developments in the library world into a larger management context.

The survey research both confirms and refutes commonly held predictions and beliefs about the structural and organizational changes to be brought about by automation. Examples of issues addressed are the "flattening" of the organizational structure, increase in the number of departments, growing emphasis on task specialization, blurring of distinctions between technical and public services, changing communication and decision-making patterns, modifications to staff classifications, and paradoxical centralizing and decentralizing effects of automation. The author demonstrates that although some changes have been slower in coming than originally predicted, the overall impact of automation has been revolutionary on collections, services, and the ability of libraries to deal effectively with the dual problems of rapid inflation in the costs of goods and services and the information explosion.

A separate chapter describes the management literature on change in innovation, especially as it applies to technological change, and libraries in particular. Finally, trends for the future are analyzed and "new understanding of libraries" described. The author challenges library leaders "not only to make the transition to an automated organization as painless as possible for the library and its users but to take full advantage of the opportunities presented." The first step is to recognize that a paradigm shift is happening: librarians must not passively let the future happen, but must actively seek it.

This book is both useful and interesting; it is also exceptionally well written. The general library reader will come away with a basic understanding of the impacts of technology on modern large academic libraries, and the reader desiring a more sophisticated understanding of the state of the art will benefit from both the details of the research reported in this text and the many references to the literature of general management and organizational change, as well as to the literature dealing specifically with technological and organizational change in libraries. Managers and library administrators will find the ideas challenging as they confront change in their own libraries and institutions of higher education.—*Susan F. Rosenblatt, University of California, Berkeley, California.*

Lingua franca: The Review of Academic Life. Mamaroneck, N.Y.: Lingua Franca, Inc., 1990– . Individuals: $17.95/year; Institutions: $35/year. (ISSN 1051-3310).

Lingua franca: The Review of Academic Life offers scholars in the humanities, broadly conceived, a forum for debate on issues in higher education, with the reformulation of the liberal arts agenda figuring prominently. Launched with a successful trial balloon issue in June 1990, followed with regular bimonthly issues beginning in December 1990, *Lingua franca* is a gutsy, timely, and topical review of the academy and might be characterized as a grassroots version of the *Chronicle of Higher Education*. Published independently out of Mamaroneck, New York, *Lingua franca* is the creation of Jeffrey Kittay, former Yale French professor and currently visiting professor at New York University. In addition to academics, contributors so far include primarily New York-based journalists with credentials from *Esquire*, the *New York Times*, *Spy Magazine*, the *Nation*, *Dissent*, and the *New Republic*.

Rarely has a new academic rag received so much attention from the media, leading this reviewer to believe that *Lingua franca* is street-smart and market-wise. From the *Washington Post* to the *San Francisco Examiner*, from the *Boston Globe* to the *Chicago Tribune*, *Lingua franca* has been cited and reviewed enthusiastically. *Lingua franca*'s ads abound with pithy testimonials from the likes of Umberto Eco, Catharine R. Stimpson (recent president of the Modern Language Association and Rutgers graduate school dean), and Lindsay Waters (Harvard University Press executive editor). Bill Katz, in *Library Journal*, selected it as one of "The Ten Best Magazines of 1990." *The Wall Street Journal* and *Harper's* have reprinted its articles.

Why all the fuss? Perhaps because *Lingua franca* takes us behind the scenes in academe and talks frankly about some rather delicate issues: the tenure system at Harvard, unproductive faculty, the great Eskimo "snow" vocabulary hoax, Paul de Man and his deconstruction, and my personal favorite—undercover inside the M.F.A. creativity boot camp—in which the author reviews the propensity for "groupthink" and political consensus that controls writers' workshops across the country. There are also articles of a more practical nature: the diary of a faculty member serving on an affirmative action search, an interview with a faculty member accused of sexual harassment, and a primer on new TIAA-CREF retirement plan options. Academic librarians long concerned about their drab image may be gratified to learn from Valerie Steele's article, "The F-word" (where F stands for Fashion), that they are dressed in vogue for academe. A UCLA history professor explains: "To dress fashionably is to be labeled frivolous. . . . Dowdy is safe and serious; bad dressing, one of the last ways in which academics can project the illusion of otherworldliness." Written in a breezy style, *Lingua franca* is entertaining and easy to read.

Growing from forty (June 1990) to fifty (April 1991) pages in length, each issue typically has a number of regular columns in addition to the cover story, the feature article, and two shorter articles or interviews. Academic librarians will take special interest in the "Breakthrough Books" section of "Field Notes," in which a handful of scholars identify the most recent significant book in their discipline. Although the selections are typically from the mainstream scholarly press, the column serves as a timely annotated list of top hits. "Inside Publishing" looks forward to new releases—for example, announcing *The New York Review of Books*' plans to initiate an Italian edition, *Libri & Idee*, and to develop French and German editions as well, and the resurrection of the influential

Africanist review *Transition*. Appearing under the same rubric is a short column—"What Do Editors Really Want?"—in which acquisitions editors answer queries about the kinds of manuscripts they are seeking in specified fields. Anyone living under the illusion that authors—not editors—set the publishing agenda will be reminded otherwise by reading this column.

Academic librarians should be pleased to read—if not contribute to—the regular column "Research File: Documents in Search of Scholars." Here we find the treasures of our collections—at Michigan State University, the New York Public Library, the Library of Congress, Radcliffe College, the International Institute of Social History (Amsterdam), and the Franklin Furnace Archive (Manhattan)—begging for scholarly investigation. Enterprising graduate students would be well-advised to package "documents in search of scholars" with "what editors really want" for a sure-fire dissertation/monograph success.

Until the April issue, this little magazine devoted 20 to 30 percent of its pages to a regular line called "Jobtracks," tracing the migratory paths of junior faculty to their first positions or of seasoned faculty to senior positions. Academics will no doubt lovingly run their fingers down the long columns of names in search of that lost classmate, colleague, or mentor—now found—at last, promoted to tenure at Emory. In April, through a font and spacing change, "Jobtracks" was reduced to just over six pages in length.

With a circulation of 15,000, *Lingua franca* apparently followed Abbeville's advice and thought first of its audience. Its modest institutional price, $35, suits its desk-top publishing quality and newsy content. Worthy of our support, yes, but also worthy of our vision. As *Lingua franca* matures—and let us hope it does—academic librarians should help to make their agenda an integral part of its mission. Right now, the magazine is walking a fine line between class clown and class act: its reputation hangs in the balance. A case in point is the "Field Notes" insert in the April 1991 issue, "Rad Librarians Track the Zeitgeist," in which the travails of Hennepin County Library's cataloger Sanford Berman to establish new Library of Congress subject headings are listed. *Lingua franca* reprints a selection of sixteen new headings from among the 400 initiated by Berman. It lists another thirty—most of which, like "Cat furniture," are largely irrelevant to academics—from among the thousands of unique headings in use at Hennepin County Library alone. Excluded are more serious and surprising examples such as "Marxism" (use: "Communism" or "Socialism") or "Family planning" (use: "Birth control"). *Lingua franca* misleads its readers by prefacing the second list with: "Here are some of the cultural phenomena that the library caught up with during the past year. Look for them soon at your local library." Only if your local library happens to be Hennepin County Library, they might have added. More disturbing, however, is that *Lingua franca* went for the quick laugh and overlooked the more important—and academically relevant—questions: How are new subject headings introduced and adopted by the Library of Congress? How do they reflect cultural changes? *Lingua franca* might have investigated recent changes resulting from German unification, for example. And there would have been plenty of room for humor.

If it can avoid a decline into terminal cuteness, *Lingua franca* will be of interest to graduate students, faculty, academic librarians and publishers, and consumers and critics of higher education.—*Martha L. Brogan, Yale University, New Haven, Connecticut.*

Scholarly Communication and Bibliometrics. Borgman, Christine L., ed. Newbury Park, Calif.: Sage, 1990. 393p. $38 (ISBN 0-803903879-9). LC 90-8745.

Christine Borgman, who teaches in the library school and in the Communications Studies program at UCLA, has compiled eight articles from a special issue of *Communications Research* (October 1989) and eight new essays into a comprehensive examination of bibliometric methodology and theory.

The book is organized into four sections: theory and perspective, bibliometric research methods, empirical studies, and conclusions. The strength of the work is found in the three chapters that comprise the section on theory and perspective. Belver Griffith opens the volume by introducing Robert Merton's concepts of communication as a social process, Thomas Kuhn's ideas of science as a dialectic procedure, and Derek deSolla Price's pioneering work in measuring scholarly production.

Sydney Pierce follows with an interesting chapter on the issues associated with developing a "unified body of explanatory theory in bibliometrics." Pierce maintains that resistance to interdisciplinary communication prohibits theory building. While self-contained disciplines "may build stronger research traditions," he argues, interdisciplinary communication and the resulting dissemination of research results would provide the opportunity to synthesize information on similar topics from dispersed disciplines.

The third chapter, by Leah Lievrouw, discusses the differences between social structures and social processes and their relationship to the study of scholarly communication. Lievrouw contends that bibliometrics currently studies the structural products of scholarly communication in order to understand the processes. The "invisible college," for example, is "widely accepted as a model of scholarly communication," but is typically examined through measuring documents and professional memberships. Interviewing and other fieldwork methods are recommended for a better understanding of the communication processes that emerge as structural products.

Although these three chapters provide brief introductions to the important sociology of science issues surrounding scholarly communication, it would have been useful to include an essay from the broader perspective of sociology of knowledge. Specifically, a more detailed treatment of the influence of research paradigms on scholarly communication and the consequences for bibliometric studies would enhance the work. In addition, greater discussion of the restrictions that paradigms place on interdisciplinary studies, an issue raised by Pierce, would be appropriate.

In the second section, methodologies of bibliometric studies are examined, applying the theoretical material introduced in the first section. The contents include a defense of co-citation analysis by Howard White and an intriguing essay on predictive research by Don Swanson, "identifying literatures that are logically but not yet bibliometrically related." Swanson claims that by recognizing literatures that are not presently linked through citations yet share logical arguments on related topics, information scientists can continue to manage the increasing growth of specialized, fragmented knowledge. He proposes that bibliometrics can be used to identify not only knowledge that has been linked through citations, but also that which has not, thus allowing the integration of implicitly related, previously unlinked information.

Empirical studies that have been conducted using bibliometric techniques are reported in the third section, demonstrating the application of bibliometric methodologies and illustrating how they serve to measure scholarly communication. These descriptions are varied and useful for anyone contemplating a bibliometric study.

In the concluding chapter, William Paisley succinctly presents the history of bibliometrics, then systematically compares bibliometrics to complementary research methods, including content analysis, social indicators research, sociometrics, and unobtrusive measures. Finally, Paisley builds upon Borgman's introduction by presenting "further elements of a model of bibliometric research." In this section, he outlines the possibility of introducing new types of variables and statistical analysis, and new research questions related to the demographics of scholarly communication (e.g., patterns of team research, number of active authors by discipline).

Scholarly Communication and Bibliometrics is a cohesive work which presents a thorough overview of bibliometric research. It is further unified by a single collective bibliography, a detailed subject index, and a combined author and cited works index. The primary value of this work is that it serves both as a general text on bibliometric studies and as a treatise on the sociology of science as it relates to scholarly communication. This book makes an important contribution to an emerging body of knowledge and, as a text for researchers, should have a major impact.—*Jeffrey N. Gatten, Kent State University, Kent, Ohio.*