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Editorial

Why Do Research?

In the middle of my career as a librarian, I taught English in three different colleges. Over coffee with colleagues, I argued that research and publication made for improved teaching. That relationship is well established. Teacher/researchers believe that the research activity provides vital data and essential inspiration. These qualities enliven, sharpen, and enrich instruction. At the same time, the intellectual stimulation of the classroom helps the researcher to question basic premises and to maintain an inquiring attitude.

When I returned to librarianship, I found an even more crucial relationship between practice and research. Librarianship requires the same kind of intellectual cross-pollination that fires good teaching. An uninterrupted regimen of practice may lead to unimaginative and mediocre service. Research into activities being performed invigorates; new techniques may be explored and new viewpoints developed.

Libraries have changed significantly in the last twenty years and may change even more radically in the next decades. Research identifies and develops successful responses to the challenges of the future. Librarians can best prepare themselves to meet change by engaging in a continuing intellectual dialogue on the nature of the profession and its practice.

Even though College & Research Libraries and other journals have been publishing articles for over half a century, many areas of librarianship have received only cursory study. These unexplored or under-explored areas constitute knowledge voids, which need to be filled with published research. While the practitioner’s perception may be that library literature covers all topics regularly and even perhaps repeatedly, the researcher seeking information about a specific topic may find the shelves fairly bare. Libraries for the Year 2000: Research Perspectives, a forthcoming monograph from ACRL’s Publications in Librarianship series, surveys the existing literature and provides lists of areas needing further investigation.

C&RL has been a premier publisher of research involving statistical data. The journal will continue to publish the best articles written using that methodology. Mail surveys and questionnaires produce interesting and valid studies of library problems, but many other methods of data collection make significant contributions to improving practice. For instance, a great deal of fascinating data has been gathered about reference and document delivery service through unobtrusive testing. And, the automated systems that now pervade libraries often provide mountains of raw material about technical services functions, circulation, and online catalog use. For the most part, these data supply the answers to the questions on the annual ACRL survey and then languish in a filing cabinet. The data themselves are only raw material. They cannot guide improved decision making in librarianship without incisive interpretation. Librarians who care about improving service need to study the data, find the relevant patterns, and offer wise interpretations.

Some librarians associate the word ‘‘research’’ solely with the gathering of concrete data that may be analyzed using statistical methods. But other approaches make significant contributions to the profession. Case studies have a mixed reputation; many regard these ‘‘how we done it good’’ pieces as a lower form of scholarship. Yet, when a local institution
embarks on a new project, the experiences of others become extraordinarily valuable. People are, of course, much more likely to publish the results of a successful local experiment than of an unsuccessful one. However, reports on failed attempts would doubtless save many others.

Thought pieces are a valuable but scarce commodity in library literature. George Bernard Shaw once said "I have made a reputation of thinking two or three times a week because others only think once or twice a year." Both library professors and practitioners can observe the fortes and foibles of the profession, consider reasonable alternatives, and offer worthwhile advice on solutions. Provocative thought pieces encourage a higher level of intellectual activity in all professional endeavors.

Every librarian has a responsibility for contributing to research on librarianship. On the one hand, library school faculty take a leadership role in exploring basic research issues. Their studies provide a groundwork of knowledge about the nature of the library universe. A program of grants from the Council on Library Resources has allowed practitioners to work with library school faculty in tackling problems. On the other hand, practitioners tend to concentrate on issues that directly improve service in local libraries and, by extension, in the wider profession. Among practitioners, colleges and community college librarians have been underrepresented in the published literature. Perhaps, partnerships between college practitioners and those in research libraries could cause more college librarians to participate in research in librarianship. Studies comparing two or more libraries have a greater potential for applicability than studies conducted in a single location.

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GLORIANA ST. CLAIR

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Job Responsibilities and Job Satisfaction at the University of California Libraries

Patricia A. Kreitz and Annegret Ogden

The authors compare the roles and responsibilities of academic librarians and support staff at the nine-campus library system of the University of California. By surveying the frequency with which certain tasks were performed, areas of overlap between professionals and paraprofessionals were identified. Discrepancies in satisfaction with specific job attributes are examined. A wide gap in satisfaction levels between the two groups was found, particularly in the areas of promotion, job development, and influence. While calling for equity in compensation for library assistants, the paper identifies the responsibilities of professional librarians in setting realistic expectations for library staff.

According to a 1988 Personnel Journal survey of 100 corporate personnel officers "job satisfaction is ranked over job security by a 2-to-1 margin as the number one worker concern today."¹ Margaret Magnus, editor/associate publisher of Personnel Journal, speculated that this change in worker concern may be driven by "the appearance of a new class of knowledge workers who are being paid for what they know, not just what they do."² These knowledge workers expect more from their jobs. This change may require employers to develop new concepts of leadership, compensation, and managerial control.

If job satisfaction is important for American workers in the profit sector, it may be even more significant in knowledge industries such as academic libraries. One of the traditional assumptions about careers in an academic setting is that such work offers a high level of satisfaction. Librarians and library assistants expect their jobs to satisfy not only their financial needs but also their intellectual and psychological needs. Moreover, they expect to receive both monetary and nonmonetary compensation commensurate with their education. But are these expectations realistic in the present employment structure of university libraries? And, in addition, do the rewards match the responsibilities and the qualifications?

In Understanding Job Satisfaction, Grunberg suggests that occupations that depend heavily on cooperation among fellow workers and whose product is a service function directed toward a nonpaying public (in contrast to a sales-oriented or manufacturing function) would be adversely affected by a high level of dissatisfaction among employees.³ Service industries operating in the nonprofit sector are particularly dependent on intangible rewards to influence job performance since they traditionally have lower wages and benefits and since relatively low pressure is put on employees through administrative supervision.⁴ As nonprofit service industries fill with "knowledge...
workers," libraries should be affected by the close connection perceived between a high level of job satisfaction and a high quality of library service. There are, however, some interesting indications in the literature that, although a high level of satisfaction exists in libraries, it is not experienced equally by all library workers.

In theory, but as our study will show not so much in practice, academic librarians are in charge of library policies and operations. In accordance with their special background and higher education (a master's degree in library science is a prerequisite) they serve as consultants to faculty and students and perform those tasks that require familiarity with academic subject matters and bibliographic skills. They administer, analyze, and organize the services. To a large extent, performing these services devolves to the library assistants who function in a separate employment structure, designed to relieve librarians of the routine aspects of their work.

In his article entitled "Continuity or Discontinuity—a Persistent Personnel Issue in Academic Librarianship," Allen Veaner asserts that library assistants are highly dissatisfied with their job duties and rewards because librarians have not been able to maintain a clear distinction in job duties and responsibilities between the professional and the nonprofessional levels. In the University of California system, library assistant is a specific classification that denotes library staff who are not hired into positions requiring an M.L.S. but who do support-level library tasks. Synonyms for these positions are: library clerks, library technical assistants, and paraprofessionals. Veaner argues that there is a "widespread perception that two categories of employees (librarians and library assistants) are performing widely overlapping functions, seemingly at the same level, but in different employee series with different pay scales and different prerequisites." This blurring of responsibilities—and the dissatisfaction it engenders—is not limited to American libraries. Norman J. Russell, surveying nonprofessional staff in a selection of public and academic libraries in England and Northern Ireland, discovered a "deep resentment" by paraprofessionals of the professional staff's treatment of them. These paraprofessionals also reported a considerable overlap in the duties of professional and paraprofessional staff, an overlap that they did not feel was adequately compensated in the salaries paid to paraprofessional staff. Russell concludes that "It is difficult to escape the conclusion that relationships between professional and nonprofessional are not what they should be.

Since librarians and library assistants interact with each other on a daily—often hourly—basis, common sense suggests that the dissatisfaction and/or ambiguity experienced would have an effect on the relationship between the two groups and, to some extent, on the quality of service they provide library users. Are Veaner's assertions accurate that the blurring of roles is widespread and that this causes a high level of dissatisfaction for library support staff? If so, is this condition caused by a real or a perceived overlap of the work each group performs? Library folklore, and the ad hoc experiences of these two researchers, suggest that Veaner's assertions are correct. However, we found no comprehensive study that tested his assumptions and decided to explore this issue within the context of the University of California libraries by comparing the job satisfaction experienced by academic librarians and paraprofessional library assistants with their self-reported tasks and responsibilities. The University of California system of libraries offers an excellent environment for a job satisfaction study comparing professional and paraprofessional workers. In 1983 when this study was conducted, there were 599 librarians and 1,573 library assistants working in over sixty libraries at nine campuses across the state of California.

A master's in library science is a prerequisite for employment in the librarian series that follows the faculty model of three ranks: assistant librarian, associate librarian, and librarian, with a provision that career status (a variant of tenure) be achieved within six years after the initial employment or the individual is not retained. Movement through the three
ranks is by means of steps within rank and then promotions from rank to rank. Librarians lack detailed job descriptions; instead their performance and thus their movement through steps and ranks is based on an assessment of their overall achievement. The career path of librarians at the higher ranks is to a large degree independent of their primary job responsibilities because as they advance in rank, they are expected to spend an increasing percentage of time on professional, scholarly, or university service and/or on research.

In contrast to librarians, library assistants are judged on their performance in specific jobs that have formal, detailed job descriptions. At the time of our study, there were four ranks of library assistants within the U.C. system. A particular job is classified at level one, two, three, or four based upon the duties and responsibilities involved. An individual is hired into a particular job and can receive recommended merit increases that advance the employee through a fixed number of steps, usually five. However, once a library assistant has reached the top of the pay scale for that level, no more advancement is possible unless individuals are hired into a different job or have a significant number of higher-level duties reassigned to them. While merit increases within a level are based on an individual’s performance, movement between steps within the library assistant series—in contrast to the librarian series—is dependent upon the formal structure and content of the job. Top-ranking assistants generally supervise the work of other assistants and manage entire work units or departments, but always within the restraints of their supportive, functional relationship to the academic librarians who set the guidelines and evaluate their work.

Through our experience as librarians in technical and public service, we became aware of a gradual shifting in roles that seems to be undermining the traditional distinction between professional and support staff. Pressures caused by changes in technology and by budget restrictions seem to be resulting in deprofessionalization of staff. Librarians who felt overburdened by clerical duties saw themselves prevented from participating in activities that encouraged professional growth. Library assistants who took on additional responsibilities felt the lack of adequate compensation and recognition. In order to test whether these perceptions of deprofessionalization and discontent were true, we decided to study the job satisfaction and job duties of these two groups to determine whether there was significant blurring between professional and paraprofessional roles.

LITERATURE REVIEW

Some recent job satisfaction studies have pointed out how difficult it is to isolate contentment in the workplace from an individual’s general state of mental health. The question of what frame of reference a person uses in assessing a job, the work environment, and work relationships is problematic because of a complex interaction of childhood predispositions, attitudes about work, and changing worker needs and perceptions over time. However, a counterpoint to this individualistic approach to job satisfaction is the argument that all people have certain needs, even if they prioritize those needs differently at different times, and that problems in an organization or in job structure within a work force can be identified through the sheer weight of consistent responses that seem to violate or meet significant human needs.

The vast amount of published literature on job satisfaction testifies to the perceived importance satisfaction has in the workplace. A number of those studies have examined job satisfaction experienced by library employees. However, few studies have specifically compared the job satisfaction of professional and paraprofessional staff within libraries. Beverly P. Lynch and Jo Ann Verdin studied full-time staff in three academic libraries. Staff were in departments performing either book selection, acquisitions, cataloging, circulation, or reference. The nature of the functions chosen would limit the majority of respondents to either the professional or paraprofessional categories. They were able to
verify only one of their seven hypotheses tested, that there is no significant difference between men and women library employees' job satisfaction. Our findings matched theirs. Their further discovery that librarians reported higher levels of satisfaction than paraprofessionals again matched our findings and supports Veaner's assertion of a division in level of job satisfaction along structural lines. Other studies, which focused solely on professional job satisfaction, support Lynch and Verdin's finding that professional staff are, on the whole, relatively happy with their work and find it intrinsically satisfying. William J. Vaughn and J.D. Dunn compared job satisfaction among six university libraries and, within one library, by six departmental subgroupings. While data was collected on the respondents' occupational levels, the study's primary focus was on comparing organizational and structural differences; thus, no data on the relationship of satisfaction to occupational level was reported.

We became aware of a gradual shifting in roles that seems to be undermining the traditional distinction between professional and support staff.

Two studies have reported library professional staff as having a lower satisfaction rating than other library workers. Lawrence D. Prybil investigated whether job satisfaction could be correlated to performance or occupational level for three groups within one academic library: librarians, all clerical and nonprofessional staff, and maintenance/custodial workers. Comparison with our study is not possible since he did not distinguish among the various "nonprofessional" staff. Unlike Lynch and Verdin and our own findings, his results indicated that the middle group (clerical/paraprofessional staff) were more satisfied, but this was not proven to be statistically significant. He was unable to establish a strong relationship between occupational level and satisfaction. Peter F. McNally compared the job motivation and satisfaction of reference staff in ten Ontario public libraries, investigating the hypothesis that professional reference librarians would rank higher on both aspects than would reference technicians or other groups doing reference work. Although both groups were at a reasonably high level of satisfaction, his findings contrasted with most other studies in that the professionals were "at least as dissatisfied and unmotivated, if not more so, than other groups." This dissatisfaction may have been related to the organizational environment, but further study would be needed to determine the exact causes.

Aside from the few comparative studies noted above, most of the research or literature focusing on library paraprofessionals discusses job design, task assignment, or training. A notable exception is Russell's questionnaire, mentioned before, which was sent to paraprofessional library staff in a sample of academic and public libraries in Great Britain. His findings of a strong dissatisfaction among paraprofessionals with their status with the scope of their duties and responsibilities, and with the opportunities for promotion, supports our results.

**METHODOLOGY AND LIMITATIONS**

This study, funded through a grant awarded by the Librarians Association of the University of California, was designed to compare both satisfaction and self-reported frequency of job activities across a broad spectrum of librarians and library assistants in the University of California libraries. A three-part questionnaire was designed based on the Minnesota Satisfaction Questionnaire used by S.S. Chwe in his 1976 dissertation that compared the job satisfaction of catalogers and reference librarians in academic libraries. A modification of his questionnaire was pretested on a random sample of five librarians and five library assistants at all nine University of California campuses, then revised, and in 1983 a total of 889 questionnaires were returned by 326 librarians and 563 library assistants. The response from a staff of 599 librarians and 1,573 library assistants is considered high for university question-
naires. Sixty-three percent of the respondents were library assistants and 37 percent were librarians. Although the top three levels of administrators—university librarians, associate and assistant university librarians—were included in the mailing, their number was so small that, for reasons of confidentiality, they have been excluded from the report. The process of data gathering, analysis, and paper writing has been lengthy.

The questionnaire was organized into three parts. Part one asked respondents to assign frequency levels to a wide range of library activities. These activities were chosen either to reflect the traditional distinctions made between “professional” and “nonprofessional” responsibilities (e.g., commercial database searching versus checking out library materials), or to highlight the most hotly debated areas of overlap (e.g., providing reference assistance or performing original cataloging).

To clarify the role of librarians in contrast to library assistants, we asked a series of questions regarding access to continuing education and channels of influence ranging from involvement with training and supervision to policy and budget decisions for a single department or the library as a whole. Part two of the questionnaire asked respondents about the level of satisfaction they experienced. The first question in this section asked them to rate their overall satisfaction. The remainder of the questions focused on specific aspects of the work environment. Here were placed questions about promotion criteria and staff development as well as specific satisfaction needs defined by Maslow’s categories of “lower order” (physiological and social) and “higher order” (esteem and self-actualization). Part two concluded with three open-ended questions asking respondents to use their own words to describe what they liked least and most about their jobs and what they would most like to change if they were able. The final section covered the sociodemo-graphic and job-related characteristics of the respondents.

Statistical evidence such as this relies heavily on contrasting large groups of respondents, i.e. the entire population of library assistants with the entire population of librarians. Since we were especially interested in variations and similarities between lower and higher steps of staff within specific kinds of library departments, some of our data is derived from a small number of respondents and so does not prove validity under standard statistical tests. For our purposes, these responses were extremely relevant since they were indicators of what may be significant future shifts in responsibility and blurring of professional and paraprofessional roles. In order not to prejudice our response, we did not ask specific questions in the survey about the blurring of roles. Although our survey results show evidence of overlapping responsibilities, only the essay section elicited responses that directly addressed role ambiguity.

We faced the problems of how to sufficiently describe the library tasks we included so that they could be labelled “professional” or “paraprofessional.”

In developing part one of the questionnaire, we faced the problem of how to describe the library tasks we included sufficiently so that they could be labelled “professional” or “paraprofessional.” In fact, the difficulty we had in doing this parallels the problems faced by the profession in trying to define what it is that each class of library employee does that makes it unique and thus rewarded differentially. This problem is compounded by the tendency of respondents to over-report the importance of their own jobs. To compensate we designed task descriptions that allowed us to correlate frequency of task performance with measures of complexity or responsibility. For example, we combined the responsibility of supervision with the number and levels of employees supervised, and working at the reference desk with the frequency with which the respondent worked unsupervised or with employees of a higher level.
POPULATION GROUP AND CLASSIFICATION STRUCTURE

The first table shows the number and percent of respondents; the second table breaks down the responses by campus.

The demographic section of our questionnaire can be summarized to show a composite portrait of the "typical" librarians and library assistants who responded. The University of California librarian is most likely to be a female in the associate rank between the ages of 30 and 39 who has a master's in librarianship and a bachelor's in another academic field. Although she has worked in the U.C. Library system from 11 to 20 years, she has only been in her present position an average of 0 to 5 years. Her primary responsibilities are in public service in a central, rather than a branch, library. She supervises library assistants and interacts with 6 to 15 fellow library employees daily. Very little of her time (15 percent) involves clerical or repetitive tasks and she spends between 1 and 4 hours per month on committee work. The composite library assistant respondent is female, but in contrast to the typical librarian, her age may range from 20 to 39. She is at the Library Assistant II rank with a bachelor's degree and 5 years or less of U.C. Library system experience. She also works in a central library but primarily in technical services where over 80 percent of her time is spent doing clerical or repetitive production tasks. She is most likely to supervise student library employees and not to serve on committees. From this composite the reader could conclude that librarians and library assistant job responsibilities are distinctive and that there is little overlap or blurring. However, when the library assistant responses are broken down by rank, it was found that the higher ranks, LA III and IV, showed important areas of similarity to librarians.

JOB RESPONSIBILITIES

How did the duties of librarians and library assistants compare? What were the significant areas of difference and/or overlap? To answer these questions, we examined reported frequency of tasks and responsibilities in four areas of library work: collection development, technical service (bibliographic access), public service, and management.

Collection Development

Respondents were asked to identify how frequently they performed four aspects of collection development activity: bibliographic verification, selection, weeding, and consulting with faculty. Table 3 shows that those three activities that influence the content and purpose of the collection are, as we expected, more frequently done by librarians than by library assistants. But certain areas of overlapping responsibilities are also evident. Bibliographic verification, for instance, the one activity that we hypothesized would be overwhelmingly the responsibility of library assistants, is done almost equally by both groups. It is unclear from the responses if those librarians who report doing bibliographic checking for collection development see this as a legitimate part of their job responsibilities. Perhaps they are trouble-shooting difficult orders already attempted by library assistants. This table also shows that 10 to 11 percent of library assistants frequently engage in building collections. However, a closer examination of the responses indicates that approximately 80 percent derive

TABLE 1

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</tr>
<tr>
<td>Library Assistant III 172</td>
</tr>
<tr>
<td>Library Assistant IV 96</td>
</tr>
<tr>
<td>Totals 563</td>
</tr>
</tbody>
</table>

*In this table, as well as subsequent ones, percentages sometimes total to more or less than 100 because of rounding.
from library assistants at the step III or IV levels (see table 4).

For example, of the forty-four library assistants who select materials to acquire "fairly often or very frequently," thirty-five are library assistant IIIIs and IVs. While this is a relatively small number, it does raise some interesting questions: Are these library assistants with esoteric languages or located in small libraries, or has a decision been made by their library administrators permanently to reassign a traditionally professional task?

**Technical Services**

Job responsibilities in technical service areas have been shifting for some time in libraries. When respondents were asked how frequently they performed five tasks involving bibliographic access and control, it was clear that even those activities we hypothesized were professional-level tasks—original cataloging and name authority control—have become the responsibility of both groups (see table 5). This blurring becomes even more apparent when the responses are broken down by levels within each group as shown by table 6.

While blurring of job duties in collection development could be seen as an anomaly, we see from table 6 that original cataloging and authority control is done with almost equal frequency by library assistants III and IV and assistant and associate librarians.

**Public Service**

A third area of job responsibility investigated was the public service done by librarians and library assistants. Sixty-five percent of librarians compared with 48 percent of library assistants report public service as at least one of their primary responsibilities. We identified six public service tasks, including professional and paraprofessional activities, and then asked respondents to indicate how frequently they performed these. Table 7 below shows these responses for all steps within both groups.
This table shows some interesting relationships. Clearly, handling materials is more frequently done by library assistants, and teaching library use is dramatically the purview of librarians. Information and directional assistance cuts across all lines. The responses to activity "c: answering complex reference questions" highlight the lack of precision that Veener lamented in his article—what is perceived as complex by one individual may be routine to another. In total, 66% of the librarians, but also 26% of the library assistants report answering complex reference questions. In an attempt to clarify "complex," we asked another set of questions that focused on whether librarians and library assistants were responsible for working on a reference desk alone—hypothesizing that in such circumstances complex questions would be routinely encountered. Library assistants responding to this question indicated that 60% do work alone fairly often or very frequently. It is interesting to speculate whether this is the beginning of a change similar to the shifts in technical services responsibilities documented above. A hierarchical division of increasing responsibility is more evident in public than technical service, with more clearly visible functions that are reserved for librarians only.

Management and Supervision

Several areas of library management were identified and studied including ad-

### TABLE 5
FREQUENCY OF TASKS INVOLVED IN BIBLIOGRAPHIC ACCESS AND CONTROL

<table>
<thead>
<tr>
<th>tasks</th>
<th>LAs %</th>
<th>Librarians %</th>
</tr>
</thead>
<tbody>
<tr>
<td>preparing records for computer input</td>
<td>38</td>
<td>26</td>
</tr>
<tr>
<td>assigning classification numbers</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>doing copy cataloging</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>doing original cataloging</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>establishing name authority control</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>

### TABLE 6
ORIGINAL CATALOGING ACTIVITY BY STATUS AND LEVEL

<table>
<thead>
<tr>
<th>tasks</th>
<th>LAI %</th>
<th>LAll %</th>
<th>LAlIII %</th>
<th>LAlIV %</th>
<th>Asst. Lbn. %</th>
<th>Assoc. Lbn. %</th>
<th>Lbn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>developing the collection by</td>
<td>7</td>
<td>6</td>
<td>21</td>
<td>21</td>
<td>37</td>
<td>36</td>
<td>19</td>
</tr>
<tr>
<td>doing original cataloging</td>
<td>5</td>
<td>13</td>
<td>33</td>
<td>22</td>
<td>22</td>
<td>33</td>
<td>18</td>
</tr>
</tbody>
</table>

### TABLE 7
PUBLIC SERVICE ACTIVITIES OF LIBRARIANS AND LIBRARY ASSISTANTS

<table>
<thead>
<tr>
<th>tasks</th>
<th>LAI %</th>
<th>LAll %</th>
<th>LAlIII %</th>
<th>LAlIV %</th>
<th>% Asst. Lbn.</th>
<th>% Assoc. Lbn.</th>
<th>% Lbn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>helping patrons use the library by:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. paging or checking out materials</td>
<td>58</td>
<td>40</td>
<td>38</td>
<td>53</td>
<td>18</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>b. giving information or directions</td>
<td>60</td>
<td>51</td>
<td>49</td>
<td>63</td>
<td>65</td>
<td>68</td>
<td>64</td>
</tr>
<tr>
<td>c. answering complex reference questions</td>
<td>17</td>
<td>18</td>
<td>31</td>
<td>39</td>
<td>56</td>
<td>73</td>
<td>67</td>
</tr>
<tr>
<td>d. teaching library use through tours</td>
<td>1</td>
<td>6</td>
<td>12</td>
<td>16</td>
<td>33</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>e. teaching library use through presentations, seminars, workshops, lectures, etc.</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>32</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>f. advising scholars about collections, research strategies</td>
<td>4</td>
<td>6</td>
<td>11</td>
<td>18</td>
<td>33</td>
<td>40</td>
<td>42</td>
</tr>
</tbody>
</table>
ministration, supervision, decision-making and perceived influence, staff training, and report-writing. Administration is more often done by librarians than by library assistants. Thirty-one percent of the librarians report administration as a primary job responsibility. For 7% of the librarians, it is their sole activity, and for an additional 24% it is a primary part of their jobs. In contrast, only 8% of library assistants report administration as a primary job responsibility.

**Supervision and Training**

Both librarians and library assistants report a high amount of supervisory responsibility, as reflected by table 8.

Although supervision is done by both librarians and library assistants table 9 shows that library assistants are more involved in the direct supervision of student employees than are librarians, whereas librarians are more involved in supervising library assistants.

Not surprisingly, responsibility for training follows a similar pattern. Forty-six percent of library assistants, but only 10% of librarians, fairly often or very frequently train student library employees. Library assistants also more often report training clerical employees. Librarians, as might be expected, more often report spending time training other librarians: 15% do so fairly often or very frequently and only 34% never train their colleagues. However, an interesting exception to the parallel between supervision and training is found in the case of library assistants. Whereas 62% of the librarians report being responsible for the direct supervision of library assistants, only 19% report that they fairly often or very frequently spend time training library assistants. By contrast, although a much smaller percentage (34%) of the library assistants report having direct supervision of other library assistants, a higher percentage (24%) report that they fairly often or very frequently spend time training their library assistant colleagues. While there is no way of knowing from these data what percent of library assistants—at what levels—require training, there is an interesting difference in the amount of training time library assistants receive based on whose supervision they are under.

**Participatory Management**

The questionnaire responses show that whether or not librarians classify themselves as administrators or supervisors, they are much more involved in participatory management activities that allow them to influence library policies, goals, and objectives. Committee work is the near-exclusive domain of librarians. Only 8% of librarians compared to fully 65% of the library assistants report spending no time on committee work. Furthermore, among those who report time spent on committees, the extent of time is far greater for librarians.

**TABLE 8**

<table>
<thead>
<tr>
<th>Supervise</th>
<th>Lbns</th>
<th>LAS</th>
<th>SLES</th>
<th>Clerical</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-20+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lbns</td>
<td>41</td>
<td>62</td>
<td>41</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>LAS</td>
<td>1</td>
<td>34</td>
<td>59</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

**TABLE 9**

<table>
<thead>
<tr>
<th></th>
<th>% Who Supervise None</th>
<th>% Who Supervise 1-20+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lbns</td>
<td>LAS</td>
</tr>
<tr>
<td>Student library employee</td>
<td>59</td>
<td>41</td>
</tr>
<tr>
<td>Clerical workers</td>
<td>78</td>
<td>91</td>
</tr>
<tr>
<td>Other</td>
<td>86</td>
<td>97</td>
</tr>
<tr>
<td>Library assistants</td>
<td>38</td>
<td>66</td>
</tr>
<tr>
<td>Librarians</td>
<td>59</td>
<td>99</td>
</tr>
</tbody>
</table>
As has been shown, librarians are more heavily involved in the management of academic libraries—in administration, in supervision of higher-level employees, and in committee work. They are also more involved than library assistants in direct and indirect activities that provide an opportunity to gain information and wield influence. As can be seen in table 10, librarians report closer working relationships with colleagues and more frequent attendance at conferences, workshops, and continuing education programs than do library assistants.

This higher level of contact, collaboration, and continuing education experienced by librarians translates into a greater amount of influence on management decision-making activities, such as analyzing, planning, evaluating, and developing. Table 11 compares the decision-making activities and perceptions of librarians and library assistants.

Not only do librarians have more decision-making responsibilities than library assistants, but the collaborative and continually changing nature of librarians' jobs allow access to information and channels of influence not available to library assistants.

**Writing Tasks**

Involvement in job-related writing tasks is very heavily the responsibility of librarians. Although the writing done by each group is most often of letters and memos, 71% of the librarians compared with 46% of the library assistants report this activity on a fairly often or very frequent basis. In the next most frequent writing activity—evaluations, reports and proposals—the gap between librarians and library assistants remains at 25%. One half of librarians and almost one quarter of library assistants engage in this fairly often or very frequently. Even the writing of procedures, manuals and handbooks—materials more often used by technical

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**TABLE 10**

<p>| FREQUENCY OF INTERACTIVE ACTIVITIES OF LIBRARIANS AND LIBRARY ASSISTANTS IN PERCENTS |
|-----------------------------------------------|-----------------------------------------------|
| &quot;Fairly often&quot; and &quot;Very frequently&quot; Responses Combined | |</p>
<table>
<thead>
<tr>
<th>% LAs</th>
<th>% Librarians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work collaboratively with others</td>
<td>64</td>
</tr>
<tr>
<td>Have contact with staff beyond my immediate work unit</td>
<td>58</td>
</tr>
<tr>
<td>Must learn new methods or technologies</td>
<td>36</td>
</tr>
<tr>
<td>Attend workshops</td>
<td>9</td>
</tr>
</tbody>
</table>

**TABLE 11**

<p>| FREQUENCY OF DECISION-MAKING ACTIVITIES OF LIBRARIANS AND LIBRARY ASSISTANTS IN PERCENTS |
|-----------------------------------------------|-----------------------------------------------|
| &quot;Fairly often&quot; and &quot;Very frequently&quot; Responses Combined | |</p>
<table>
<thead>
<tr>
<th>% LAs</th>
<th>% Librarians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze and evaluate programs, policies and services</td>
<td>17</td>
</tr>
<tr>
<td>Plan or develop new procedures or services for my immediate work unit or department</td>
<td>27</td>
</tr>
<tr>
<td>Plan or develop new procedures or services for my library or library system</td>
<td>7</td>
</tr>
<tr>
<td>Am able to influence important decisions in my department</td>
<td>24</td>
</tr>
<tr>
<td>Am able to influence important decisions in the library</td>
<td>15</td>
</tr>
<tr>
<td>Make policy decisions</td>
<td>7</td>
</tr>
</tbody>
</table>
services staff—is done more frequently by librarians (35%) than by library assistants (23%). Paralleling the teaching role of librarians, the writing of instructional library materials is almost completely done by librarians. Twenty-one percent of librarians write instructional materials fairly often or very frequently and only 26% never do so. In contrast, only 6% of the library assistants write instructional materials with any real frequency and 72% report that they never do so.

**Blurring or Overlapping**

In examining self-reported frequency of job tasks and responsibilities, our study has found a major overlap of responsibilities in the area of creating bibliographic access, small but provocative overlaps in the areas of collection development and public services, and a strong division of responsibilities in management-related activities. In many cases in which the overlap occurred, the duties and responsibilities of library assistants at the III and IV levels were blurring into those of librarians. The heaviest blurring occurred in the frequencies reported for certain tasks by library assistant IV and assistant librarian, such as for original cataloging. If Veaner’s hypothesis is correct, these two groups of library assistants should be the most dissatisfied since their roles are the most ambiguous. How satisfied are librarians and library assistants within the University of California system? Can this dissatisfaction be linked to role ambiguity or to specific employment conditions?

**JOB SATISFACTION**

As a group, University of California library staff are extremely satisfied with the work they do—reporting higher levels of job satisfaction than many other American workers. However, a comparison of the satisfaction levels reported by librarians and library assistants shows a significant difference between the two groups.

Library assistants and librarians were asked three questions relating to their overall job satisfaction. Asked “In general how satisfied are you with your present job?” 76% of the librarians, but only 50% of the library assistants, selected the two highest categories of satisfaction on a 5-point scale. Also, when asked how satisfied they are with the nature of the work they do, 82% of the librarians but only 52% of the library assistants checked the two highest satisfaction ratings. Furthermore, although 44% of the librarians gave the “nature of their work” the highest possible rating (a #5), only 22% of the library assistants did so. A third question, included in the section on job description, asked the respondents how frequently they “do the kind of work they enjoy.” Response categories for this item ranged from never, seldom, sometimes, and fairly often to very frequently. Whereas 45% of the librarians indicated that they very frequently do the kind of work they enjoy and another 42% said that they fairly often do, only 19% of the library assistants gave the very frequently response and another 39% indicated that this happened fairly often. Combining the two categories of frequency, fully 87% of the librarians indicate that they at least fairly often do the kind of work they enjoy: this compares with 59% of library assistants. The most significant result of our survey and, to us, the most surprising, was the high satisfaction level of the librarians. Table 12 compares the job satisfaction reported by librarians and library assistants.

Fully 87 percent of librarians indicate that they at least fairly often do the kind of work they enjoy: this compares with 59 percent of library assistants.

This discrepancy between the two groups prompted us to investigate what areas show the most job dissatisfaction, and to ask if these differ for librarians and library assistants. The dissatisfaction of both groups is markedly clustered in certain steps and ranges within the salary/promotion hierarchy. However, some dissonant themes cut across all levels within each group.

We found that one of the most significant ways the two groups differ is in their
assessment of how effectively the library is using their expertise and abilities. On two questions that asked how well respondents felt their education and training were being used, 70% or more of the librarians answered in the highest two satisfaction categories compared to 30% or less of the library assistants. The ability to help the public was valued very highly by public and technical service librarians alike. In the essay section one librarian wrote that "faculty contact" and being engaged in "ongoing university research through my liaison assignments" was the most rewarding part of the job.

Another traditional area of dissatisfaction in organizations focuses on salary and promotion issues, and the library environment is no exception. Both librarians and library assistants reported a significant amount of dissatisfaction with salary and advancement. However, the difference in responses was much wider in this area than in any other. Eighty percent or more of the library assistants reported dissatisfaction with this part of their jobs. Table 13 summarizes these areas of dissatisfaction and shows the wide discrepancy in responses between the two groups.

As noted before, when the responses to the job satisfaction questions were broken down by ranks within the librarian and library assistant series, there are markedly different satisfaction levels. The widest gap in response occurred between library assistants I and II and library assistants III and IV.

The clumping of dissatisfaction around certain issues, and the division of response, especially between the two lower levels of library assistants and the two upper levels can be characterized as focusing on issues of equity and just reward. Our assumption in designing the original questionnaire was that major sources of complaint for librarians would be the amount of "clerical" or paraprofessional work they had to perform, and that library assistants would object to monotonous and repetitive work. However, neither was the case. Pockets of dissatisfaction rather appeared at certain crucial steps within the library assistant rank around promotion opportunities, promotion criteria and procedures, as well as over the broad satisfaction question discussed above. In each case there was both a strong discrepancy between librarians and library assistants, and between the highest level (IVs) library assistants and the lower steps (most noticeably the LA IIs). This same discrepancy was noticed within the librarian ranks, but it was less pronounced.

**TABLE 12**
OVERALL JOB SATISFACTION OF LIBRARIANS AND LIBRARY ASSISTANTS IN PERCENTS

<table>
<thead>
<tr>
<th>In general, how satisfied are you with your present job:</th>
<th>Not at all satisfied (1)</th>
<th>Somewhat satisfied (2)</th>
<th>Very satisfied (3)</th>
<th>Fairly often (4)</th>
<th>Never (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarians</td>
<td>2</td>
<td>5</td>
<td>18</td>
<td>44</td>
<td>31</td>
</tr>
<tr>
<td>Library Assistants</td>
<td>6</td>
<td>12</td>
<td>32</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>How satisfied are you with the nature of the work you do: Librarians</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>38</td>
<td>44</td>
</tr>
<tr>
<td>Library Assistants</td>
<td>5</td>
<td>12</td>
<td>31</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>On my present job, I do the kind of work I enjoy: Librarians</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>Library Assistants</td>
<td>3</td>
<td>10</td>
<td>28</td>
<td>39</td>
<td>19</td>
</tr>
</tbody>
</table>
TABLE 13
SOME ASPECTS OF JOB SATISFACTION SHOWING THE GREATEST DISCREPANCY IN PERCENTS

<table>
<thead>
<tr>
<th>Work you do in relation to your education and training</th>
<th>% Librarians</th>
<th>% LAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities to use your education and training</td>
<td>30</td>
<td>73</td>
</tr>
<tr>
<td>Opportunities for your own advancement</td>
<td>16</td>
<td>47</td>
</tr>
<tr>
<td>Salary you receive compared with that of others doing a comparable job</td>
<td>28</td>
<td>58</td>
</tr>
<tr>
<td>Opportunities you have to change your job</td>
<td>23</td>
<td>48</td>
</tr>
<tr>
<td>Criteria used in advancement</td>
<td>19</td>
<td>39</td>
</tr>
<tr>
<td>Procedures used in advancement</td>
<td>16</td>
<td>35</td>
</tr>
</tbody>
</table>

Interestingly, salaries and promotions are viewed with greater dissatisfaction than the relationship to supervisors. This may be due to the fact that within the university and library structure, supervisors have significantly less control over the salary/promotion opportunities of their employees. Merit increases for eligible librarians and library assistants are rather fixed. Direct supervisory control over librarians’ merit/promotion decisions is buffered by other administrative input and a strong system of peer review with mutually established criteria for assessing performance and determining parity. Compared to librarians, a library supervisor can have a greater effect on a library assistants’ salary and promotion opportunities, yet even this influence is circumscribed by the library assistants’ classification structure. Library assistant ranks I-IV are based on the job responsibilities of the position, not the skills and abilities of the person hired. Performance is rewarded within a rigid structure of steps that reach a final plateau for each rank. Many long-term library assistants have “topped-out” and are no longer eligible for merit raises. Movement from rank to rank, promotion, for library assistants is not based on the supervisor’s assessment nor on the employee’s job performance but on job duties of the position. We have observed some of the consequences of these differences in salary structure, performance expectations, and rewards in the job description section of this paper.

Librarians, on the other hand, do not have a formal job description. They are expected to show a high degree of initiative, professional and personal commitment to developing and contributing to the mission of the library and the profession. Librarians unwilling to make this commitment remain indefinitely at a lower rank. However, no matter what their primary job responsibilities or descriptions, those librarians who choose to contribute will continue, for a much longer period than library assistants, to be rewarded with salary increases and promotions recognizing those contributions.

CONCLUSION

We decided to examine the rewards and responsibilities of librarians and library assistants at the University of California in order to test a thesis by Allan Veaner. He asserts that because librarians and library assistants often perform tasks demanding the same expertise as librarians, library assistants tend to feel resentful. Our study has found that their dissatisfactions stem not only from inequity in pay, but also in promotion procedures, job development, and general status. Blurring of responsibilities is an important issue in a hierarchical organization, particularly as such blurring causes dissatisfaction in an environment that is as service-oriented and people-dependent as a library.

We found that while there are a number of areas where both professionals and paraprofessionals appear to perform the
same work, when the frequency of that work and the span of control or responsibility are examined, there are often clear distinctions between the two groups. However, we did uncover some provocative areas of blurring where tasks traditionally regarded as professional were being performed by library assistants. These blurred areas may well point to a general shifting of certain tasks from professional to paraprofessional levels of responsibility. Reassignment of responsibilities from professional to support staff has characterized library work for decades. Nowadays librarians can list many responsibilities that were always done by librarians and are now routinely done by support staff. This trend is likely to continue, and perhaps even accelerate as libraries deal with budget constraints and as the profession meets the demands and challenges of new information needs and constantly changing technology. However, even if many tasks were not being done simultaneously by both groups, a work situation marked by shifting responsibilities may cause misunderstanding of roles and of appropriate rewards.

And in fact this seems to be the case. Although each group’s satisfaction rate is very high, a comparison of the satisfaction levels shows a wide gap between librarians and library assistants, with the highest discrepancies in the areas of worker utilization and salaries. As a group, U.C. library assistants are seriously dissatisfied with the reward structure and perceive that they are being treated inequitably.

This juxtaposition of high general satisfaction rate with strong dissatisfaction with parts of the job is reflected in the responses library assistants wrote in the comment section. Written in response to the question, “What do you like least about your job?”, the following statement illustrates the sense of injustice that was expressed by many:

I would change the pay-scale so that I was paid according to my skills as I learned them; that is the built-in step raises are so far apart that one has to work twenty years to get to the top of the pay scale. After one gets to the top, there is nowhere else to go, especially if one is doing professional work but not being paid professional wages, as are librarians. . . . Sorry if this seems like more than one aspect, but it really is one important problem, especially in determining career satisfaction and human dignity.

Interestingly, this person marked the next highest column of the satisfaction scale in response to the question “In general how satisfied are you with your present job?” and likewise when asked to rate his satisfaction with the nature of the work he was doing. Procedures and opportunities for advancement were given the lowest marks.

After looking at a series of similar complaints and comparing the low satisfaction areas of promotion and compensation to the high satisfaction with intrinsic rewards such as autonomy and variety, we could speculate that paradoxically what contributes to higher satisfaction in one area may lead to disappointment in another. A more challenging line of duties will make the work more interesting, but it will also invite unfavorable comparison with librarians who seem to be involved with similar or equally difficult assignments that offer them substantially better rewards. It is very easy to conclude that two interactive but unequal work and reward systems, one at a higher level than the other, will inevitably lead to conflict and dissatisfaction. However, if workers are not seeing their roles clearly, and if tasks are constantly shifting between librarians and library assistants causing dissatisfaction, there may be some solid ways for management to clarify roles and to establish equity. Processes both of action and communication are needed to affect staff perceptions. Library administrators should carefully examine library tasks to ensure that they are being done by the most appropriate personnel and rewarded at an appropriate level.

Since 1977 when a fourth step was added to the initial three, the University of California library administration has been concerned with restructuring the library assistant series to compensate those employees for their increasing supervisory responsibilities and special subject or management expertise. A fifth step was under consideration, but not yet implemented while our survey was conducted.
Nevertheless our findings make it doubtful that this additional step (effective since April 1983) will solve the endemic problems mentioned by library assistants in our report. Unlike the lower ranks of the assistant series, the library assistant V category is part of the Administrative and Professional Staff series that was established to recognize "unique and valuable contributions to the University's overall mission of education, research, and public service and to encourage individual achievement, professionalism, initiative, and creativity." Job descriptions resemble that of academic librarians: "advanced paraprofessional knowledge enabling the performance of a full range of coordinating and/or highly specialized functional/subject-area activities (i.e. reference service at a level comparable to professional librarians, full original cataloging without routine revision)." It's pay scale is open-ended and based on comparative merit.

If role blurring is a problem now, this deliberate overlap, although reflected in salary and status will not permit access to peer review and other important characteristics that distinguish academic librarians from their paraprofessional colleagues. If appropriately funded and administered, the new open merit system could, if applied to ranks I-IV, address the inequity in pay and status currently experienced by library assistants who assume new responsibilities or contribute to the library's mission in significant ways without a major change.

However, because the University of California libraries experience a varying level of funding in the state each year, they cannot always offer appropriate monetary rewards for employee performance—a condition shared by many other public and academic libraries. The new group of library assistant Vs are already experiencing problems in equity and monetary rewards.

The survey respondents wrote about other kinds of recognition in addition to pay. While mentioning the need for monetary rewards, many of the library assistants also emphasized a need for appreciation. One respondent identified the two major aspects of the job that he wished to change as "getting a salary increase commensurate with my responsibilities" and changing the "apparent low prestige and incomprehension in which my area of work seems to be held by many librarians on campus." This comment reflects Russell's finding that "Many nonprofessional Library staff do not want to become professional librarians, but they do want a fulfilling job and one that offers some opportunity for promotion." A key word here is fulfilling.

There are other ways libraries can validate their employees' work but much perceivable good faith must go into the effort otherwise it will be construed as manipulative. As our survey has shown, library assistants are fairly restricted in their access to committee work and in their collegial relationships within the library. Perhaps more involvement by library assistants in participatory management activities would help them gain a sense of control and influence and allow them to communicate to professional librarians the importance and dignity of the work they do.

Librarians also need to take a more aggressive role, as Veaner has called for, in communicating to library assistants the very real difference in job content, span of control and responsibility, peer review, and performance expectations between librarians and library assistants. Many library assistants have very little idea of the true nature of librarians' work or of the open-ended nature of the performance expectations they must meet for promotion.

Another traditional area of dissatisfaction in organizations focuses on salary and promotion issues and the library environment is no exception.

Further research is needed to ascertain the extent to which the obviously perceived inequity by library assistants injures their work performance or their relationships with professional librarians. Our study shows that in general, the work
environment of the University of California libraries provides a climate that contributes to the meaningfulness of work. The greatest agreement between librarians and library assistants was found in their satisfaction with such aspects of their work as the opportunity to be of help to others, good relationships with co-workers, job security, variety, flexibility, and a surprising degree of autonomy. However, the responses also show that even workers who are in an intrinsically satisfying environment become critical and less satisfied if they perceive that they are not being treated fairly.

REFERENCES AND NOTES

6. Ibid., p.3.
8. Ibid., p.303.
18. Address labels were provided for the librarians from the secretary of each campus’s Librarian’s Association of the University of California (LAUC). For library assistants, a mailing list was obtained from the U. C. system-wide personnel office.
20. Currently each rank of library assistant is attached to a specific job. Therefore, to be promoted from LAI to LAlI, one must change jobs. This system is a present source of major dissatisfaction.
Job Satisfaction among Library Support Staff in Alabama Academic Libraries

Donna K. Fitch

The study emphasizes library support staff, a largely neglected group, and discusses a survey of the job satisfaction of these employees in academic libraries in the state of Alabama. The Job Descriptive Index (JDI) was used as the survey instrument, and the resulting satisfaction scores were related to the variables of size of city, sex, variability of working hours, type and size of institution, staff, department, historic race of the institution, and automation status of the library's functions. The null hypothesis could not be rejected for most variables, reaffirming conclusions of other studies that demographic factors do not influence job satisfaction. The need for better compensation and opportunities for promotion for academic library support staff is emphasized, as well as the need to relate satisfaction to quality of work-life issues.

Job satisfaction is an area that has been extensively studied in the business world since the 1930s, yet forty years passed before library-oriented studies began. The majority of these studies have focused on professional and paraprofessional librarians, and thus the needs and attitudes of library support staff have been largely overlooked. The present study explores some factors that may contribute to job satisfaction among support staff in academic libraries.

More than 6,000 articles on job satisfaction had been written by 1984, prompting the question: why embark on another study? As Patricia Cain Smith, Lorne M. Kendall, and Charles L. Hulin point out, little evidence exists successfully linking job satisfaction and productivity, so that frequently discussed topic is hard to support as a valid reason for additional research. However, Beverly P. Lynch and Jo Ann Verdin, in their study of job satisfaction in libraries, indicated a need for more studies that would be "conducted within the framework of the work itself." Few studies have been conducted in libraries, and many unexplored facets of job satisfaction in this context remain.

Aside from purely scientific reasons for such research, there is a humanitarian reason as well. Employees who must spend eight hours a day at a job should enjoy what they are doing, as Smith, Kendall, and Hulin, and Susanne Wahba indicate. Studies in improving the quality of working life, such as those indicated in Charles Martell's 1981 article, have pointed out the need for redesign of work systems. This redesign involves an attention to the needs of the employee, as well as the needs of the organization. Although the factors explored in the present study cannot be controlled by library managers, knowledge that dissatisfaction exists can assist further studies in disclosing and improving problem areas within the organization. Attention needs to be paid to satisfaction in connection with the ten-

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Attention needs to be paid to satisfaction in connection with the tenets of work system design, especially since many libraries are reorganizing in response to computer technologies.

Interest is added to the results by the location in which the study was conducted, and its possible relation to job satisfaction. In 1987, Alabama had a personal income per capita of $10,673, ranking forty-fifth among the fifty states, as compared with the U.S. average of $13,876.7

DEFINITION OF TERMS

Before continuing with the discussion, a few definitions are in order. The first is "job satisfaction" itself. The subject of job satisfaction is complex and has been defined in many ways. One author defines it as "the individual’s emotional reactions to a particular job," while another refers to it as "the feeling an employee has about his pay, his work, his promotion opportunities, his co-workers, and his supervisor."8,9 Michael Beer defines job satisfaction as "the attitude of workers toward the company, their job, their fellow workers and other psychological objects in the work environment." He adds that "[a] favorable attitude toward these indicates job satisfaction and vice versa."10 Smith, Kendall, and Hulin define job satisfaction as "the feelings a worker has about his job."11

Another phrase frequently used in this study is "support staff," meaning library employees whose educational level does not include the master’s in library science (M.L.S.), and whose positions support the functioning of the M.L.S.-degree librarians. Included in the definition are clerical and paraprofessional employees. Job satisfaction has been frequently debated, discussed, and researched since Robert Hoppock wrote Job Satisfaction in 1935.12 Most of the literature has coalesced around several major theories, including Maslow’s need hierarchy theory, Herzberg’s dual-factor or motivation-hygiene theory, and the theory of work adjustment. Readers interested in the general literature of job satisfaction are referred to the bibliography compiled and edited by Ruth M. Walsh and Stanley Birken, Job Satisfaction and Motivation: An Annotated Bibliography.13

In addition to general research on job satisfaction, more specific factors have been studied to determine their effects. As in this study, age, sex, and environmental characteristics have been explored, as well as community characteristics, organizational size, and geographical factors. Some of the references detailing these specific factors are mentioned throughout this article.

Satisfaction studies in libraries have been few, and those studying non-M.L.S.-degree staff are almost nonexistent. One study by Lynch and Verdin used all full-time library employees as subjects, and dealt with the factors of the work itself, age, sex, occupational group, tenure, supervisory level, career commitment, and library department.14 They tested the null hypotheses of the relationships between these factors and job satisfaction, and found that: (1) job satisfaction was unrelated to sex; (2) older employees were more satisfied than younger workers; (3) people with more experience tend to be more satisfied; (4) those planning to stay in the same library are more satisfied; (5) nonsupervisors have lower satisfaction than supervisors; (6) reference department employees are more satisfied than any other department except acquisitions; and (7) professionals were more satisfied than library support staff members. This last finding contrasts with Lawrence Prybil’s report of no significant difference among occupational levels.15 Asadollah Azad’s 1984 dissertation explored the job satisfaction of paraprofessionals, primarily comparing satisfactions in public and technical services departments.16

In 1987, Alabama had a personal income per capita of $10,673, ranking forty-fifth among the fifty states, as compared with the U.S. average of $13,876.7
STUDY DESIGN

For the present study, the Job Descriptive Index (JDI), developed by Smith, Kendall, and Hulin, was used as the instrument. The Index consists of six scales, Work on Present Job, Present Pay, Opportunities for Promotion, Supervision, Co-workers, and Job in General. The scores for these scales are not combined, although many researchers have done so. The authors maintain that the individual factors are not equally weighted and cannot be satisfactorily combined.

Each scale consists of eighteen questions, except for Present Pay and Promotions, which have nine. Responses are yes, no, or a question mark indicating indecision. Validity of the JDI has been established through various trials, details of which can be found in Smith, Kendall and Hulin’s The Measurement of Satisfaction in Work and Retirement.

The prospective institutions for the present study were chosen from member libraries of the Network of Alabama Academic Libraries, a consortium of public and private four-year college and university libraries in the state. Directors of fifteen of the seventeen libraries permitted their employees to participate and provided the investigator with lists of their library support staff. From these lists, a stratified random sample of 185 subjects was chosen, and copies of the JDI were sent to them. Included in the packet was a series of demographic questions related to the variables, a letter explaining the survey, and an envelope for return of the instrument. To maintain demographic statistics on town size, etc., a code number was written on the survey. Interestingly, despite assurances in the cover letter of anonymity, several respondents from one institution cut off or obscured the code number upon returning the instrument.

Information about size of the town, size of the institution, size of the library’s staff, whether public or privately owned, and the library’s automation status was determined from the American Library Directory. The remaining replies came from the subjects themselves.

The study dealt with seventeen variables and their effect on job satisfaction. The null hypothesis was used in analyzing the variables. These factors can be divided into several groups, as follows:

- Demographic variables (size of the town or city in which the institution is located);
- Characteristics of the institution (public or private, its size, if historically black or white);
- Characteristics of the library (size of the library staff, if the library’s functions were automated or not);
- The subject (sex, age, educational level, income, number of years in library work); and
- The job itself (full- or part-time, day- or nighttime, fixed or variable hours, department in which the employee works, department size, amount of time spent working on a computer terminal).

RESULTS

The return rate was 64 percent, with subjects from sixteen libraries participating, including separate law or medical libraries from some institutions. The surveys were scored, and the data entered using SYSTAT—the System for Statistics, published by SYSTAT, Inc.

In these instances, the null hypothesis can be rejected; in all others, the null hypothesis cannot be rejected. These results are similar to those in Steven Seokho Chwe’s 1978 study, which also found that demographic variables have no effect on job satisfaction.

The size of the institution was found to have a significant effect on satisfaction with supervision (P < .05), but not on the other scales. Employees in libraries in small schools (less than 3,000 students enrolled) were most satisfied with supervision, while those in medium-sized institutions (3,000–9,000) were least satisfied. Beer, in his article “Organizational Size and Job Satisfaction,” cites interviews conducted by James Worthy in 1950 which “indicated that organizational size was the single-most important variable responsible for low job satisfaction.” Worthy went on to state that “morale and job satisfaction are related to integration (co-
hesiveness) and that integration is related to structural complexity and in turn organizational size." Other studies cited by Beer indicate the same principle. A Morse and Reimer study implies that "decision-making levels become more and more remote as the organization becomes larger." 

Medium-sized schools, in many cases, are in a state of transition from small to large. In small schools, more socialization takes place; people are able to learn more about each other and to become more familiar with their supervisors. In larger schools it may be obvious that contact with supervisors cannot be as personal. But in transitional organizations, workers who were employed at the library when it was smaller may feel that they have less contact with their supervisors than they formerly did. This new situation leads to frustration and feelings of being left out or slighted.

In addition, schools of this size may be implementing or planning to implement automation, a change that has a major effect on employees. In their book on managing organizational change, Patrick E. Connor and Linda K. Lake quote John Adams: "All changes are irksome to the human mind, especially those which are attended with great dangers and uncertain effects." While the advent of automation cannot be said to be a great danger (although some might even argue with that), it does have "uncertain effects" for those whose jobs are involved.

Lester Coch and John R. P. French, Jr. found that "resistance to change is a combination of an individual reaction to frustration with strong group-induced forces." They found that group resistance to change can be reduced or eliminated through the use of communication in group meetings. This idea is repeated by Martell, who said that "information should be available when and where it is needed. Traditionally, management has hoarded information and distributed it only when necessary to maintain its source of power. This practice needs to be severely limited." Better communication may solve, or improve, many dissatisfactions in medium-sized organizations. The institution of work groups instead of the traditional division of labor frequently used at clerical levels in libraries may be another answer, enhancing socialization as well as providing employees with more responsibility.

The way the question on supervision is asked in the Job Descriptive Index makes it difficult to determine what level of supervision is being addressed in terms of satisfaction or dissatisfaction. The statement in the JDI instructions says "Think of the kind of supervision you get on your job," but does not specify which level.

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**Women were more satisfied on all the scales than men.**

In this study, there were more significant differences in sex than in any other variable. Women were more satisfied on all the scales than men. Men's norms were an average of 14.01 lower than JDI norms, while women's were an average of 6.17 lower. The lowest difference in both men's and women's scores came in the area of Present Pay, 19.19 points lower than the JDI norms for men, 12.53 lower for women. This bears out H. Jack Shapiro and Louis W. Stern's finding that "non-professional women are more satisfied with their pay than are non-professional men." 

Michael J. Kavanagh and Michael Halpern studied university employees and compared the job satisfaction and life satisfaction of men and women at professional and nonprofessional levels. They compared their results to a 1957 study by Brayfield and Wells, which found "no significant relationships between life and job satisfaction for females." In the 1973 study, however, strong relationships were found, especially at job level one (nonsupervisory, nonprofessional, or clerical). They theorize that "the organizational climate and attitudes found in a university environment would be more supportive of the women's movement than those found in many other organizations."

The 1975 study by Shapiro and Stern also looked at job satisfaction of males and
females at both the professional and non-professional levels.31 In the non-professional sample, which included clerical workers, men were more satisfied with the work itself than women, while the women were more satisfied with supervision.

A 1975 article by Wahba discusses job satisfaction in terms of need fulfillment, need deficiency, and perceived need importance. She found that "women have significantly higher deficiencies than men in four areas: security, autonomy, esteem, and self-actualization needs," areas that were defined in the works of Maslow.32 Wahba explains this difference by saying that women have a "stronger desire or expectation . . . for a higher degree of security" than men.33 She relates the need fulfillment score to job satisfaction, and the need deficiency score to both the "personal expectations of need fulfillment and the actual fulfillment from the job."34 Wahba's study dealt with professional librarians.

Lynch and Verdin, in a study that included all full-time employees, concluded that there is no significant difference between male and female employees in job satisfaction.35 George P. D'Elia reached the same conclusion.36 However, Smith, Kendall, and Hulin uncovered substantial differences in male and female norms, explaining that "women are less satisfied overall than men because they receive less with which to be satisfied," but that "with a comparable level of income, women are more satisfied than men." They theorize that the reason is possibly because of different frames of reference.37

Does the answer lie in the fact that only 14 percent of the respondents were men? Although attitudes are changing, as the references cited above suggest, older ideas about the "proper place" for men and women may still exist in a region such as Alabama, which still adheres to traditional values that consider the male the source of the family paycheck. In a low-paying profession with little opportunity for advancement, possibly still viewed by some as "women's work," men become discontented. A person who is the sole support of his or her family cannot afford to work at the support staff level in a library. This may be the reason the majority of library workers in the state are female.

In the area of income, there was no significance, except in the scale of Opportunities for Promotion. Employees earning less than $8,000 per year (mostly part-timers) were least satisfied with their opportunities for promotion, while those in the $9,000-$9,999 range were most satisfied. Part-time personnel generally have fewer opportunities to be promoted. Reduced working hours limit organizational opportunity. The data gathered does not explain why those in the $9,000 range were most satisfied.

Most of the scales in the "years worked in the library" variable were not significant, with the exception of Opportunities for Promotion (P < .05). The most satisfied in this area, in partial contrast with the results of Lynch and Verdin's study, were those who have worked less than one year at the library; the least satisfied were the employees with ten or more years of service.38 At the support staff level, little opportunity for advancement usually exists. The study by Kavanagh and Halpern found that as job levels increase, job satisfaction decreases.39 One explanation they give for this seemingly contradictory finding is that stress rises as job levels increase. In this case, stress may also rise when job levels stop increasing, bringing about frustration and lower morale.

As figure 3 shows, fully 24% of the library workers surveyed earned less than the Alabama per capita income listed in the Statistical Abstract in 1987; about 75% earned less than the U.S. per capita income. Scores on the Present Pay scale for this survey were much lower than the JDI norms, as mentioned earlier, and the reason is evident. These results are markedly different from the ten-year study of job satisfaction in industry that reported higher scores in the South than any other region.40

Most employees in the survey worked only in the library in which they were presently employed. Only about a quarter of them had worked elsewhere, suggesting that they view their library employment as a job, not a career, and that they do not seek to move to other libraries as professional librarians do. One-third of
Sex: female: 86%
   male: 14%

Median salary range:
$10,000 to $14,999 per year

Median number of years worked
in that particular job: 4-6

Subjects having worked in
libraries other than the one
in which she/he was presently
employed: 25%

Median age: 30-39

Average highest educational
level attained: some college
courses without completion of
a degree.

FIGURE 1
Demographic Results

95% probability level
Opportunities for
Promotion and income
Work on Present Job and
sex
Supervision and size of
the institution

99% probability level
Opportunities for
Promotion and years in the
library
Supervision and sex
Job in General and sex

FIGURE 2
Significance of Dependent
and Independent Variables

these employees have worked in their
particular job and library between one and
three years. Whether their work-related
plans include subsequent library work is
unknown. Employees with less than one
year’s service are the most satisfied with
opportunities for promotion, while those
with more than ten years are least satis-
ied. As mentioned previously, employ-
ees are limited in how far they can ad-
vance without an M.L.S. degree.

One area in which no relationship with

satisfaction was found was time spent on a
computer terminal, probably because the
question on the survey was not clear
enough. The form of the question was
“What percentage of your present job is
spent at a computer terminal?” Note that
it did not specify day, week, or month.

Employees with less than one year’s
service are the most satisfied with oppor-
tunities for promotion, while
those with more than ten years are
least satisfied.

The effect of video display terminal radia-
tion on employees has been a frequently
discussed topic in the past few years, but
these articles are primarily concerned with
health effects. They do not address the
question of satisfaction, except in relation
to job stress. An article by Robert I.
Sutton and Anat Rafaeli in 1987 suggests that
working at a terminal is a more complex is-
ssue than just measuring satisfaction and
the percentage of time spent at that termi-

nal. Their research found that for clerical
employees, “characteristics of work sta-
tions may not be occupational stres-
sors.” They discuss intrusions, noise,
and heat as factors to be accounted for in
determining satisfaction with work sta-
tions. A 1981 article also shows that VDT-
workstation-related stress is a complex
topic. The need for further research in
this area increases as library automation
becomes more widespread.
CONCLUSION

The most urgent problems brought up by this survey are compensation and opportunities for promotion. Money is tight for education in Alabama, as it is in many states. While immediate supervisors have little, if any, control over salaries, they can make the department a better place in which to work by keeping these findings in mind. Supervisors can encourage employees who wish to pursue a degree or complete one, ensuring that they receive time off for such activities. Supervisors can be supportive of new ideas for improving the work place. Although not a panacea, positive attitudes can go a long way toward helping increase job satisfaction.

In organizations that are undergoing change, particularly those automating the library, the communication process needs to be examined. Quality of work-life issues must be addressed when reorganization takes place, if managers wish to keep dissatisfaction to a minimum. The need is great for librarians to become familiar with principles dealing with quality of work-life and management of organizational change. Martell points out that organizations, including libraries, are at an "elementary stage in their use of modern organization design techniques," and that the "perceptual and technical skills required to develop and implement contemporary work system design may not yet exist within librarianship." 43

A study with as many variables as the present one naturally generates more questions than it answers. Would a repetition of the study with a larger sample yield similar results? Studies performed in other states would also be enlightening. More information is needed about the work attitudes of the library support staff workers. Do they view their library employment simply as a job, rather than as a career? Do they see their library jobs as "women's work"? How do the male employees feel about their roles in the library? Do the jobs males have differ from the ones females do?

Job satisfaction in libraries continues to be a rich area for study, and each investigation generates further areas for study. The fact that most of the null hypotheses could not be rejected does not invalidate the study. The literature of library satisfaction studies is enriched by each bit of knowledge added to it, and results of some past studies are confirmed by the present study. The satisfactions of academic library support staff in one of the poorer states have been explored; in general, they correlate with norms established for the Job Descriptive Index used in the survey. Library managers at all levels who wish to be successful should examine their library in the context of job satisfaction studies, as well as quality of work-life and change management principles, to discover what changes would help raise the level of satisfaction of the very human people who work for them.

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Enhancing CD-ROM Searches with Online Updates: An Examination of End-User Needs, Strategies, and Problems

Susan K. Charles and Katharine E. Clark

Many academic researchers are interested in obtaining the most current information available when conducting computerized literature searches. A research project was conducted to evaluate the feasibility of providing an online updating service to end-users searching CD-ROM databases. Searchers using Silver Platter's Agricola database were asked to participate in the study. End-user searching strategies were observed and problems were noted. Factors such as cost-effectiveness and convenience were also studied. Data and observations indicate that end-users are interested in the availability of a low-cost, hybridized CD-ROM/online updating system. Conclusions are drawn concerning the future direction of online updating systems for end-users.

At a growing number of research institutions, CD-ROM databases are becoming increasingly important, high-profile tools for conducting literature searches and represent the trend to streamline end-user search technologies. The high-usage levels of these products at Texas A&M University's Evans Library is evidence of their popularity with a substantial segment of library patrons.

CD-ROM products offer patrons the opportunity to obtain information through inexpensive, user-friendly formats, but CD-ROM databases are not as current as their online counterparts. In CD-ROM database updating, manufacturing and marketing procedures such as file mastering, shipping, and processing cause delays that may be significant. Enhancement of these databases with online services can provide searchers with access to more current data. Online services and CD-ROM products can be coordinated to create a search environment in which patrons are provided with the most appropriate service. Creating a system where end-users can complement CD-ROM database searches with current citations from online updates may be a practical way of providing patrons with a more complete service option. Current library literature reveals no evidence of studies that examine the use of an online end-user system to enhance a database offered as a CD-ROM product, despite the existence of systems produced by DIALOG, Wilson, and Lotus. These systems allow patrons to switch conveniently from a CD-ROM database to the online counterpart.

Produced by Silver Platter, Agricola on CD-ROM is one of the most heavily used databases in the Reference Division of the Evans Library. This CD-ROM database is

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updated quarterly and patrons who utilize this service are not accessing the latest six to nine months of agricultural literature unless they supplement their CD-ROM searches with alternative options. Patrons can access Agricola online file updates by paying a slight fee ($2.50 or more) to use the After Dark end-user service, available in the evenings and on Saturdays. Patrons can also access Agricola online by scheduling a mediated online search. All patrons, except those graduate students who are entitled to receive one free mediated search each academic year, must pay a fee to cover connect, telecommunications, and citation charges for mediated searches. Because of its popularity, Agricola was an ideal target for a study that examined the use of an online updating system to complement end-user CD-ROM database searches.

AVAILABILITY OF END-USER SERVICES AT THE EVANS LIBRARY

At Texas A&M University, the availability of a variety of low-cost or free end-user services could affect the level of end-user expertise and, consequently, the success of any particular strategy to coordinate the use of complementary online and CD-ROM databases. End-users have access to twenty-eight different laserdisk databases that utilize a variety of search techniques and command structures. Sixteen of these databases are located in the Wiley Laserdisk Service Area of the Reference Division and the remainder are available in other public service areas such as the Documents Division and Microtext Department. During a one-week period in April 1988, surveys collected in the Wiley Area indicated that 727 end-users had spent an average of 31 minutes using laserdisk databases. Agricola on CD-ROM ranked fourth highest in number of users. Approximately 70% of the laserdisk users were undergraduates.

Another popular end-user service is the After Dark Service that enables students, faculty, and staff members to access approximately 150 databases through the BRS/After Dark, Knowledge Index, and STN systems. A generous gift from the Association of Former Students helps support connect costs for After Dark end-user searching by students, resulting in free access to all online databases available through Knowledge Index and substantially reduced charges for BRS/After Dark. Subsidized end-user searching is also available through IHS’s Tech Data Service. During the 1987–88 academic year, 2,384 online end-user searches were performed for a total of 1532.77 online hours. The average cost to the patron for all After Dark end-user searches was $7.79. This figure includes free Knowledge Index searches, but the average cost to the patron for end-user searches that resulted in citation and/or connect charges was still low at $4.68. Fifty-nine percent of end-users were graduate students, 35.5% were undergraduates, and 5.5% were University faculty or staff. These statistics are evidence that a substantial pool of Evans Library patrons do access a wide range of cost-effective end-user services.

OBJECTIVES

The Agricola online updating study was conducted to meet several main objectives. First, the study was used to determine if patrons searching Agricola on CD-ROM would be willing to use an online updating system to obtain more current citations. Second, the study measured the level of satisfaction that these patrons experienced after searching both Agricola on CD-ROM and the online updating system. Finally, an estimation of the cost of such a service to the Library needed to be determined if this type of system were to be made available to all end-users currently searching Agricola on CD-ROM. Several types of "costs" were subsequently evaluated. These included: (1) tangible, quantitative costs such as online search changes, and (2) staff time requirements for coordinating this type of service and providing search assistance.

METHODOLOGY

A random sampling of CD-ROM Agricola users was conducted to select participants for the online updating study. The study was conducted over a 13-week period in 1988. Each week was divided into 50 1-hour slots that were available for ran-
dom selection. A random number table was used to select those slots during which users of Agricola on CD-ROM would be offered an opportunity to update their search by using Agricola online at no charge. The first CD-ROM Agricola user to arrive during each randomized slot was approached about participating in the study. Patrons who chose to participate concluded their search on the CD-ROM database and then contacted the investigator when they were ready to do their online search. Patrons who declined to participate completed a brief form to explain why they were not interested in updating their searches online.

After the search strategy was completed, the participant went online, conducted the search, and selected online prints.

Online Agricola searches were conducted using the DIALOG system and DIALOGLINK communications software. The type ahead feature of DIALOGLINK enables online users to type search statements offline. This feature was utilized for the updating study to allow participants to type and revise their searches at their own pace. Each participant was asked to read an instruction sheet that provided simplified, step-by-step instructions on conducting the search and using DIALOG search commands. A brief sample search was also provided. After reading the instructions, each participant began typing the search strategy previously employed for the CD-ROM search onto the appropriate DIALOGLINK screen. After the search strategy was completed, the participant went online, conducted the search, and selected online prints. All searches were limited to the most recent updates that included the last two months of coverage provided by the most current CD-ROM disk. Participants had a chance to examine the citations retrieved by their search during the printing process. Each session was monitored by one of the investigators.

A questionnaire was used to measure and evaluate the responses of the participants using the online system to update the CD-ROM searches. Participants provided information on their status (undergraduate, graduate, faculty, or other) and their familiarity with computers, databases, and end-user services. Participants were also asked to evaluate the Agricola online updating system in terms of ease of use, time needed to complete the search, problems encountered, and the need for assistance. The number of citations obtained from both the online and CD-ROM searches were recorded, and participants evaluated the relevancy and usefulness of the citations retrieved by the online system. Participants gave the online updating system an overall satisfaction rating and provided data on how frequently they would use the system if it were available on a permanent basis and what fees they would consider paying for the service. Many participants also provided additional comments on the online updating system.

STUDY RESULTS

A total of 87 1-hour randomized slots were monitored for end-users willing to participate in the study. Out of the 45 people who used Agricola on CD-ROM during these time periods, 30 (67%) elected to update their searches using Agricola online. Of the 15 respondents who declined to utilize the online updating system, 8 stated that they did not have enough time to participate, 6 thought that they had already obtained enough information from Agricola on CD-ROM, and one respondent could not find appropriate information by using Agricola and selected another laserdisk database.

Twenty-six (58%) of the 45 CD-ROM users who participated were graduate students, 16 (35%) were undergraduates, and 3 (7%) were university staff or community users. None of the participants was a faculty member. Eighteen (60%) of the 30 users who conducted the online Agricola search were graduate students, 11 (37%) were undergraduates, and 1 (3%) was a university staff or community user. Twenty-seven (90%) of the online updat-
ing participants indicated that they had used a laserdisk or online database during the previous year.

**Search Results and Participant Satisfaction**

The mean number of citations retrieved by the Agricola online updating system was 38, with a median of 1.5. The maximum number of citations retrieved was 395 and 12 (40%) of the searches retrieved no citations. Although 19 (63%) of the online searches retrieved only 2 or fewer citations, 20 (67%) of the participants thought that they had obtained enough citations to enhance their research efforts. When participants were asked, "How would you rate the overall results of online updating of Agricola/CD-ROM?", 25 (83%) gave a rating of "satisfactory" or "very satisfactory." When asked, "If online updating for Agricola/CD-ROM was available on a regular basis, how often would you use it?", 24 (80%) participants answered "often" or "always" (see figure 1). Twenty-six participants (87%) indicated that they would prefer "conducting searches using both Agricola/CD-ROM and the online updating system (with assistance)."

**Search Costs and Fees**

Actual search costs were recorded and cost per search ranged from $0.42 to $98.97. The mean cost of the online searches was $9.50, with a median cost of $1.82. Twenty-six of the searches (87%) cost less than $10 and 17 (57%) cost less than $2 (see figure 2).

Participants were queried about using the Agricola online updating system for a fee, and when asked, "If online updating for Agricola/CD-ROM was available for a modest fee ($2 to $5), how often would you use it?", 22 (73%) participants answered "never," "seldom," or "sometimes" (see figure 3). When the same question was rephrased, "If a fee were charged for online updating how much would you be willing to pay?", 100% of the participants indicated that they would pay $5 or less. The responses to both questions indicate that the majority of patrons are only willing to pay under $5 for online updating.

**OBSERVATIONS AND DISCUSSION**

The information gained from the researchers' observations on their subjects' searching behavior was as enlightening as the quantitative data supplied by the questionnaire. Because the researchers monitored the patrons while they did their DIALOG update searches, they were able to get a firsthand look at their search strategies. The observations made concerning these searches were revealing and led to the unexpected conclusion that the majority of the participants did not understand the basic concepts of searching, such as selection of search terms, use of Boolean operators, truncation, and limiting.

The participants did not understand the basic concepts of searching, such as selection of search terms, use of Boolean operators, truncation, and limiting.

The Evans Library at Texas A&M University first offered end-users access to BRS/After Dark in 1984. Since that time, Knowledge Index and STN have been added. Users are required to read a manual before their appointment and to show the attendant their search terms. After discussing their terms and possible search strategy, the patrons are logged on to the appropriate online system. The attendant is available to answer questions at any time during the session. Both printed and personal assistance are available before and during the online search.

A similar arrangement exists for the sixteen laserdisk databases available in the Reference Division. Instructional handouts prepared by reference librarians or database producers are available at each workstation. Many of the laserdisk systems, such as the Silver Platter databases, have an extensive series of help screens. Most importantly, the area is staffed from 8 a.m. until closing (10 p.m. on weekdays and Sundays) by student assistants and classified staff members. The staff circu-
FIGURE 1
How Often Would You Use Online Updating?

FIGURE 2
Cost of Searches
**FIGURE 3**
How Often Would You Update for a Small Fee?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>Seldom</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>3</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**FIGURE 4**
"Farm Investment" Search Strategy

```sql
? s (land or farm) and leas?
  23569  LAND
  62832  FARM
  1920  LEAS?
  S1  673  (LAND OR FARM) AND LEAS?

? s stock?
  S2  4635  STOCK?

? s invest? or financ?
  13887  INVEST?
  4499  FINANC?
  S3  18072  INVEST? OR FINANC?

? s s2 and s3
  4635  S2
  18072  S3
  S4  111  S2 and S3

? s risk?
  S5  5023  RISK?

? s s1 or s4 or s5
  673  S1
  111  S4
  5023  S5
  S6  5773  S1 or S4 or S5

? s s6 and ud = 8710:9999
  5773  S6
  65285  UD = 8710: UD = 9999
  S7  395  S6 AND UD = 8710:9999
```
late throughout the area providing detailed one-on-one instruction. Once again, help is readily available at anytime during the search.

Many participants had difficulty with the most basic principle of searching—selection of appropriate search terms. For example, a patron who was looking for articles on HAPLOIDS IN FORESTRY used the term FOREST as a keyword without applying truncation. Upon further questioning, it became apparent that the use of specific tree names would have been valuable. Searchers also neglected to use the scientific name (genus and species) of organisms in addition to the common name.

Few of the patrons used Boolean operators or if they did, most used them incorrectly. Out of the 45 searches, fewer than 10 used truncation. Not a single patron limited the search to specific fields (title, descriptor, etc.). The search strategy illustrated in figure 4 does incorporate the use of truncation and Boolean operators. Unfortunately, these techniques were used incorrectly (see figure 4). Even when the search was restricted to the latest online updates, 395 citations were found.

Despite the availability of onscreen, printed, and personal assistance, many end-users may not be as skillful at searching as librarians would like to believe. Some librarians assume that since the patrons are not asking for help, they do not need any, and that patrons are finding the material they need in the most efficient manner possible. The observations obtained during the course of this study indicate that this assumption is not accurate. The search strategy formulation problems encountered during this study are especially significant when taking into consideration that 90% of the participants indicated on their questionnaires that they had searched a laserdisk or online database within the past year. The majority of the participants (60%) were graduate students with a strong interest in and commitment to their research. Yet, it is obvious that these searchers were not doing their online and/or laserdisk searches in the most effective way possible. These end-users, doing both online and ondisk searches, seemed satisfied that they were able to find something and find it quickly. They were impressed by the speed of the system and the large number of citations. When using both the online and ondisk systems, some of the participants happily printed out hundreds of citations. These observations also indicate that little attention is given to quality of the search results when the end-user can quickly print the citations and is charged little or nothing for the search.

Participants also experienced difficulty when switching between two separate systems such as Silver Platter and DIALOG. Logistically it was inconvenient to move from one search station to another. The necessity of using Silver Platter commands on the CD-ROM database and then adjusting to DIALOG commands for the online updating also provided participants with a major challenge. Most patrons needed a great deal of help. It quickly became apparent that they lacked the theoretical framework to make the transition smoothly. In addition, very few libraries could spare the staff needed to log patrons onto the online database and give them instruction on a second set of commands. This approach would become even more unrealistic if the online updates were provided “on demand” and not by appointment.

In our enthusiasm to embrace CD-ROM technology, librarians have neglected to make patrons aware of its drawbacks.

In our enthusiasm to embrace CD-ROM technology, librarians have neglected to make patrons aware of its drawbacks. Many of the patrons who participated in this research project were surprised to learn that Agricola on CD-ROM was not as current as its online counterpart. This type of response indicates that librarians should alert CD-ROM searchers to the possibility that they are not getting the most current information available. For many graduate students and faculty members, their ability to obtain the latest mate-
rial is critical. These patrons especially should be aware of the lack of currency inherent in CD-ROM databases. One participant wrote "As a graduate student, I am encouraged to be on top of all current work in my field. Especially in state-of-the-art, technical research the updated search is a must!" Libraries must provide patrons access to those recent citations missed by CD-ROM databases by subscribing to the online version. The responses provided by the participants of this study support the premise that online databases can be used to complement their CD-ROM counterparts to provide patrons with comprehensive coverage.

CONCLUSIONS

The majority of participants were eager to update their CD-ROM Agricola search with an online search. They thought that conducting an online search outweighed the time and effort involved. However, in spite of their enthusiasm, patrons were only willing to pay a modest fee ($2 to $5) for the updating service. It is likely that patrons would supplement their CD-ROM searches with online searches if the service were available for a minimal charge. With a majority of searches costing under $5, it may be feasible for libraries to provide online updates to CD-ROM database searches.

Patrons probably would use an online updating system only if it were convenient and easy to learn. Several currently available systems, such as those produced by Wilson and DIALOG, provide a smooth transition between the CD-ROM and online databases. Another advantage is that the same searching commands are used on both types of databases. However, subscribing to a system with automatic logon capability or a single command language is not the whole answer. Patrons still need instruction from library staff. As librarians gain more experience with end-users of both online and ondisk databases, it is becoming apparent that these CD-ROM systems are not as self-service as they have been proclaimed to be. Participants in this study, most of whom had searched a database before, and all of whom had access to onscreen, printed, and personal assistance, were not using the system to its fullest capacity. The quantity of citations, speed, low cost, and hard copy seems to overshadow users' concerns for quality of citations.

Online databases are necessary complements to laserdisk databases in order to provide patrons with thorough and comprehensive information. These hybrid search systems will only be practical if they are convenient for patrons to use, available at little or no cost, and utilize the same search command structure. Products such as the DIALOG or Wilson systems are representative of the first step that the information industry must make to provide online updating for CD-ROM databases. Additionally, efforts to coordinate the use of these resources will be more successful if information professionals and industry members cooperate to assume the responsibility of integrating these services and providing effective instruction.

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2. Ibid.
The Role of the Academic Library in the People's Republic of China

Richard Ellis

This paper examines the role of the university library in China. Three major components of this role are identified. First, the university library is seen as a participant in the educational work of the university. Second, it is seen to be a provider of information that enables researchers in the university to carry out their investigations. Last, the university library has a responsibility to society as a whole.

Between September of 1988 and June of 1989, I was an exchange visitor in the Faculty of Library and Information Science of Wuhan University, People's Republic of China. During the latter half of that period, I carried out a study of the university library system in China. I read most of what was written in the Chinese library journals between 1987 and 1989 about Chinese university libraries, and a great deal of what was published prior to 1987. I spent a week as a guest in the library of Wuhan University, and periods varying from one half day to one full day in the libraries of eighteen other institutions of higher learning, both in Wuhan and in Nanjing. In each of these libraries, I was able to conduct an interview with either the library director or one or more of the associate directors.

One of the focal points of my investigation was the function of the university library in China. I wished to examine its institutional role, both within the confines of the university, and within society as a whole. I reasoned that the way in which the role of Chinese university libraries was perceived might be reflective of the dominant cultural, political, and economic realities of China, and that, as these realities are vastly different from those of North America (where I had lived my life until now), so might the role of university libraries in China be much at variance with the perceived role of university libraries on this continent. In this paper, I will discuss my findings.

THE PLACE OF LIBRARIES IN CHINA

China has four types of libraries: those in schools (including university libraries), public libraries, libraries associated with the Academica Sinica (a scientific research organization that has many branches throughout China), and union libraries (established in factories for the use of the employees and their families). Huang Zongzhong, in his book Tu-shu guan xue dao-lun (An Introduction to Library Science), discusses the overall position of the Chinese library. Huang sees societies as being comprised of a number of systems, among which are those of economics, politics, science, culture, and education. These systems, of which the library system is another, interact, enhancing and limiting each other. Each is discussed briefly below.
The Library and the Economic System

The materialistic concept of history has it that social progress is based on production. As productive ability increases, society advances. When the level of production increases, society develops and with it the library system. At the same time, technological development requires more education on the part of large segments of the population. And because libraries play an important role in education, more will be demanded of them in terms of service. Furthermore, it is obvious that the technological advancement of libraries is dependent upon the productive ability of a society, and upon its economic well-being.

The Library and the Political System

In a socialist society, libraries have a responsibility to educate the populace in socialist and communist thought, and to disseminate the ideas of Karl Marx. Politics is but an expression of economic fact. Therefore, if economics influences libraries, politics must as well, since politics is a manifestation of economics.

The Library and Science, Culture, and Education

Scientific and cultural advance is cumulative. Libraries retain and transmit records of this cumulative advance. It is estimated that 30 to 50 percent of time spent in scientific research is spent surveying what has already been done. This information is retained in libraries. As education comes to be seen as an ongoing, lifelong process, libraries become society's educational and study centers.

In 1956, the national Ministry of Culture in China called a meeting concerning libraries. An official statement emanating from this meeting asserted that libraries had two main functions: the first was to serve the masses, and the second was to serve scientific research. The latter was largely ignored between 1958 and 1962 and again during the Great Proletarian Cultural Revolution (1966–1976), but was reasserted following the third plenum of the 11th congress of the Community Party of China in 1978. It was at this meeting that scientific, technological, and economic growth were pronounced to be China's priorities, and, since 1978, the role of the library has been seen as complementary to these priorities.

In 1987, three government departments (State Commission for Education, Ministry of Culture, and the Academica Sinica) combined to issue an official statement concerning libraries. The statement declares that libraries are representative of the educational, scientific, and cultural development of mankind and are an integral component of that development. They collect, arrange, and transmit information. In the interest of economic and scientific development, they carry out education, universalize cultural knowledge, and provide spiritual nourishment. At the present time, libraries serve the four modernizations (of agriculture, industry, science and technology, and the military). They serve the masses and socialism. They assist in the development of the new socialist person, that person being one who possesses ideals, morals, culture, and discipline. In order that economic, educational, and cultural work may be properly executed, the library must be more conscious of its educational and informational responsibilities.

Benefit to society is the primary guiding principle for libraries.

In his commentary on the above statement, one of the drafters of the document, Bao Zhenxi, states that libraries must reform if they are to support the four modernizations. The thought of Deng Xiaoping concerning reform should be studied by libraries for its directing value. Passive service should be replaced by active service. The work of libraries should be more closely allied to economic development, scientific research, and socialist education. Benefit to society is the primary guiding principle for libraries. Bao says that social benefit is precisely the establishment of the material and spiritual civilization, the furthering of economic development, the spreading of knowledge, the advance-
ment of technology, and the creation of the well-rounded citizen.³

THE FUNCTIONS OF THE UNIVERSITY LIBRARY

In the post-1978 era, there have been two major documents that have defined the functions of the university library in China. The first of these was promulgated in 1981 by the Ministry of Education following the second national meeting concerning university libraries (the first had been held in 1956). This document was titled Zhong-hua ren-min gong he guo gao-deng xue-xiao tu-shu guan gong-zuo tiao-li (People’s Republic of China Regulations Governing the Work of University Libraries). It states that the university library is the center of the university. It is an academic unit that serves teaching and scientific research. It must fully observe the educational policies of the Communist Party, further the development of the individual for the betterment of socialism, develop education, science, and culture, and sacrifice toward the building of the material socialist and spiritual socialist cultures. In addition to disseminating the ideas of Marx, Lenin, and the thought of Mao Zedong, the university library is enjoined to disseminate the fruits of scientific and cultural progress and to carry out educational and informational functions.

The second of the two major documents was announced in 1987 following a third national meeting concerning university libraries. It is called Pu-tong gao-deng xue-xiao tu-shu guan gui-cheng (Regulations Pertaining to University Libraries).⁴ (It should be pointed out that, although this document and that discussed briefly above are ‘Regulations’, neither has the force of law. They are guidelines only and do not pre-scribe.) This second set of regulations also states that the university library is an academic unit that serves teaching and research, and that it must fully observe the educational policies of the Communist Party and government, further individual development for the betterment of socialism, and sacrifice toward the building of the material socialist and spiritual socialist cultures. In addition to disseminating the ideas of Marx, Lenin, and the thought of Mao Zedong, the university library is enjoined to disseminate the fruits of scientific and cultural progress and to carry out educational and informational functions.

The clauses ‘assist in the ideological education and political education of the university of which the library is a part’ and ‘disseminate the policies of the government and Party’ that appear in the 1981 document have been deleted from the 1987 revision. Part of the former has been watered down to read, ‘University libraries must, according to the needs of ideological and political education, teaching, and science . . . acquire materials.’

According to the 1987 document, then, the university library is ‘to carry out educational and informational functions.’ Extensive reading and interviews with directors of university libraries indicate a consensus that these are, in fact, agreed upon to be the functions of the university library. A third function is sometimes mentioned, that is, the university library as a servant of society beyond the walls of the campus. However, considerable discussion as to what the functions mean in practice exists. In fact, a conference was held in Wuhan in late 1988 on the educational function of the university library, and another in Shanghai in late 1989 on the information function. I devote most of the remainder of this paper to a discussion of these functions.

THE EDUCATIONAL FUNCTION OF UNIVERSITY LIBRARIES

Zhang Xuzhi states that the third national meeting concerning university libraries in China announced four ways in which those libraries can carry out the educational function: (1) assist in the educa-
tion of students in their respective areas of specialization, (2) broaden the scope of student knowledge, (3) increase the ability of patrons to use the library, and (4) engage in ideological and political education. Several writers more or less echo this. Zhao Dianqin, for example, states that the educational function includes three elements: thought and moral education, bibliographic education, and professional education. Song and Zhang believe the university library fulfills its educational function through provision of ideological education, general education, and education specific to students' curricular needs. Jilin University addresses the educational function by carrying out political and ideological education, professional education, and instruction in library use.

Using the four ways of addressing the educational function enunciated above by Zhang Xuzhi as my frame of reference, I will, in the following paragraphs, examine how the university library implements them.

**Assist Student Education in Specialized Areas**

I found little written on how the university library renders assistance of this type. The Jilin University Library claims that it does so simply by acquiring material and making it available to patrons either in library reading rooms or through circulation. There is a move afoot in China to open university libraries for a greater number of hours weekly. Seventy hours per week is now seen as a desirable minimum. The Jilin University Library thinks the very fact that it is open seventy hours weekly constitutes educational service.

Using the four ways of addressing the educational function enunciated above by Zhang Xuzhi as my frame of reference, I will, in the following paragraphs, examine how the university library implements them.

**Broaden the Scope of Student Knowledge**

Materials complementary to student classroom study must be made available by the university library. In addition to material of that sort, write Song and Zhang, the library is responsible for introducing students to knowledge in areas outside their own particular spheres of academic specialization. As new fields of knowledge are developed, and are found to overlap traditional fields, it becomes necessary for students to consult materials in these new fields. Presumably the university library can fulfill this obligation simply by acquiring and making available appropriate books, journals, and so on.

**Other than in preparation for a graduating thesis required in their fourth year of study, undergraduate students rarely carry out independent library research.**

It was of great interest to me that reference service as we in North America think of it was not mentioned as a vehicle for accomplishing the university library's educational goals. In fact, there does not seem to be a history in Chinese university libraries of providing in-depth reference assistance to student patrons. I spoke about this with a department head of the Wuhan University Library. He told me that questions raised by patrons of his library in the course of day-to-day use of the facility are usually fielded by staff of the circulation or reading room departments rather than by staff of the reference department (can-kao zi-xun zu). (A brief description of the setup of Chinese academic libraries would probably be helpful here. The public areas of libraries are invariably divided into a number of circulation rooms and reading rooms. For example, the Wuhan University Library has a total of six reading rooms that contain monographic material, five that contain journals, and five distinct circulation rooms. Books housed in the reading rooms may be used only in the library. Each of these rooms has its own staff, who belong to the reading room, periodicals, or circulation departments. The reference department does not staff these public areas.) Reference department staff are responsible only for assembling information about questions large in scope, and generally only for professors. Undergraduate,
and even graduate, students are not perceived as requiring the type of assistance that is rendered by the reference department. This reflects the reality of university education in China. Undergraduate students are generally required by their instructors to use the library only to examine texts specified by the instructors. Other than in preparation for a graduating thesis required in their fourth year of study, undergraduate students rarely carry out independent library research.

**Increase the Ability of Patrons to Use the Library**

A number of university libraries offer some sort of instruction in library use to patrons. The South-Central University of Finance, for example, has prepared a library-use booklet that is given to freshman students. It has also prepared a video tape introducing the library. The library of Nanjing University gives a mandatory two-hour lecture to first-year students on library use.

It is about a much more rigorous form of library instruction, however, a formal course offered to students on document searching and usage, that I would like to write in some detail. In 1984, the State Education Commission promulgated the Guan-yu zai gao-deng xue-xiao kai-she "Wen-xian jian-suo yu li-yong" ke de yi-jian (Opinion Concerning Universities Offering a Course in Document Retrieval and Usage). In this directive, the Commission enjoined universities to offer such a course. If conditions permitted, the course was to be mandatory. If conditions were not suitable, the course could be optional or replaced by seminars. The course should be from twenty to forty hours in length and should include: basic knowledge of information and searching for information; content, structure, and usage of basic search tools and reference books; reading methodology; information arrangement and synthesis; information analysis; and report writing. Theoretical and practical (hands-on) components of the course should be in a ratio of one to one. It should be coordinated by the university library, but instructors could be drawn from the ranks of the younger professorate, graduating students, library staff, staff of departmental libraries, or staff of the information office of the university.

The 1987 Regulations Pertaining to University Libraries specifies that academic libraries should educate students in location of and usage of information resources. The pertinent clause reads as follows: "Libraries of institutions of higher education should mobilize their forces and, utilizing a variety of methods, educate readers in location of and usage of information resources. The institutions should include courses in location of information resources and their use in their course offerings."

I found that many, although not all, of the university libraries I visited are involved in delivering a course of a nature similar to that described in the 1984 directive discussed above. The Wuhan University Library has a staff member whose primary responsibility is organizing courses in document searching and use. The courses are offered by various academic departments within the university and are taught by library staff or by staff of the departmental reading rooms (these are administered by the departments, not by the university library). The courses are tailored to the departments in which they are offered. For example, the course given in the economics department emphasizes the literature and bibliographic tools of economics. The courses are optional, are for credit, and are of one semester duration. The library of the China University of Geology began to offer such courses in 1984. Of those students eligible to take the course, about one-half do so. The library of Nanjing Aeronautical College has assigned four people to teach courses in document searching and use. All graduate students take the course and about 70 percent of undergraduates. The courses have twenty hours of classroom lectures, and additional time for practice during which students work on a research topic of their own choosing.

Typically, courses such as the above are given to students in their third or fourth year of study. In the final semester of their fourth year of undergraduate studies, stu-
Students in universities in China are required to write a thesis. The course is seen as enabling them to carry out library research and prepare the thesis. The course is a popular one, I was told by many library directors, and, though usually optional, is selected by a large percentage of students.

Engage in Ideological and Political Education

It is my impression that universities in North America are little concerned with the overall development of student character. They are, I believe, concerned almost exclusively with provision of knowledge. The university in China is, in theory, required to do much more than merely provide knowledge. It is to be concerned with the total personality and thought of the student. That the student be trained to assume a proper social role is a responsibility of the university. The Communist party determines the proper social role.

The university in China is to be concerned with the total personality and thought of the student.

I think it would be of value to quote here from a directive announced in late 1987 by the Communist Party Central Committee.

Future undergraduate and graduate students in institutions of higher education should have a firm and correct political orientation, should love the nation and socialism, should support the leadership of the Communist Party, and should study the ideas of Karl Marx. Such students should ardently reform and be broad-minded, should have the spirit to struggle against adversity, should diligently serve the masses, and should devote themselves to the establishment of Chinese-style socialist modernization. These students should conscientiously observe discipline and should have good moral character. They should study diligently and master modern scientific and cultural knowledge. We wish to select from these students a group to cultivate in communist consciousness. The degree to which universities educate people who have the qualities previously mentioned, who have both ability and political integrity, and who are able to meet the requirements of the establishment of socialism, is the most indicative sign of the efficacy of those universities. It is this direction that educational reform must take. 12

In an address to librarians shortly after the announcement of this directive, Peng Peiyun, a high official in the State Commission for Education, asserted that the above quote formed the basis for university activity. 13 He reiterated that universities were to educate morally, as well as transfer knowledge, and were to strengthen their efforts at ideological and political work. University libraries, said Peng, had an important role in educating people to have both ability and political integrity. He exhorted academic librarians to familiarize themselves with the contents of the directive and to consider it their guiding principle.

Since this fourth method of fulfilling the educational function of the university library is so foreign to librarians in North America, I will examine it in much more detail than I did the other three methods.

The 1987 document concerning university libraries states that these libraries are to assist in the building of material socialist and spiritual socialist cultures, to develop citizens who will contribute to socialism, to disseminate the ideas of Marx and Lenin and the thought of Mao Zedong, and to acquire materials according to the needs of (among other things) ideological and political education. My research indicates that university librarians perceive student reading as the vehicle by which university libraries address these goals. In fact, academic librarians seem to be quite concerned about the nature of student reading. I came across reports of six different surveys and analyses of student reading behavior in the year 1988 alone. These surveys, generally speaking, examine student borrowing records to determine what kind of books students read and question students regarding types of books they prefer to read and authors whose books they have read.

Here is a composite picture of these surveys and the manner in which their results are assessed. Articles that discuss these surveys generally express dismay of vary-
ing degrees at student reading habits. A survey conducted at a university of natural science and engineering found that, in 1983, 35.6 percent of books borrowed were in the humanities and social sciences rather than in the sciences. This percentage increased gradually year by year until it stood at 46.1 percent in 1987. This finding indicated to those reporting on the survey that science students were spending an inordinate amount of time reading nonscientific material, material irrelevant to their courses of study. A second component of the same survey examined the humanities and social science reading habits of 407 students in seven science departments. The survey discovered that, of ten categories of books borrowed by these 407 students, by far the three most popular categories were: literature, philosophy (including fine arts, psychology, and logic), and history and biography. The works of Marx, Lenin, and Mao ranked a distant tenth. Of the philosophy books read, the vast majority were translations of the writings of western thinkers such as selected works of Freud and Karl Popper's *Conjectures and Refutations*. The surveyors found this disturbing. They conjecture that students read western books of philosophy rather than the marxist and communist classics because courses in communist theory offered by universities were of poor quality and did not generate student curiosity, whereas western philosophical books were fashionable among students and therefore attracted interest.

A third component of the survey examined time spent by students of three science departments reading novels as a percentage of their total extra-curricular reading time. Thirty-four percent of the students spent more than one-third of their extracurricular reading time reading novels. For 15 percent of the students, the time was greater than 60 percent. The most popular novels were the Chinese classics, such as *The Dream of the Red Chamber*, and western classics in translation, such as *And Quiet Flows the Don* and *The Red and the Black*. However, some students (and the surveyors stressed the significance of this) immersed themselves in love stories, martial arts stories, or supernatural tales. This type of literature has a corrupting effect, the surveyors felt. The students also, in the eyes of the surveyors, read an inordinate amount of biography. The reason for this, the authors conjecture, is that students want to learn how famous people have achieved success in life. This is disturbing, as communist theory does not concern itself with individual success.

The authors of the survey report concluded that university libraries should be more active in guiding the reading of students and suggested the formation of campus-wide committees to organize activities in this area. The committees would be composed of representatives of the library, the university teaching office, propaganda department, students' affairs office, and specialists in the social sciences and the humanities.

Another survey looked at the reading habits of students at South China Teachers' University. The librarians who conducted this survey distributed questionnaires to students asking what books they felt had influenced them most during their university years, and what authors they most admired. Of the 649 students who completed the questionnaire, 277 listed western books as among those which had had an influence upon them. In fact, of all the books listed (both Chinese and foreign), the first, third, fifth, and fourteenth most named were from the West. Works of Marx, Lenin, and Mao were seldom mentioned. Of admired authors named by at least three students, thirty were western. The students listed a total of 1,208 names (some of which were, of course, listed by more than one respondent). Of these 1,208, 372 were western and 188 those of writers from Taiwan or Hong Kong. Some of the more admired authors included Dale Carnegie (No.6), Balzac (No.7), Shakespeare (No.8), Tolstoy (No.10), Mark Twain (No.14), and Hugo and Freud (tied at No.15).

A second component of the survey examined 6,200 books borrowed by patrons on April 3, 1988. Of these, 1,769 were novels (560 of them being translations of western novels), and 341 were philosophy (37 of these being by western thinkers).
Reporting on their survey, the authors concluded that students were very interested in, and influenced by, western culture. They postulate three reasons for this. First, since China opened its doors in 1978, the academic and publishing worlds had imported and translated many books. Second, China had been closed to foreign influence for many years and, consequently, things foreign had acquired an aura of mystery. Now that China had opened its doors, people had the desire to investigate these mysteries. Third, university students were inquisitive and eager to pursue knowledge.

Influence of foreign cultures could be both good and bad, argued the authors. On the one hand, study of western culture enabled one to better one's 'four haves' (ideals, morals, learning, discipline). On the other hand, western attitudes to such things as sex were much more liberal than were Chinese attitudes. Books from the west with sexual or erotic content were liable disproportionately to attract student attention. The authors claim that depictions of the naked human figure in western books were often found by librarians to be torn from the books, as were discussions or descriptions of sex. Western ideas of democracy and freedom could, at a certain level, provoke an undesirable reaction in students. Unfortunately, criticism of books only made them sought after all the more.

The authors recommended that university libraries should adopt several measures. They should purchase fewer foreign books (including those from Hong Kong or Taiwan) that were of questionable value. They should evaluate western books for students and direct their selection of reading material. They could hold seminars dealing with books that have controversial content. They could hold seminars or mount exhibits concerning western topics of interest, such as philosophy, psychology, public relations, and ethics. The library, in conjunction with the Party office of the university and other university bodies, could intensify its ideological work. Study of Marx, Lenin, and Mao should be increased, and examination of western books should be incorporated into ideological education. Yet another survey carried out at Guangxi Agricultural University revealed that, between 1982 and 1987 inclusive, 48.4 percent of borrowed books were classified in the literature classification schedule. Of these, most were novels. Books about agriculture numbered only 13 percent. Relatively few students read the communist classics. Less than one-half of one percent of borrowed books were of this category. A fourth survey, at Wuhan University, asked 654 students what books had influenced them the most. Ninety-five percent of books named were in areas other than the areas in which the respondents were studying and the types of books named most frequently were novels, philosophy, and biography.

Authors of both studies concluded that student interest in their own disciplines was declining. The author of the first study speculated that students read novels merely to pass the time and for stimulation, and that these were poor reasons. He concluded that students lacked restraint, that they lacked faith in politics, and that they lacked interest in their courses of study. The authors of the second of these studies were, on the contrary, inclined to be satisfied with student reading. They cautioned against attempting to prevent students from reading western books or those from Taiwan or Hong Kong. Censorship was not an answer, they felt. It would only create an adverse student reaction. As well, they argued, many books criticized in the 1950s, 1960s, and 1970s had been re-evaluated and declared to be acceptable and even truthful in the 1980s. Authors of the report on the Wuhan survey recommended increasing the variety of books available to students in the university library and guiding them in an appropriate direction. Purchase of martial arts or so-called 'yellow' books (that is, those with sexual content) should be restricted. Guidance of students could be undertaken by preparation of bibliographies on topics of interest to students, or of critiques of popular books, authors, or representative works on various subjects. Seminars could be held on topics of student interest and a notice board could be
constructed for announcements of new books and publishing activities, introductions to authors, and notices of reading activities.

In the libraries visited, I often saw written introductions to, or evaluations of, new library acquisitions. These were usually mounted on bulletin boards in areas of the libraries adjacent to card catalogs, at the entrances to the libraries, or in heavily-travelled hallways. They were usually written by library staff, although sometimes by students or professors. I occasionally saw billboards on which were mounted newspaper clippings about political events in China. Presumably the intention was to raise the political consciousness of library patrons.

The library watches over the thought and attitude of its own staff.

It was of great interest to me that Chinese librarians perceive their own attitude to their work and to their clientele as being a potentially benign influence on the overall development of student character. As the director of the library of the Wuhan College of Physical Education told me, the educational function of the university library addresses both the intellectual knowledge students require and their moral and ideological development. The library watches over the thought and attitude of its own staff. Staff, in the manner in which they serve the clientele of the library, educate by example. This sentiment is reiterated by Li Jilin. He claims that library staff, by their attitude to their jobs, educate students. Library staff, admonishes Li, must be both knowledgeable and red.

How can libraries ensure that their employees have the correct attitudes? Some university libraries have a written code of behavior to which employees are supposed to adhere. The code of Huanggang College of Education, for example, asks that employees: neither arrive for work late nor leave early, neither read books nor newspapers on the job, provide quick service to library users, treat patrons with courtesy and humility, and use polite language when talking with patrons, the polite language to include such phraseology as ‘please,’ ‘thank you,’ ‘I’m sorry,’ ‘comrade,’ and ‘please come again.’

Sun Xuanyn maintains that academic libraries must educate their own employees to undertake service to clientele with enthusiasm, to be mannerly to patrons, and to create an atmosphere in which study can take place. Employees’ knowledge of the thought of Marx, Lenin, and Mao, and of library work, should be increased. He feels all employees should wear a standard form of dress and be supplied with a badge indicating who they are. Of these I saw no evidence in any of the libraries I visited. At Jianghan University in Wuhan, the library organized a course of study for library department heads. They perused pertinent works of Mao to rectify their thinking and improve their job performance. They also studied the relevant statements of current Party leaders. The reaction of the department heads was reportedly, “This course increased our knowledge of the importance of lower level staff in the library, increased our sense of duty, and enabled us to perceive our responsibility to our work.” At Jishou University, library employees who are members of the Communist Party are inculcated with the Party philosophy and with the library philosophy of service to users. Presumably this would be done at weekly political meetings in which employees of most work units in China are encouraged, if not required, to participate.

TH E INFORMATIONAL FUNCTION OF UNIVERSITY LIBRARIES

Since the emergence of information science as a discipline in China, it has been seen as distinct from, and more prestigious than, library science. Government departments at various levels established information branches (qing-bao suo) and universities created information offices (qing-bao shi) that were administratively and physically independent of their libraries. In the last few years, however, it
has come to be seen that information science and library science do share common features, and the tendency within universities is now to incorporate their information offices into their libraries. According to Peng Peiyun, more than one-half the universities in China had established information centers by 1987 (according to the latest official statistic now available, China had 1,053 academic libraries in 1987) and, of these, most were in the libraries of these universities.22

Universities in China are perceived, as are universities in North America, to be centers for both teaching and research. Of the dual functions of the university library, that of educator is seen as serving the former, while that of information provider is seen as serving the latter. Wang Aiwu defines the informational function of the academic library to be "... utilization of documents to effect large scale, speedy, and systematic transmittal of scientific and technical information."23 With the explosive development of science and technology, writes Wang, has come a corresponding explosion of documents. As higher education becomes more closely related to production and research and strengthens its ties to society as a whole, university education and research alter dramatically. A demand for information is created which challenges academic libraries to become disseminators of scientific information.

From my reading and visits to libraries, the following are methods by which academic librarians perceive that the informational function of the university library can be addressed:

1. Current material must be obtained. This can be done by the traditional purchase of books and journals. As well, larger academic libraries in China often operate very active exchange programs with other universities and research organizations both in China and abroad. These exchange programs generally involve direct transfer of free copies of documents or other publications from one institution to another without going through a formal order process. Jilin University, for example, claims to have acquired 28,000 books via exchange with foreign sources between 1982 and 1987.24 By 1988, the library had active exchange agreements with 102 institutions in seventeen countries. Academic libraries in China are particularly eager to initiate exchange agreements with institutions overseas. During my visits to libraries, I was asked on at least two occasions about the possibility of concluding some sort of agreement. Material obtained via exchange is often shelved separately from that obtained via the conventional order process.

2. Information can be made accessible via preparation of indexes, abstracts, and translations. There is no tradition in China of publication of bibliographic tools by commercial organizations. Information offices of a number of central government departments publish a variety of indexes to scientific literature and many university libraries subscribe to English-language indexes and abstracts such as Engineering Index, Chemical Abstracts, and Biological Abstracts. However, there is a dearth of bibliographic tools in the social sciences and humanities, and it is common for university libraries to take upon themselves the task of index or abstract preparation. This task is seen to address the library’s informational function.

To cite two examples, the library of Jilin University prepares lists of imported science books that it distributes to other libraries.25 Lanzhou University library has published a total of twenty special indexes and bibliographies between 1978 and 1986 including such titles as Bibliography of Japanese Journals in Gansu Province and The Study of Law.26

3. Chinese language translations of foreign language articles can be prepared. China, in its drive to modernize, is hampered by a lack of Chinese language material and relies heavily on information from western countries such as the United States, France, Great Britain, Germany, and countries of Asia such as the Soviet Union and Japan. Relatively few Chinese can read English or other foreign languages; so translation service is essential. Academic libraries usually employ graduates of foreign language departments
rather than graduates of library schools to undertake translation work. The library of Wuhan College of Physical Education has an information department staffed by three individuals whose responsibility it is to translate items from German, English, and Russian into Chinese. The translations are published in a journal. The information department of Wuhan College of Industry employs two English and Russian specialists who translate material for campus personnel.

4. Literature reviews, syntheses, evaluations, and bibliographies of current acquisitions can be written. State-of-the-art reports on certain topics in science and technology are of value to researchers in the academic community, while subject bibliographies can enable university researchers to keep abreast of new developments in their fields.

5. Books and journals can be published. The Beijing University of Agricultural Engineering has, since 1982, published ten books about mechanization in agriculture. Titles include Agricultural Technology and Economics Information and The Development of Agricultural Machinry in China. The information department of Wuhan College of Industry prints a monthly newsletter called Libraries and Information. The Nanjing College of Agriculture is in the process of setting up the Nanjing Agricultural Information Center which will, when on its feet, publish a quarterly journal on agricultural education.

6. In-depth responses to requests for detailed information from professors, and sometimes from the off-campus community can be provided. For example, the library of Wuhan Water Transport Engineering College prepares subject-specific bibliographies on demand for professors. The bibliographies are sent to the professors, who indicate which documents they wish to see and then return the bibliographies to the library which will attempt to obtain the desired documents. (Literature searches are still a manual procedure in almost all university libraries in China. China has no online databases of its own, and few organizations are equipped or authorized to access foreign database vendors such as DIALOG or the European Space Agency.)

THE UNIVERSITY LIBRARY AS A SERVANT OF SOCIETY

There are good arguments offered to substantiate the view that the university library has a third function, that of provision of service to society at large. Yang Xiaohua thinks that provision of such service is a pressing need. He argues that Chinese commerce has expanded dramatically since 1978 and requires current scientific and technical information to permit increased production. Results of scientific and technical research are available in academic libraries more so than in public libraries. Additionally, Yang asserts, social change has created a need for individuals in the workforce to undertake additional study in their leisure hours, and public libraries alone cannot meet the demand for study material.

According to 1984 statistics, public libraries average only .25 books per person while university libraries average 130 books per student.

Further, Zhao Zhiwei states that only 570,000 of China's 1986 population of one billion had access to a public library. Access to public libraries in China is not a universal right as it is in North America. Obtaining a card to use a public library is not a simple matter. In Wuhan, for example, although the metropolitan population is 4,000,000, the city library has issued only 30,000 usage cards. It is thought that that library does not have the resources, facility, or personnel to serve a greater number of people.) According to 1984 statistics, public libraries average only .25 books per person while university libraries average 130 books per student. University libraries are, therefore, superior to public libraries in terms of resources and in terms of staff quality and equipment quality as well. Thus, it can be ar-
gued, university libraries should open to the public.

Zhao Zhiwei thinks that, in a socialist state, university libraries have a public obligation. Xia Xuming believes that, if university libraries in capitalist countries like the United States can offer public service, those in a socialist country should be even more willing to do so. Xia further argues that opening the university library to society as a whole will encourage resource sharing. It might appear to be an unequal exchange, admits Xia, but, since society will benefit from access to the university library and, as the university library is a part of society, then the university library will, ipso facto, also benefit.

Yang Xiaohua and Muo Kaixin offer similar versions of yet another argument for service to the public by university libraries. They claim that the resources of university libraries are underutilized, a theme in a number of articles. According to Yang, there are over two billion books in academic libraries in China, whereas average annual circulation is only 600 million. Opening the university library to more users would have the happy effect of increasing use of library materials.

Several articles suggest ways in which the academic library can open its doors to the public. Yang lists five possible methods: issue borrower cards to outsiders, offer information service to the public, hold seminars on topics of public interest, offer courses in library science, and offer photocopying, microfilming, and tape copying service to the public. Yang would not have academic libraries willy-nilly distribute library cards to everyone. Rather, he says, their distribution should be limited to those persons who have a demonstrable need to use the library. He mentions a hydroelectric college library that has granted borrowing privileges to people who live or work in the neighborhood of the college and are involved with hydroelectric power. He also mentions provincial associations that have issued cards to professors enabling them to use (though not to borrow from) any academic library in their province of issue. Yang would like to see issuance of such cards extended to high-ranking engineers and doctors and to technical personnel of mid-rank and above.

Zhang Weiqiang is of the opinion that academic libraries can provide user cards to off-campus enterprises and individuals engaged in scientific research, production, education, and management. They can set up public information search units within the library structure as was done at the Beijing University Library. They can offer additional training to those people already employed in libraries. This is already done at Anhui University. The library of that institution offers a three-year course leading to a diploma in librarianship. To these ways in which academic libraries can offer public service, Muo adds an additional two: set up special reading rooms with special material for outside patrons, and present unwanted books to public libraries.

At the present time, China has an economic campaign to develop business enterprise in small urban centers and in the countryside. University libraries, asserts Wang Licheng, should support this campaign via information supply. University libraries can survey local campaign activity, select a few enterprises to which they can supply information based on library holdings, and prepare bibliographies of their pertinent holdings for distribution to the enterprises. Personnel employed by these enterprises could be instructed by the library in information location, and the enterprises could be granted institutional borrower cards. Wang cautions, however, that service to outside enterprise is secondary to service to the university community. Perhaps service to the former could be limited to slack periods in the university year, such as student winter and summer vacations.

In my talks with academic library directors, I found it generally accepted that the university library does have an obligation to offer service to all society. However, by North American standards, the extent to which such service is actually offered is limited. As of April 1989, the library of the South-Central University of Finance had issued some 300 borrowers' cards to correspondence students, students of the national television university, and local
businesses such as banks. Nanjing Aeronautical College permits personnel from research institutes and persons involved in factory management to use the library reading rooms and borrow books. The library of the Nanjing College of the Arts opens its doors to noncollege specialists in art every Saturday morning.

Two of the directors stated that, since their universities were located somewhat distant from potential off-campus users, there was little call to serve that clientele. Another said that other university libraries were better able than his to do so. Two more were of the opinion that their libraries were inadequately equipped to serve the off-campus community. One of the directors told me that, although universalizing service was seen as a 'good' by university libraries, it was seldom carried out. He said a major reason for this was the financial situation of academic libraries. They had a great deal of difficulty satisfying university needs, let alone those of the non-university community.

CONCLUSION

Academic libraries in North America and their Chinese counterparts have similar objectives. Both attempt to serve the teaching and research activities of their universities, although these activities are not perceived to be identical. Both would agree that they have a responsibility to society beyond the university walls, though this perceived responsibility is put into practice more often in North America than it is in China. The fascinating difference is the perception or nonperception of the university library as a vehicle for developing the 'whole' person. In North America, the university library is satisfied if it can provide its patrons with knowledge. We pay at least lip service to the adage that the university teaches people to think. In China, the university library's responsibility extends beyond this to a concern for the ethical development and the very thought processes of its clientele. There is concern not only that the student be able to think, but also with what he or she thinks. This difference, of course, reflects a very different social, political, and even cultural ethic at work. In a society that values freedoms of the individual, it is quite easy to point an accusing, or even derisive, finger at countries where governments attempt blatant direction of cumulative thought and to whisper 'brainwashing.' However, since no scale exists to judge social, political, or cultural values objectively, the best that can be done is an attempt should be made to understand and accept.

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Selection of the University Librarian

Ruth J. Person and George Charles Newman

Based on research funded by the Council on Library Resources, the authors provide useful observations, conclusions, and common themes for a successful university librarian search. The authors conducted extensive interviews involving key participants in the search for a library director at five large universities. Common characteristics of successful searches included relative openness with respect to the process, a clear understanding of the process with respect to affirmative action guidelines, a commitment to the library by academic officers, and interest from the three major constituent groups—librarians, faculty, and administrators. The critical role of outsiders in searches, as well as the necessity for an "assertive" search, are explored.

In writing about academic careers, Kathryn Moore notes that administrative vacancies in higher education are often filled by a "prolonged, expensive, often frantic search," and that higher education does not tend to groom its future leaders, particularly within individual institutions, the way business organizations do. This lack of grooming forces many institutions to look outside themselves for likely candidates for administrative posts, which often requires extensive searches. If the number of advertisements in the Chronicle of Higher Education is any indication, literally hundreds of these searches are conducted each year to fill positions of administrative responsibility in higher education. Because these searches often involve a dozen or more individuals on any one campus at any one time, the amount of campus time devoted each year to the selection process is considerable.

The time involvement in the search process is compounded by the opportunity for errors. Often, advertisements in academic journals carry the information "search reopened," suggesting that some difficulty has arisen with the original search process. Yet in the late 1990s, a probable "steady state" era for higher education, colleges and universities have far less tolerance for mistakes in the employment of administrators than ever before, while requiring greater competence from those dealing with the increasing complexities of administration.

The importance of the selection process in higher education administration has been increasingly emphasized in the past several years, as a result of the growing awareness of the need for more rigorous selection of academic administrators. Higher education literature of the past five years reflects a marked increase in reports, research, and discussions relating to the search process. A series of dialogues and articles in the AAHE Bulletin during 1984 articulated the constraints and problems related to the search process in higher ed-
ucation. The American Association for Higher Education has developed a handbook for members of college and university search committees which enhances institutional abilities to conduct fruitful searches. Further, the American Association of State Colleges and Universities has conducted a series of workshops on "Understanding the Administrative Search" for administrators at all levels of higher education.

Within the context of the administrative selection process, the search for a university librarian takes on a particular significance in higher education. The appointment of a new director of libraries is recognized on most campuses as a decision affecting all academic disciplines. Because the university librarian directs a costly operation that is vital to both instruction and research whose constituencies are also competitors in the division of the budgetary pie, the appointment of an individual whose operational area of responsibility affects all areas of the academic enterprise may thus be more complex than that of many deans or directors of academic or other support units.

Some of the possible problems related to administrative searches have recently been identified in the literature. These include lack of appropriate means for identifying candidates, unavailability of mechanisms for accurate evaluation, and the like. Such problems seem to be exacerbated by the complexity of the library director search. For example, unlike search committees for deans and department chairs, in which faculty members from the affected school, college, or department play key roles, seldom does the search for a director of libraries seem to be left to a committee composed of library staff members exclusively. Instead, the committee may represent a variety of campus constituencies.

Besides a presumed interest in the welfare of the library, what do members of such a search committee have most in common? "Lack of experience" in selecting an administrator, particularly for a specialized post, may be one answer to this question. While personnel officers may play vital roles in selecting individuals for lesser posts, and faculty and staff play a role in the selection of their peers, administrative officers in the academic environment are often chosen by relative amateurs to the search process. Rarely does an individual have the opportunity to serve on more than one or two search committees for a library director or other administrator; keeping in mind the typical tenure of a university president, rarely does he or she have occasion to appoint more than one or two library directors.

Not only might the majority of the membership of the search committee lack specific experience, but they may also have little personal knowledge of the organizational complexity of large research libraries. Nor do they have personal acquaintance with a variety of academic library directors of national reputation to whom they can refer for expert advice and nominations. While faculty members chosen to serve on such a committee are usually users of the university library, their view of its operation may be a biased one, related to their own particular research interests (compare, for example, the possible view of the chemist toward library service with that of the historian). Student members of a university search committee may quickly discover the severe limitation of their own knowledge and experience, and, in the end, if their interest can be sustained, may contribute little to the process except their own personal reactions to candidates brought for interviews. If the search committee includes one or more librarians, these individuals may be called upon to educate the committee as a whole and also to obtain and share professional judgment regarding applicants — or, in the opposite extreme, they may be completely ignored or overruled by their committee colleagues.

Thus, the problems related to the selection of a new university library director are many and varied. Assuming that experience has value, even when vicariously acquired, where may a university president or a member of a newly-formed search committee turn to learn of the recent experience of other search committees in peer institutions? The answer to this question, at present, is "almost nowhere." What is
lacking is information on how the search process functions from the institutional viewpoint, whether this process is responding to the changing needs of research libraries and whether the process is successful in providing the kind of leadership needed for academic libraries in the future.

LEARNINGS FROM THE LITERATURE

While the literature of higher education has become increasingly detailed in its reporting of the problems associated with academic searches, library literature contains relatively few current, comprehensive references to this activity, although the selection of a library director is a major administrative decision in universities. The article entitled "University Library Search and Screen Committees" by John F. Harvey and Mary Parr is primarily concerned with filling staff positions. A study by Paul Metz on "Administrative Succession in the Academic Library" examines issues such as the external versus internal candidate and the impact of female candidates for library directorships. The use of committees in the search process is also discussed by William Fisher.

A more recent study by Albert F. Maag provides a new critical perspective on the selection of a library director, albeit from the candidate's point of view. Maag surveyed newly-appointed directors of libraries in four-year colleges and universities and concluded that the selection process is less than a satisfying and constructive one for most candidates. Although one would think that careful planning and thoughtful consideration of the position and an in-depth investigation of final candidates would take place, Maag's study suggests otherwise. This author concludes his research with a series of recommendations, including longer on-campus visits, interviewers who are more informed about academic librarianship, and inclusion of more library staff in the selection process.

Related professional literature focuses upon the role of the library director in the institution or on the characteristics of past and present directors. Such literature, although only indirectly related to the selection process, can help to clarify requisite characteristics for future library directors. It can also help to identify the context into which potential applicants for director positions are placed when they pursue such jobs.

Arthur M. McAnally and Robert M. Downs' study of the "changing role" of the university library director emphasizes that, because of a variety of changes in higher education and in university libraries, persons holding directorships have chosen shorter appointments. Their research infers that the position of university librarian has become ambiguous and untenable for some; it would also suggest the need for a greater definition in the selection process.

In Susan A. Lee's research on the role of the academic library director, the author concludes that the academic library director sees himself or herself in the middle on many issues and that the position of library director has changed in recent years because of the emergence of new responsibilities and institutional expectancies. Thus the library director must carefully maintain a position between the external and internal demands of the post. These conclusions are verified by Metz, who suggests that the typical director in both small and large libraries concentrates a majority of the working day on internal library matters rather than external issues which could have a greater long-range effect on the function and position of the library within the academic community.

The role of the university librarian and the relationship of the director with the university as well as with external agencies could have a great impact in the future in terms of solving the problems related to resources, staffing, and financial constraints now facing the internal maintenance of the library system.

Sandra A. Neville examined the environment of libraries that are members of the Association of Research Libraries (ARL) and characterized these institutions as going through a "mid-life transition." According to Neville, this period of turmoil and ambiguity requires new types of administrative leadership and manage-
ment styles to monitor a smooth transition. This new leadership requires innovation in a period of institutional and financial retrenchment. The importance of managing this innovation to create economic and social change in academic libraries in the future will be a significant variable, according to Miriam A. Drake. She concludes that in order to successfully confront the future, libraries will require committed and enthusiastic leaders capable of dealing with complex problems on several fronts, within as well as outside the library, and implementing innovation where it is deemed appropriate.

The most extensive current information about the academic library environment comes from John N. DePew and Anne Marie Allison's comparison of 1976 and 1981 data relating to the role of the academic library director and the changing power structure in academic libraries. DePew and Allison's data indicate a greater span of control among university library directors in 1981 over 1976, and a widening in the gap between university librarians and the central focus of academic authority (i.e., the president and/or chief academic officer). Further, they report that of all the types of academic libraries, university library directors have the greatest turnover (an increase of 57.9 percent between 1976 and 1981).

[OMS Editor's Note: Although the percentage of increase cited implies significant turnover, in fact, turnover is quite low—e.g., with a universe of 100 directors, a change from 5 to 8 turnovers in a year is not significant. See the SPEC Kit on Search Procedures for University Library Administrators.]

Another area which has been covered in the library literature deals with the characteristics of library directors. Research compiled by W. L. Cohn on ARL directors between 1933 and 1973 offers retrospective insight into the type of university librarian that has historically been selected. According to Cohn, more recent ARL library directors generally entered the profession at a relatively young age but were spending more time in the profession before obtaining a directorship. Between 1933 and 1973 the typical university librarian at ARL libraries tended to be an individual with extensive prior experience, male, in the mid-to-upper 40s, and recruited from a similar institution. The university librarians who left these posts gravitated to teaching positions.

The Cohn article is an attempt to analyze characteristics of ARL-type librarians rather than to discuss or analyze the implications of this historical data on the role of the university librarian. Research by Jerry L. Parsons that compared the characteristics of ARL directors in 1958 with those in 1973 to some degree verified McAnally and Downs' conclusions regarding shorter appointments due to new financial, political, and academic issues that have changed the role of the university librarian. Furthermore, the Parsons study indicated that demographic characteristics for ARL directors for 1958 and 1973 did not vary to any significant degree compared to Cohn's sample. This information suggests that, despite new demands on the role of the university librarian, a different type of librarian did not emerge in this time period.

The genteel, scholarly, even dilettantish directors of the past are yielding to career-minded managers, administrators, and technicians.

DePew and Allison's data suggest that between 1976 and 1981, such individuals as described by Cohn and Parsons were finding the library directorship increasingly complex, risky and difficult. Further, Ronald Dale Karr's comparison of ARL directors between 1966 and 1981 suggests that they had a far greater grounding in library science education in 1981 than in 1966, and that "the genteel, scholarly, even dilettantish directors of the past are yielding to career-minded managers, administrators, and technicians."

QUESTIONS FOR EXAMINATION

Little has been reported regarding the way in which the typical search committee
for a university library director is established. Who actually chooses the membership—the president, the vice-president for academic affairs, the board of trustees? What factors are generally taken into account in choosing individuals to serve on the search committee? Is an attempt made to achieve broad faculty representation? How frequently does an already-existing library committee serve as the search committee, and what is that committee’s role if it does not conduct the search? To what degree do members of the library staff tend to serve on the search committee and how are those individuals chosen?

Do library members of the search committee serve a particular function that differs from other members? Does the possession of faculty status by the library staff affect their representation and role? What is the effect of a faculty and/or library union on the role of the search committee? What is the nature of the charge given to the search committee, including restrictions with regard to candidates’ qualifications (possession of a degree in library science, the doctorate, professional experience, etc.)?

There also appears to be some confusion in the distinction between “searching” and “screening.” The terms are sometimes used interchangeably and sometimes together. Does the search committee select the final candidate or are its members expected to review only possible candidates and make recommendations? Is the typical search committee expected to submit a list of qualified candidates in ranked or unranked order, and what is the minimum number? Is the president or provost the person who makes the final decision, or is the decision reached jointly between the administration, the university library, and search committee? What role does the outgoing director play in the process? To what degree are consultants or other outsiders used? Have affirmative action programs in the past several years had a specific effect on the search process?

In the final analysis, how satisfied are the members of search committees with their accomplishment? Would they conduct their search differently now that they have been through the process once? What advice would they give to another search committee based on their experience? How satisfied were they with the candidates that they reviewed and interviewed? Where enough time has elapsed to evaluate the individual finally appointed, how nearly does he/she appear to be living up to expectations?

STUDYING THE SEARCH PROCESS

In order to address these questions, a study was developed to examine the selection process for university library directors. Because the selection process involves very sensitive issues and personalities and because no appropriate survey instrument exists, research was conducted through a series of site interviews with the participants in the search and selection process at a self-selected group of five medium to large universities. Through this extensive interview process involving the key participants in the selection method—university administrators, faculty, library staff, and students—the study attempted to determine the impact and the focus of the search and selection process in research universities.

A letter of introduction and request for participation was sent to research universities that had selected a new university librarian during the previous two years as well as during the time the study was being conducted. The extensive nature of the interviews limited the study to a small number of universities that would serve as a representative sample of the larger universe of academic research university libraries which have relatively similar requirements for a university librarian.

Five universities agreed to become interview sites, representing one private, one state-related, one member of a statewide university system, and two state universities (one rural and one urban) that are independent of any statewide system. The five sites were distributed geographically throughout the country (West Coast, West, Midwest, South, and Northeast). All were medium to large universities in terms of enrollment, with a diversity of ac-
academic programs ranging from the baccalaureate degree to the doctorate, and a wide range of research concentrations.

The researchers used a model constructed from the literature to develop the study questions and to provide guidance for interviews. As represented in the literature, typically, the search process begins with the appointment of a search committee. The individuals chosen tend to represent varied campus interests. Faculty members from a variety of disciplines, usually of scholarly distinction and known for their personal interest in the library, predominate; one or two students and a representative or two from the library staff usually round out the committee. A brief charge, including an admonition to keep affirmative action in mind, is customarily relayed to the search committee by the president, with instructions to produce a slate of qualified candidates by a given date. A budget, with provisions for campus interviews, may be provided. Job requirements are outlined, advertisements are placed, and the review of applicants who respond is then undertaken. Candidates are invited to campus for interviews, and a decision is made regarding a final choice.

Based on this model, the researchers constructed and tested a questionnaire (letter, questionnaire, and bibliography are available from OMS). One researcher visited each campus for approximately two-days to interview individuals involved in the search process. Depending on the constraints of time, availability, and cooperation, the following individuals were interviewed at each site: (1) university president/chancellor, (2) provost/vice-president of academic affairs, (3) chairperson of the search committee, (4) members of the search committee, (5) chairperson of the library committee, and (6) affirmative action officer.

In addition, the researchers examined written materials related to the search provided by university officials and search committee chairs. This generally included copies of advertisements and position descriptions, mission statements for the university, descriptions of the library and its work, affirmative action records, lists of the candidates and their present locations, names of individuals who participated in the search process, and data about the ranking and categorization of candidates.

The willing participants all became representatives of ultimately successful and satisfactory search processes. In fact, the individuals interviewed for this research study were open about not only the process itself but also about attitudes and administrative data concerning the search. Not only were these institutions willing participants, from the presidential level to the most junior member of a search committee, but several academic officers in particular indicated that discussing the search process after the fact allowed them to reflect both on the outcome of that particular event and about how they might improve future searches.

The study attempted to determine the impact and the focus of the search and selection process in research universities.

COMMON THEMES FOR A SUCCESSFUL SEARCH

The five universities in this study had a number of common characteristics which appeared to contribute to a successful search. These included:

• Relative openness with respect to the process and its various elements,
• A clear understanding of the process with respect to affirmative action guidelines,
• A commitment to the library by academic officers, and
• Interest from the three major constituent groups on most campuses — librarians, faculty, and administrators.

Not all facets of each search process were totally satisfactory, of course, and certainly divisions of opinion about candidates existed. On at least two occasions, the chief executive officer selected a different individual than was ranked first by the search committee or favored by the library staff. In another instance, the search pro-
cess had to be extended significantly when final negotiations with a candidate were unsuccessful. Yet, on an overall basis, the final outcome of the search process—a candidate who had (after several months) become an accepted and contributing member of the university administrative staff—was satisfactory at all five sites.

The Search Process

In general, the major elements of the search process that were outlined earlier in this paper remained relatively comparable among the five universities. A number of factors seem to account for this relative standardization:

• The presence of affirmative action guidelines and practices and an acceptance of these as a means of "regularizing" at least the process elements of a search in order to collect comparable data about candidates and ensure equal treatment of those individuals involved in the search;

• The experience of a substantial number of faculty members on search committees within their own disciplines as well as for administrative positions (such as Dean searches);

• A clear mandate for action and a decision timetable from administrative officers of each university (as opposed to indecision about the initiation of a search or lack of clarity about the potential role of the library in the university);

• The administrative support available for each part of the process.

While the search process itself remained relatively standard in terms of the major elements, differences were more readily apparent in the interpretation of each part of the process. These differences included the size of search committees, the types of individuals and the constituencies they represented on the search committees, and the types of individual desired for the final candidate (particularly in terms of personal characteristics and organizational fit).

Differences in the search process seemed largely unrelated to size of institution, type of institution (private/public), institutional mission, or geography. Rather, the unique characteristics, "self-perception" and culture of each organization were more likely to shape the interpretation of the search process and its outcome. These perceptions related to the nature of the institution and its history, its future mission and goals as defined by present constituents, the level of expressed interest in the university library as a fundamental part of the academic enterprise, the interest in the university librarian as a potential member of an administration team, and concern with the contribution of a newcomer toward making the university a better place for the future.

Nearly all individuals interviewed identified the differences in process as being related to the unique combination of constituencies in each organization. Academic administrators in particular expressed their desire to have found an individual who would serve as a catalyst for change; in each case, however, the change desired was different, reflecting future directions of each university and the past position of the library. These desired changes included enhanced non-traditional services after a long period of traditional service under the same director; incorporation of significant new technologies; attention to the enhancement of the research status of the university; emphasis on outside support; and staff reorganization.

Committees and Their Roles

Search committees are a relatively recent phenomenon in higher education. All of the universities used the committee format as the major means of developing a list of final candidates for the university librarian's position; chief academic officers made the final selection of the successful candidate. Search committees in this study included an average of nine members.

While the composition of these committees varied in terms of academic disciplines and university constituencies represented, the usual array of members
included faculty from a variety of arts and sciences departments as well as professional programs (as well as a balance representing the faculty governance structure), several members of the library staff (usually a support staff member and a professional librarian, one of whom represented the staff association and/or collective bargaining unit, if appropriate), and students (usually a graduate and an undergraduate). In one case, a representative from a “sister” state institution also served as a member. All of the institutions seemed to understand clearly the need to represent these various constituencies that make up a university environment, and the appointing officer (usually the president or academic vice-president) went to great lengths to ensure adequate representation.

Each committee had a chair (generally a faculty member) who had administrative support provided most often by the academic vice-president’s office for correspondence with candidates. In general, the chair was responsible for overall coordination of the process in terms of scheduling meetings, setting and keeping to agendas and decision timetables, and managing the movement of information in candidate files; in general, the chair also arranged the scheduling of final candidate appearances on campus. Committee members were expected to participate fully in the development of a position description and advertising information, reviewing of candidate files, selection of finalists, and visitation with final candidates on campus.

In some personnel selection processes, particularly in the civil service sector, personnel staff members often conduct preliminary screening of applicant files to determine minimal compliance with qualification statements. While clerical and support personnel often assisted with the organization of candidate files, screening was clearly the purview of the search committees in this study. This activity required extensive time commitments on the part of members, since the average number of applicants for the five universities was 53, with the range being from 20 to 65. Committee members were expected to have evaluative statements or ratings on each candidate available for committee meetings.

In higher education organizations, as well as in many other environments, committee assignments are sometimes viewed as burdensome and unproductive uses of time, and are thus taken on reluctantly. The committee members interviewed for this study, however, largely viewed the assignment of selecting a new university librarian as an opportunity to provide a valuable service to the university. Moreover, they believed the opportunity to share in academic decision making to be genuine, and not merely an exercise in participative futility.

Academic administrators in particular expressed their desire to have found an individual who would serve as a catalyst for change.

While it might seem that academic officers have preconceived ideas about the final outcome of the search process, such problems did not appear at these five sites. One contributing factor may have been that there were almost no viable internal candidates for the position. The perception of the university librarian’s vacant position as a “blank slate” upon which to write as well as a clear mandate from each of the presidents and their academic vice-presidents to select an individual who could help the university achieve its educational and service aims and enhance its research capabilities seemed to create a particular spirit of mission in the committees.

The Acceptable Applicant Pool

Once organizational politics have been considered in forming a search committee and writing a job description, perhaps the most difficult time begins for a search committee — the waiting period, as applicants respond to advertisements and initial contacts.
The avenues for publicizing vacant academic library positions have become fairly standardized over the past decade, and usually include the placement of written advertisements in the Chronicle of Higher Education, College & Research Libraries News and other major library publications, the listing of positions on job "hotlines"; the placement of notices with library education programs for inclusion in placement bulletins; and often the participation in the American Library Association’s placement service if the timing of the search coincides with an ALA conference. While all of the universities expressed satisfaction with their choice of a final candidate pool and the final selection of a candidate, for most, there were difficult moments, centering primarily around the initial response to advertisements.

There are several possible explanations for the difficulties encountered in generating an acceptable applicant pool. A number of interviewees expressed difficulty with constructing a printed advertisement which conveyed a real sense of the mission of the university; it was seen as particularly hard to convey intentions about new directions that may differ from past practices. It often remained for the search committee and other members of the university community to convey or interpret the university’s direction to potential candidates or to those people who could provide names of potential candidates. In some cases, individuals applied for positions who believed that they understood the present status and conditions of a particular university; because they were not "insiders", they may not have understood that the university wished to move in a direction for which they were not suited. Conversely, other individuals may have felt constrained from applying for positions based on this same information — that they understood the present state of the university and felt that it had little to offer them or that they have little to offer it, when in fact the intended change in direction would have offered them considerable challenge.

Quite typical, then, was the disappointment expressed regarding the quality of applicants to initial advertisements. The search for acceptable candidates at the five sites took on a more proactive stance after applicants began to respond to initial printed advertisements, when it was recognized that additional effort would need to be made to find an acceptable group. Two kinds of expectations may also have worked against the creation of a viable applicant pool. First, when confronted with the knowledge conveyed by such data as that identified by DePew and Allison about turnover, change, and high risk in academic library directorships, many individuals may be wary of taking positions which suggest unacceptable levels of such risk without commensurate reward. Second, search committees at the outset seem to have a tendency to look for "someone who walks on water, makes bread and fish, and comes with a wheelbarrow full of money"; in other words, to have an unrealistic expectation of the nature of candidate qualifications for academic administrative jobs. 18

In most cases, library personnel included on search committees were not able to be particularly helpful in identifying suitable candidates, although fellow committee members expected the contrary. Their knowledge of potential candidates, other than major figures in librarianship who are known to almost all academic librarians, was limited. While faculty members from various disciplines often know the major or "up-and-coming" individuals in their field, the academic library environment seems far more hierarchical. Thus, since library director search committees obviously did not include the outgoing director or even an assistant director, the knowledge base of the library personnel on the committee (such as heads of reference, support staff, non-managerial professionals) was not the same as for those already involved in upper-level library management. The stratification of librarianship by managerial level thus tended to work against identifying potential candidates by using the library representatives on the search committee as resources.

Interestingly, it was academic officers who tended to seek solicitations from third parties, using whatever resources were at their disposal, including contacts at other universities, members of the
board of trustees, library directors and library science deans known from prior employment experiences, and the like. In fact, at the institutions surveyed, academic vice-presidents and other administrators were more likely to be able to identify potential applicants either because of direct knowledge or through secondary sources who were a part of their own "network". Provosts and presidents have had multi-faceted careers in higher education, have probably served at several institutions, and thus have come to know a variety of librarians. They may, for example, have been junior professors and served on committees with librarians; they may have been deans and been members of an academic council with the library director of their campus.

Affirmative Action

The role of the affirmative action officer differed in each university visited. For the most part, these university representatives served primarily as ensurers of compliance with regulations and processes, and as available sources of information as deemed necessary by the committee chair. While these officers all expressed willingness to serve in a more active capacity if necessary, their general view was that the individuals involved in the search were knowledgeable about affirmative action processes and concerns. They felt that in general, library-related searches had the reputation of being conducted with a positive attitude toward affirmative action in their respective universities.

This "if it ain’t broke, don’t fix it" attitude allowed the search process to move with reasonable speed; detailed instructions and/or intervention by the affirmative action officer simply were not necessary. Most officers cited the searches as being "exemplary"; indeed, if one looks simply at the composition of both the initial and final candidate pools, this is certainly true. If one looks at the end result of the search process as a judgment of affirmative action success, however, the data are not as supportive. While at least four of the universities had female applicants as a part of the "best and final" pool of choices presented to academic officers, only one university selected a female and no minority group members were chosen.

The "Select List" and the Final Candidate

In the final analysis, all of the universities had an excellent pool of applicants from which to form a "select list" of three to five individuals from whom a final choice could be made by the provost with the consent of the president, or by the president him/herself. Applicants included in the initial pool represented a wide spectrum of credentials, both acceptable and unacceptable. These included recent M.L.S. graduates with little experience, individuals who were serving currently as associate/assistant directors or heads of libraries at smaller or less research-oriented universities, and individuals who had a variety of managerial and administrative experience outside the university environment (including two- and four-year colleges, special libraries and information centers, government agencies, and private consulting firms).

The selection of a final pool of applicants to be invited for campus visits reflected the recent comments in the Chronicle of Higher Education concerning the few "outsiders" to the academic world who are chosen for administrative posts. The individuals in the final choice pool were associate/assistant directors, held major staff positions, or were already library directors in the university or research library environment. Other individuals who may have had excellent capabilities as managers from, for example, a large and complex two-year college environment or a government staff position with extensive administrative requirements were not considered as viable final choices.

Quite typical, then, was the disappointment expressed regarding the quality of applicants to initial advertisements.

The qualifications of the "short list" of candidates as well as the finalists attest to the desirability of particular characteristics for the academic library director's job: vis-
ibility in the professional community, academic credentials (M.L.S., advanced graduate work desirable but generally not a requirement), direct and significant experience in academic library management, and the elusive qualities that would allow the individual to move the library forward both as a leader and as part of the larger administrative team. In this sense, the new library director was expected to function as a middle manager — balancing the needs of the larger organization with the unit that he/she leads.

Generally, two or three finalists were invited to campus for interviews, with a final choice being invited a second time for negotiation. Although the candidate is sometimes viewed as the “seller” and the organization as the “buyer” in this scenario, the organizations in this study felt that they must sell themselves to potential candidates whom they wished to attract, particularly those whom they had actively solicited. Activities undertaken during these visits reflected those reported in the higher education literature; that is, interviews with the search committee, major administrative officers, potential administrative colleagues (such as deans and directors), and library staff. Also generally included were a presentation by the candidate and a tour of the local area, as well as numerous luncheons and dinners. For the most part, interviewees expressed satisfaction with this part of the process in terms of its usefulness in viewing the capabilities of the candidate.

The final selection process and decision making activity was a delicate balancing act between organizational/administrative unit desires and willingness to offer certain incentives, and the personal and professional needs of candidates. There were stories of candidates who removed their names from the short list, who turned down offers, and who accepted an offer and then changed their minds.

CONCLUSIONS

While it is difficult to generalize from five case studies about the universe of search process experiences, it is possible to make general observations that should be helpful to institutions searching for a library director.

The consensus of individuals interviewed was that the search process, regardless of its pitfalls, yielded a final candidate who was not only acceptable to all parties, but who was in fact the most appropriate person for the institution at that particular moment in its history. The selection process in all cases reflected concerns for institutional politics; university mission and goals; organizational climate and culture; and human, technological and fiscal constraints on the institution.

Many variables influence both the final selection of a candidate and that candidate’s own decisions with respect to the acceptance of a position. Certain key “critical factors” do, however, seem to be common to the searches studied:

• Careful attention to the composition of the search committee
• The management of group dynamics (especially by the chair) within the search committee
• The accurate representation of the university so that only candidates who are truly interested in addressing the university’s problems and prospects will apply
• Accurate knowledge on the part of the search committee of the type of individual academic officers desire for the university librarian — a good manager, a scholar, a team player
• A communication of the direction the institution will be taking in the future from academic officers to all involved in the search

The Critical Role of Outsiders

These five searches serve as a reminder of the increasingly critical role “outsiders” (that is, non-librarians) play in the library and the increased number of levels in the university hierarchy that have placed the library in a different organizational position than in the past.

The academic library community often discusses the need for increasing the visibility and the understanding of centrality of the academic library within both faculty and administration, as well as the need for constant encouragement of faculty to use library resources and services for their research, students/classwork, and scholarly
communication. Every new generation of college student also affords yet another opportunity to acquaint the often uninitiated into the information age via library instruction and use.

Often a university library is the "silent partner" in the academic enterprise — important, but sometimes overlooked. The authors were reminded of the absolute critical nature and centrality of the library to the life of the university at the five sites visited. In a unit the size of the library, one might expect that a search would be influenced largely by internal pressure groups and the wishes of the library staff. The fact that "outsiders" play such an enormous role in deciding the leadership of the library, while perhaps negative from the perspective of some library staff members, is actually a positive contribution to the centrality of the library and a critical factor in demonstrating the importance of the library on the campus.

The search processes examined here demonstrate a particular reason for the need for greater contacts of faculty and administrators with the library community in the academic environment. If the pattern of recruitment of academic library directors continues as suggested here—that is, applicants are advertised for but also unofficially sought and screened through others than the library staff—then academic officers must continue to be exposed to the library portion of the academic enterprise in greater depth, not so they can become experts, but so that they can develop adequate networks necessary for recruitment in this environment.

Critical to the searches studied were the input and ultimate decision-making power of the president/chancellor and provost/academic vice-president. These individuals did not concern themselves with the mechanics of the search process except to provide necessary secretarial and clerical support. They, however, played key roles at four particular points in the process: (1) the initiation of the search process, with a charge to the committee as to what was to be accomplished, (2) the recruitment of individuals who became part of the applicant pool, (3) the delineation of characteristics desired in the final candidate, and (4) the final selection of the candidate who was to become the university librarian.

The Assertive Search

Judging from a recent discussion of the search process in the *Chronicle of Higher Education*, academics are becoming more assertive in undertaking search processes in order to secure good leadership in the face of institutional change. This assertiveness includes the increased use of executive search firms for the recruitment of academic officers, and often the pursuit of individuals who are not applicants for a position.

Although no such approach was used in the search processes studied, nor has one been identified in the library literature, it nevertheless would appear that some kind of enhancement of the library director search process would have been useful to the committees at the institutions represented. In fact, in spite of the overall success of the recruitment effort in terms of the quality of final candidates, a number of interviewees cited the lack of assertiveness on the part of the committee as the single biggest weakness in the search process.

A number of interviewees cited the lack of assertiveness on the part of the committee as the single biggest weakness in the search process.

Numerous individuals commented that had universities somewhere to turn to receive assistance in identifying outstanding candidates, or at least had they a better understanding of the dynamics of the academic library professional community in terms of potential available candidates, they would have been in a better position to construct an outstanding applicant pool earlier on. Given that four of the five final candidates had previously served at the assistant/associate director level and that one had served as a director at a smaller institution, even the availability of a current list of such individuals from whom to solicit possible candidacy might have been helpful.
Earlier in this paper, it was noted that in the past, higher education institutions did not appear to be grooming potential successors for administrative positions. In 1986, however, J.A. Rodman and M.R. Dingerson note that not only do internal candidates for academic dean and assistant/associate chief academic officer positions have a greater likelihood of being interviewed for positions but also have a much higher probability of filling such positions. However, in the five searches studied, current library staff members were rarely considered as viable candidates or included in a final “short list.”

Data from Rodman and Dingerson suggest that internal grooming processes can be useful for the development of applicant pools. Further, developmental programs such as the ACE National Identification Program for Women in Higher Education serve as a model for the identification of potential candidates for administrative positions. Librarianship, unfortunately, appears to have neither external models for the identification of administrators that are as far-reaching as the ACE program, nor the internal processes within many libraries that promote the development to any great extent of individuals for upward career progression to the position of director. The difficulties indicated by this study involved in identifying outstanding candidates and the lack of internal choices for the applicant pool suggest that the library community would do well to promote the development of an identification program for future library directors that is as widespread and far-reaching as the ACE program. Further, research universities should give greater attention to the development of managers in libraries below the rank of director in order to provide a greater pool of potential applicants in the future.

Questions for Future Study

This study did not specifically address the issues facing academic libraries and how they affect the choice of library leadership, nor did it address the specifics of leadership qualifications. There is usually a great amount of information available on the types of academic, budgetary, management, and other issues that a university, its library, and a new university librarian will face. But how do these issues affect the search and selection of a new university librarian? In light of these issues, are large research university libraries choosing individuals today with the same leadership, educational qualifications, experience, sex, and background as previous appointments? Are there characteristics of candidates and dimensions associated with the position of university librarian that specifically impact on the search, screen and selection processes, and to what degree can these same concerns be identified at different types of universities?

These questions, as well as those that deal with the applicant pool and the input of outsiders in the search process, must be studied in order to provide a truly comprehensive view of a complex administrative process that has far-reaching consequences for higher education.

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7. Albert F. Maag, "Design of the Library Director Interview: The Candidate’s Perspective," *College

CORRECTION

To the Editor:
In our recent article "The Serial/Monograph Ratio in Research Libraries" published in the January 1990 issue of College & Research Libraries we have unfortunately found an error that may need an errata notice. On page 53 of the article there is a formula that reads:

\[ M = S - S \]

\[
\%
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This formula is incorrect. The correct formula should read:

\[ M = S (100 - \% ) \]

\[
\%
\]

Apparently the formula got transformed somewhere along the way. We apologize for not catching the error until this (too late) point in time!

ROBIN B. DEVIN and MARTHA KELLOGG
University of Rhode Island
Using a Turnkey Automated System to Support Collection Assessment

Robert K. Baker

A review of the professional literature reveals that librarians have an increased commitment to the collection assessment process as a means of describing collection strengths and weaknesses. Numerous authors point to the many benefits to be realized through assessment, but also acknowledge the labor-intensiveness of the activity. This article details how a small community college library is making use of a turnkey automated system (by Dynix) and a microcomputer-based database program to generate special reports and statistical profiles to support an ongoing collection assessment project.

Most librarians who have written about collection assessment in recent years have generally acknowledged that automation plays an important role in providing ever more accurate statistics on the nature of the collection and of its use. But little has been written about how a turnkey automated system can increase the cost-effectiveness and manageability of the collection assessment process, particularly in a smaller library with limited staffing. Such is the purpose of this article.

BACKGROUND TO ASSESSMENT

Lower Columbia College Library (LCC) is one of the smallest libraries in the Washington state community college system, with a collection size of 29,730 volumes, a professional staff of 1.66 FTE, and a classified staff of 2.75 FTE. The Library's initial experience with collection assessment began in 1984, when the Fred Meyer Charitable Trust (based in Portland, Oregon), established "LIRN," the "Library and Information Resources for the Northwest" program. The goal of the program was to "assist libraries in improving access to information [. . . ] thereby enhancing the educational, economic, and civic development of the region." Libraries throughout the Pacific Northwest were invited to participate in the principal LIRN program activity: collection assessment based on the RLG "conspectus" model as implemented by the Alaska Statewide Collection Development project. As a tool for subject analysis, "The conspectus is a method which enables libraries to assess their collections on a subject by subject basis according to standardized criteria and to describe collection strengths and weaknesses." The LCC Library provided the LIRN project with profiles of six subject divisions. Not surprisingly given the size of the Library's collections, virtually all of the subject areas assessed were at the lowest end of the indicator spectrum as used by the LIRN project: "0: Out of scope," "1a: Minimal, with uneven coverage," or "1b: Minimal, but chosen well." By the end of our assessment activities with LIRN, we were intrigued with the assessment process as well as with the collection-level indicators used in the con-

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spectus. Indeed, we believed that the conspectus approach to collection assessment might just be the strategic technology we needed to communicate our collection development needs to faculty and administrators at the college. We were also concerned that the size of our staff would make the labor-intensive ongoing collection assessment activity difficult to continue.

But in 1986, the Library received a LSCA Title III grant from the Washington State Library Commission. The grant allowed the LCC Library to share a Dynix integrated library computer system that had been installed at neighboring Longview Public Library in 1985. This arrangement offered the potential to gather statistics that had been heretofore unavailable. At the time of installation, LCC contracted with Dynix to use all of the modules that had been purchased by Longview Public Library, among them circulation, online public access, and cataloging. Also included was Dynix’s “RECALL” module that allows libraries to write simple English language-like statements at the level of the computer’s PICK operating system. Such statements can extract—without programmer assistance—data and statistics gathered by other modules such as cataloging or circulation. The potential for the Dynix system to support collection assessment was clear even during the installation year, but could not be realized until after at least a year’s worth of use statistics had been gathered.

A COLLECTION DEVELOPMENT POLICY

As a prelude to continuing the assessment program, the library’s faculty advisory committee worked on developing a formal collection development policy during the 1987-88 academic year. Among other things, the policy was meant to serve as the impetus for beginning to rebuild a book collection that had suffered from years of underfunding. The policy, approved by that committee in May 1988, stipulated an important guiding principle: that “additions to the collection should be selected primarily to be useful to—and used by—students. The college wishes to build a ‘student-centered’ LRC collection.” The college administration approved a modest addition of $3,500 to the regular materials budget of $37,438 to support assessment activity.

Given the newly adopted principle, and the need to engender faculty support for building the collections, we determined that we wanted to broaden the “collection-centered” LIRN conspectus approach to incorporate more “client-centered” data into our assessments so that we could show faculty how students used the collection. Much of this client-centered data was available in the automated system.

CUSTOMIZED STATISTICS ON THE AUTOMATED SYSTEM

The library routinely gathers materials from tables, carrels, and reshelving shelves, and checks them out to a special “in-house user” patron type to gather statistics on in-library use of materials before reshelving. With over two years of both in-house and lending statistics for the regular Dewey-classified circulating collection as well as the reference collection, it was time to begin to find ways to use our automated system to support some kind of assessment process. Of course, the turnkey system as installed offered menu-selectable statistical reports that showed the circulation of items within various call number ranges. We could also easily determine the number of items in specific parts of the library collection. But we were interested in gathering more in-depth collection profile information which we could present to instructional faculty.

As already noted, the Dynix system provides clients with a special module—RECALL—whose purpose it is to enable the gathering of data and statistics beyond those included in the menu-selectable reports already supported in the system’s functional modules. Of course, this kind of functionality is not unique to Dynix. Figure 1, which shows the top ten automated system installers in academic libraries in 1988, reveals that many of today’s vendors provide similar report generation capabilities.

Among the uses typically found for RE-
CALL at Dynix installations are listings of patrons owing excessive fines; the number of items overdue at any given point in time; sorted lists of patrons residing in particular zip codes; and the number of items within various categories of the collection. Indeed, few factors limit the kinds of data that can be recovered—or how the data can be presented—using RECALL.

Indeed, we believed that the conspectus approach to collection assessment might just be the strategic technology we needed to communicate our collection development needs to faculty and administrators at the college.

After some ten hours of professional time, as well as several telephone calls to the support staff at Dynix, we developed and completed testing on five RECALL programs designed to provide us with the kinds of data that would be more useful to our assessment project. These in-house programs are executed sequentially by the computer, and, having been saved to disk, can be run anytime we need to do an assessment of a different subject or topic area. Text in the programs need be modified only slightly, a process consuming no more than five minutes per topic area.

The first program selects items in the library collection within a call number range (e.g., 610-619, the health sciences in Dewey) and saves the selections to disk as a named list. This saved listing is then retrieved by a subsequent RECALL program and is further broken down and saved as smaller “topic” listings (e.g., 610, medicine). The next two programs select each of the saved topic lists (as well as the broader subject listing) and count the following:

- the number of volumes actually used since the computer system was installed;
- the total number of circulations in the topic area since installation;
- the number of holdings with collection codes for nonfiction (including oversize, some reserve collection items, and items “in process”);
- the number of holdings with collection codes for reference (including atlases and indexes);
- the number of holdings with collection codes for audiovisual materials; and
- the number of holdings published up to and including 1978, between 1979 and 1982 inclusive, and from 1983 on.

A resident RECALL specialist (and Customer Support Manager) at Dynix, Gretchen Freeman, created a special dictionary of publication dates to circumvent the inconsistencies that would be encountered in subfield “d” of the imprint field of the MARC record. The dictionary strips away any extraneous characters (such as { or ©) to leave a data element composed of the first four numeric characters encountered in the subfield. Counts of publication dates in this special dictionary do register some anomalous statistics because of the nature of publication dates in serially published items, but the Library was willing to accept this.

The final program prints out a saved list. This printout reveals all library holdings regardless of location in the collection: similar to a shelflist, but sorted by highest number of uses. Included in the listing is the number of uses of the item, the call number, the collection code (e.g., nonfiction, reference, oversize), title, author, and publication date.

MICROCOMPUTER SUPPORT FOR STATISTICAL GATHERING

The various counts from the RECALL programs are manually entered into a database established on a MS-DOS microcomputer. The database was created using Q&A Version 3.0, a “flat file” database manager with word processing and mailmerge capabilities from Symantec Corporation. The database calculates percentages of volumes published between certain dates and circulation or other use percentages. The database also stores the names of faculty members (or departments) who will be contacted with the information. The design of the database consumed approximately six to eight
<table>
<thead>
<tr>
<th>Vendor</th>
<th>Report Generation Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlyle Systems</td>
<td>Carlyle’s report writer, called INGRES, can retrieve data elements for simple or complex reports; includes document and text formatting abilities and arithmetic capabilities; can dynamically change report parameters each time the report is printed.</td>
</tr>
<tr>
<td>Data Research</td>
<td>DRA’s optional module—UserBase—runs on the VAX/VMS family of computers. It fully supports the MARC format, maintains a data dictionary, and generates and maintains data entry and transaction screens. It can also calculate, process, or manipulate data, and generates menus, reports, forms, letters, and labels.</td>
</tr>
<tr>
<td>Associates</td>
<td></td>
</tr>
<tr>
<td>Geac Computers</td>
<td>Both Geac systems (ADVANCE, a PICK-based system for small-medium libraries, and GLIS for larger systems) feature flexible report generators which can extract information from any field or combination of fields, with content and format controlled by the library. ADVANCE also uses the RECALL language found on the Dynix system. In the future, ADVANCE will contain a more sophisticated and user friendly report generation interface.</td>
</tr>
<tr>
<td>IBM/DOBIS</td>
<td>While this system does not have a report generator <em>per se</em>, some clients are generating reports beyond the typical management reports from a DOBIS/Leuven database. The approaches include use of the journal or transaction data, and extraction of required fields from the DOBIS database itself.</td>
</tr>
<tr>
<td>Innovative Interfaces</td>
<td>The INNOPAC report generator resides in the Management Information subsystem. It can retrieve any data elements previously defined on the Innovative Interfaces system (including full MARC fixed and variable fields), and is sortable in any form. INNOPAC supports Boolean operators.</td>
</tr>
<tr>
<td>NOTIS</td>
<td>NOTIS installations presently produce customized reports using the SAS report writer package from the SAS Institute (and clients typically share the programs amongst themselves). A new optional module—NOTIS Report Writer—which provides a “user-friendly” online interface to SAS for designing customized reports will be available for purchase in the fourth quarter of 1990.</td>
</tr>
<tr>
<td>OCLC Local Systems</td>
<td>The LS/2000 system provides collection assessment capabilities through a variety of off-line printed reports in its Administrative Subsystem. The reports can be sorted and/or limited by one or more fields of information. Among the reports offered: items in circulation; low circulating items; purchase alert by circulation; or purchase alert by hold.</td>
</tr>
<tr>
<td>UNISYS</td>
<td>The UNISYS CIRC system can maintain statistics for call number schedules, and clients can create schedules for up to four collections or parts of a collection with up to sixty ranges in each. Clients may also create up to 500 statistical classes for either item or patron types for use in reports.</td>
</tr>
<tr>
<td>VTLS</td>
<td>The VTLS on-line reporting subsystem uses several parameters to select records, including up to five different call number ranges, record format, language code, publication date ranges, and location. In addition, the VTLS-89/Hewlett-Packard product has a report writing program called HP Business Report Writer that allows any data item in the database to be used in generating reports.</td>
</tr>
</tbody>
</table>

**FIGURE 1**
Vendor/Report Generation Characteristic Table
hours of professional time.

Once the data has been entered into Q&A and printed out in RECALL-generated title listings, the database program then prints the form letters to faculty via the mail-merge function. These letters accompany the printouts. The process of entering the data and printing out mail-merge letters generally consumes no more than five to ten minutes per topic area. A sample letter based on the data from a health science assessment appears below. The « » marks indicate where the "mail-merge" elements are inserted by Q&A; these marks do not, of course, appear in the actual faculty letters. The letter reads:

TO: «Nursing Department Faculty»
FR: Library
RE: Collection Assessment in «Medicine»

The purpose of this memo is to provide you with some information about that part of the library collection dealing with «Medicine». Attached to this memo you will find a listing of titles within the Dewey call number range of «610». The listing is arranged in order by highest use. We hope you will assist us in the library by going through the list and indicating which titles (if any) you believe should be withdrawn and/or replaced.

In virtually all of the fields assessed so far, faculty have been fascinated to learn what is being used and what is not.

The library's computer system has been programmed to provide us with some useful data which you may wish to consider as you work with the list. The assessment of this part of the collection was done on «September 14, 1988», and reflects what the collection looked like on that date. Of the «1,613» volumes in the broader field of «Health Sciences», there are «504» volumes devoted to «Medicine». And of these «504» volumes, «204» (i.e. «40.9%») have been used (either in the library or loaned from the library) since the computer system was installed in June 1986. There have been «536» loans of the used materials, which accounts for «18.3%» of the total circulation of «2,924» loans within the broader field of «Health Sciences».

The following is some statistical data which characterizes the age of this part of the library collection (based on publication date). Of the «504» volumes in «Medicine», «308» (or «61.1%») were published in 1978 or before; «91» (or «18.1%») were published between 1979 and 1982; and «57» (or «11.3%») were published in 1983 or after.

As to location of the materials themselves, «398» are in the nonfiction part of the collection (including oversize books); «103» are in the reference collection (including atlases, indexes, and law); and «3» are audiovisual materials.

We would be most grateful if you would assist us by answering the questions on the next page. You may also note on the printout some guidelines which we may use in considering new titles for addition in this part of the collection.

The second page of the letter asks the faculty if there are any authors or standard titles missing; if they can recommend any "best books" listings that we should be consulting; or if there are particular topics on which they would like us to focus collection building. Their responses, as well as any comments we believe worth noting based on the faculty meeting we schedule, are stored in the appropriate database record as topic profile information. As a part of the profile, we also store the faculty's estimate of the number of titles they believe we need to collect annually, as well as the average per volume cost for materials in the topic (gleaned from the "Book Trade Research and Statistics" section of the latest edition of the Bowker Annual Library and Book Trade Almanac).

MEETING WITH FACULTY

The final segment of the process is generally the most time-consuming component: meeting with faculty. We arrange a first meeting through the departmental library advisory committee representative, asking for about a half-hour to make our presentation. We arrive at the meeting prepared with printouts, letters, and any pertinent use statistics gathered for periodical use and ILL. Because instructional faculty are busy people, we generally conclude the first meeting by scheduling a follow-up meeting from two to four weeks in the future at which time we can continue discussions, answer further ques-
tions occasioned by the materials we have provided, and retrieve the annotated listings.

The focus of the meetings thus far has been to elicit from the instructional faculty what their expectations are relative to student use of the library collection and to enlist their aid with weeding. We explain the data contained in the cover letter, and point out any anomalies in the printouts. In the sciences, faculty have been particularly interested in the age of the collection: titles published over five years ago are automatically suspect unless they are of historical interest. In virtually all of the fields assessed so far, faculty have been fascinated to learn what is being used and what is not. And, of course, there are always surprises, as we learned during the collection assessment for the nursing department. For example, we discovered that several newer editions of some standard works were gathering dust on the shelves while older versions were seeing high circulation. The reason was that reading lists had not been updated. We also found that an important monographic series, *Nursing Clinics of North America*, was receiving little use. The reason was the library’s decision to catalog the series based on the Library of Congress serial record, rather than as separates with subject access to each volume. The set has subsequently been recataloged in hopes of promoting use.

**BENEFITS**

We certainly believe we are reaping many of the benefits traditionally attributed to collection assessment: in particular, a better understanding of the strengths and weaknesses in the collection based on actual use as well as a clearer sense of what faculty expect us to collect. Response to the departmental visits and assessment presentations has been uniformly positive. Faculty appreciate the individualized attention and also learn in greater depth about the specific informational resources and services available to them and to their students.

We have come to the same conclusion reported by Mary Bushing in an article on assessment in smaller libraries: “The process may yield nothing of value for cooperative collection projects on a regional or state level, but the information can be helpful in defining local cooperative collection projects that result in better access to information. At the very least, local library collection can be changed to better serve their users and to be core collections that can stand independently to meet basic information needs.” A natural extension of the process to include cooperative assessment with Longview Public Library may occur when that agency has completed its lengthy retrospective project of assigning call numbers to all of its holdings. An anticipated outcome of shared collection assessment would be the development of cooperative collection development policies, which would likely include both collecting goals and acquisition commitments in both agencies.

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**Small libraries face special difficulties when attempting to engage in collection assessment activities because of the labor-intensive nature of the activity.**

Small libraries face special difficulties when attempting to engage in collection assessment activities because of the labor-intensive nature of the activity. When the LCC Library automated, it did so with the expectation that sharing a turnkey system with our public library would enhance public services by improving access to each other’s collections. But the outcomes of automation have far exceeded our expectations, providing us with the wherewithal to conduct a manageable and cost-effective ongoing collection assessment program. The result is a strong factual basis upon which requests for increased funding can be substantiated. Indeed, we have come to believe that one of the greatest benefits to automation may well lie in the ability it provides us to manage intelligently the growth and development of the collection on a long-term basis.
REFERENCES AND NOTES


2. Ibid., p.6.

3. The collection level indicators of the LIRN project range from "0: Out of Scope" to "5: Comprehensive Level" and are intended to be applied as descriptors using the entire possible bibliographic universe as a comparison. The conspectus method of collection evaluation, as well as the LIRN program generally, is well described in Larry R. Oberg, "Evaluating the Conspectus Approach for Smaller Library Collections," College & Research Libraries 49:187-96 (May 1988).


6. "Client-centered techniques measure how the collection is used by patrons. Examples of these techniques are circulation studies, interlibrary loan statistics, shelf availability studies, and various user studies," Pacific Northwest Collection Assessment Manual, p.32.


8. The author contacted each of the vendors by letter, providing a description of the functionality that was being described in this article and requesting that information on report generation capabilities be sent back in writing for inclusion here.

Peer Coaching in a University Reference Department

Gwen Arthur

Seeking to extend its regular staff development program, Temple University's Reference and Information Services Department implemented in Spring 1989 a semester-long peer coaching program designed to provide staff with support in fine-tuning and maintaining certain reference desk skills. The program combined training in positive reference behaviors, objective observation, and feedback. In addition to detailing the peer coaching experience at Temple, the article covers the origins of the program, coaching basics, and peer coaching's applicability to the academic library setting.

For many years the Reference and Information Services Department at Temple University has had a training program for all reference desk staff, both professional and paraprofessional. We also have regularly scheduled departmental staff development programs that cover a variety of topics from specialized reference sources, such as the CIS Index, to special collections in the Temple and Philadelphia library communities to communication strategies for library staff working with special student populations such as handicapped and foreign students. Still those responsible for training and staff development wondered if we were doing everything we could to develop our staff's skills and knowledge. We were considering various directions in which to take our program.

Since we already had programs that introduced and periodically reviewed a variety of reference sources, we thought we should go elsewhere for program ideas. Increasingly imperative issues seemed to be those of behavior and communication in the reference interview. We had also become aware of the training research that shows that the information and skills learned at workshops may not always be transferred to the on-the-job situation. This research also concerned us, because of our established commitment to library continuing education at Temple.

In 1983 the Maryland State Department of Education's Division of Library Development and Services conducted an unobtrusive study of public library reference services. The study revealed that on the average only 55 percent of reference questions were answered correctly. These findings were similar to those of other unobtrusive studies of reference service. The findings in the 1983 Maryland survey (that used questions to which the answers could be found in just a few basic reference sources) also seemed to indicate that variables most strongly associated with correctness of answers were staff behaviors, including negotiation behavior (probing, paraphrasing, and open questioning), interest in the patron's question, comfortableness with the patron's question, and follow-up. Maryland's Division of Library Development and Services has since instituted a statewide program for

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reference training. The program focuses on the development of positive reference behaviors, using peer coaching as one method of maintaining desired interpersonal and communication behavior on the job. Studies done after the implementation of this training program revealed a dramatic increase in percentage of correct answers in reference departments in which these model behaviors were applied on a consistent basis.5

We at Temple recognized that coaching might be useful to our reference staff, not only assisting them in their transfer of new skills or information to on-the-job situations, but also providing them with support for fine-tuning and maintaining positive reference desk behaviors. The Maryland statewide study and statistics provided us with the incentive to plan a coaching program. The video Coaching: Practice Makes Perfect produced by the Library Video Network in Baltimore and its accompanying material on peer coaching, along with some basic training literature on coaching and feedback, provided us with a starting point for our plans.6 But before describing the coaching program planned and implemented in Spring 1989, here are some coaching basics.

TRADITIONAL COACHING AND PEER COACHING

Coaching has been used in business and industry both as a means for resolving performance problems and for helping employees develop and maintain skills. Coaching as a facet of training or staff development may be short-term or long-term. It may cover a variety of jobs and skills: manual, intellectual, or managerial. In business, coaching relationships are frequently between supervisor and employee, and the business literature often emphasizes coaching strategies that reflect the dual role of the supervisor as coach and evaluator.7 This hierarchical emphasis is somewhat mitigated by the recent management literature trend that emphasizes communication and motivational strategies based on positive feedback and reinforcement.8 Elements of the coaching process in the business environment commonly include: (1) agreement between supervisor and employee on problem or performance objectives; (2) mutual agreement on action to be taken; (3) follow-up by both parties; and (4) reinforcement from supervisor.7 This same supervisory style of coaching exists in libraries. It is mentioned in passing in some of the library training literature, but little is found in-depth on this subject, except for M. G. Williamson’s Coaching and Counseling Skills.9 Supervisors who are interested in traditional coaching should consult the broader training and supervisory literature that details coaching approaches applicable to a variety of work environments.

The dearth of information on coaching in the library literature might indicate that library administrators and supervisors assume that new information or skills learned by staff, either during initial training or via various continuing education or staff development programs, will later be applied on the job. If so, these administrators need to pay more attention to the research that shows that without adequate practice and feedback, skills learned may not be transferred or maintained.10 As Beth Babikow and Becky Schreiber point out in their article about coaching alternatives in library settings, librarians “do not have the opportunity to practice skills everyday [and] . . . until performance reflects new skills, can it be said that the skills have truly been learned?”11 The larger issue of skill transfer was well covered in a bibliographic essay by Deborah Carver in a recent issue of Library Administration and Management.12

Babikow and Schreiber also advise that the traditional hierarchical mode of coaching may be uncomfortable for both the supervisor and the subordinate. Staff awareness of the dual supervisory responsibility for coaching and evaluation may inhibit their practice of the very skills that coaching is intended to develop.13 Yet coaching still seems in order, as research in education shows that skills learned during training may not be applied to the job unless observation and feedback occur.14

Because of the collegial nature of certain professions like teaching and librarianship, peer coaching rather than supervi-
sory coaching is a model that should be considered for use in these environments. Peer coaching uses some of the same coaching basics (mutual agreement on objectives, reinforcement) as the more common style described above. However, the hierarchical relationship is no longer in effect: coach and coachee are colleagues, not supervisor and subordinate. Often employees may even pick their coaches. The opportunity in peer coaching to choose a trusted colleague as coach may reduce some of the tension inherent in the coaching situation (particularly in the traditional supervisory-subordinate arrangement). The process of peer coaching, as described by Babikow and Schreiber, includes: (1) picking a coach one trusts; (2) drawing up a contract identifying objectives; (3) observing of coachee by coach; and (4) providing feedback from coach to coachee. With the exception of choice these steps are similar to those described above in traditional coaching.

Basically, the coach should adhere to certain tenets in any coaching situation. First, because the coaching situation may make the coachee feel vulnerable, an element of trust should exist. Also, the coachees must feel that they are getting something out of the coaching. Therefore, agreement on goals and objectives by both coaching partners is necessary. Observation and feedback are essential components of coaching; both should be objective.

PEER COACHING IN LIBRARIES

Presently, peer coaching seems to be a model that has developed more in public libraries than in other types. At least one library system, that in Maryland discussed above, has planned and conducted reference workshops including coaching techniques to insure transfer of skills learned in the workshops to on-the-job situations. The LVN video Coaching: Practice Makes Perfect has a public library emphasis. The only formal coaching program in academic libraries may be part of the training program for preprofessionals at the University of Illinois Libraries. In response to an informal query sent to RLG libraries in the Summer of 1988, we received no positive responses regarding the use of any type of formal coaching program, either peer or supervisory. Some libraries did indicate that they use peer observations for purposes of evaluation. Evaluative peer observation is an entirely different matter.

Although peer coaching has evidently not been widespread in a variety of libraries, the technique may be particularly suited to the nature of librarianship. Many librarians consider themselves professionals. Because they often may function fairly autonomously as professionals, they may not respond favorably to the more common hierarchical coaching mode that dominates business. Peer coaching provides a context that may reduce some of the awkward or uncomfortable aspects of the traditional situation. After all, coaching does involve placing an individual in a vulnerable position, open to criticism. First, peer coaching allows the librarians to set their own objectives. Second, they can pick a trusted colleague as coach. Third, common experiences and concerns shared by coaching partners may provide the basis for particularly realistic, yet non-judgmental, feedback. Also, since it appears from the library literature (or lack of it) on coaching that many supervisors may not conduct formal coaching, peer coaches are not necessarily any less experienced at coaching than supervisory ones.

Staff awareness of the dual supervisory responsibility for coaching and evaluation may inhibit their practice of the very skills that coaching is intended to develop.

All these points may be doubly true for academic librarians. The academic library environment is often both professional and collegial. Professional relationships maintained in this setting may reduce the emphasis on supervisor-subordinate roles. Professional and/or faculty unions
may make increased peer communication and interaction particularly important. All of these elements make the academic library a setting in which peer coaching may be a particularly useful method of providing staff with support for developing, maintaining, and fine-tuning skills.

PEER COACHING IN TEMPLE’S REFERENCE AND INFORMATION DEPARTMENT

The more we learned about peer coaching, the more promising it seemed for providing support for staff in incorporating new skills and maintaining positive reference behaviors on-the-job. Moreover, several Temple librarians had already expressed an interest in coaching for a variety of reference functions, including library instruction, computerized database searching, and communication and interpersonal skills at the reference desks. For a variety of reasons we decided to focus our initial coaching program on reference desk skills. First, reference desk service seemed a library function particularly well suited to coaching, since it often involves highly visible and observable behavior—interaction with the public. Second, by beginning with something simple, that is, observable behavior, we hoped to encourage objectivity in coaching. Third, because coaching on desk behaviors did not require any special subject or technical expertise, we could involve both professional and paraprofessional desk staff in the program, and hopefully eliminate evaluation as an issue by minimizing distinctions between experienced and inexperienced staff. Fourth, because some reference desk behaviors seem to be related to the accuracy of desk service, as the Maryland study demonstrates, coaching fit our ongoing priority for quality reference desk service.20 (Coaching lays the foundation for feedback, modification, further observation, and more feedback.)

The Temple University program was initiated in February 1989 in the Reference and Information Services Department of the Central Library System. It was conceived as a semester-long program, at the end of which the staff would evaluate its usefulness. Early in the term we planned to review positive reference desk behaviors, including nonverbal behavior, open questions, and other elements. Then we would introduce the concept of peer coaching, including the basics of objective observation and feedback. Then participating staff would coach one another on their reference desk behaviors for the rest of the semester. Depending on staff response, we could then continue and extend the program in following semesters to involve other staff. We hoped that beyond encouraging positive desk behaviors, the program would foster positive communications and teambuilding among department members.

After all, coaching does involve placing an individual in a vulnerable position, open to criticism.

When we introduced the proposed program to Temple reference staff, they initially expressed some concern over how the program would be administered. Typical issues included scheduling of observation and feedback. Although staff did not express too much anxiety about being observed, they were quite conscious of the potential for psychological strain among coaching participants who were not comfortable with one another or who had not had some instruction and practice in objective feedback. We attempted to allay these concerns by providing a clear outline of our program and by emphasizing that the focus of the program was to provide objective feedback, not evaluation, of reference desk behaviors. We reminded them that they would choose their own coaches and draw up their own contracts.

To summarize, we began our program by using the “Reference Behaviors Checklist” included with the LVN video Coaching: Practice Makes Perfect to focus on various desirable reference desk behaviors such as follow-up, negotiation, and positive nonverbal behavior such as smiling.21 The LVN video was also used to introduce...
the peer coaching concept. Staff viewed additional videotaped sketches of reference interviews in order to stimulate further discussion. We covered the basics of behavior observation and objective feedback, again using videotaped simulated interviews in order to practice observation and feedback techniques. The entire reference staff participated in the initial training; about half were actively involved in coaching for the duration of the semester. A more detailed outline of the entire program is given in figure 1. (See figure 1.)

In May, at the end of the semester-long program, we received feedback from the coaching participants. This feedback was useful both in gauging some of the benefits of the program and in planning how to continue it. Not surprisingly, staff reported initial awkwardness about being observed and receiving feedback. However, they indicated that they felt more comfortable as the semester progressed. They also reported that being coached sensitized them to question negotiation and made them generally more aware of their interpersonal and communication styles. Positive feedback particularly made them aware of which communication behaviors worked well for them; positive feedback reinforced good behaviors. Overall, coaching helped them fine-tune and maintain the positive reference behaviors.

Staff also felt that the experience of observing other staff in action was a valuable one. In many cases, serving as a coach and an observer provided staff with perhaps their first opportunity since their early training to observe the entire reference process in action and to evaluate how it works or doesn't work. The process also gave them a chance to observe patron reaction to different types of communication styles.

| First Session: | Session leaders stress nature of the program: it focuses on (1) learning about and using positive reference desk behaviors (2) coaching each other in order to maintain them. |
|               | Entire department views ALA video Coaching: Practice Makes Perfect. |
|               | Staff discuss concept of peer coaching; also details such as choosing coaches, contracts, scheduling conflicts. |
|               | Positive desk behaviors are covered, using “Reference Behaviors Checklist.” |
|               | Volunteers agree to participate as coachees; rest of staff requested to cooperate if asked to participate as coaches. |
| Second Session: | All department members observe videotaped sketches of reference interviews and use the “Reference Behaviors Checklist” to practice their reference and observation skills. |
|               | Coachees and their selected coaches share with the rest of the department how they drew up their contracts. |
| Third Session: | Staff covers basics of good feedback. |
|               | Staff views same video sketches from Session Two and additional ones; using videos as basis for behavioral observation, they practice providing feedback both as a group and in teams of two. |
| Next six weeks: | Coachees and coaches observe each other at reference desks, provide feedback to each other. |
| Fourth Session: | Entire staff meets to discuss progress in coaching program; if and how it should be continued. |

FIGURE 1
Temple Reference Peer Coaching Program Outline
and to judge for themselves which behaviors evoked positive responses from patrons. As contracted observers, they could do this without feeling intrusive, uninvited, or pressed for time because they themselves were on duty. Senior staff not only reported that observation of others sensitized them to their role as role models for new staff, particularly as they saw new staff emulating their desk behaviors, but also gave them a fresh perspective on possible ways to improve reference desk behaviors.

Senior staff not only reported that observation sensitized them to their role as role models for new staff . . . but also gave them a fresh perspective on possible ways to improve reference desk behaviors.

Problems raised in our review of the program included scheduling. Since half the departmental desk staff was participating in the program, scheduling was difficult. Coaches did report the problem of patrons persisting in asking them questions when reference desk activity was high. Another problem was that coaching sometimes turned into consultation when a more experienced staff person was observing a new staff person.

CONCLUSION

In spite of some problems, the overall response to the program from staff was positive. Because participants were able to select coaches from their peers, the coaching environment proved to be relatively nonthreatening. The program focused on coaching specific reference desk behaviors, so participants were able to set relatively unambiguous goals for observation and feedback in their contracts. Equally important, they were also able to emphasize those specific identifiable reference behaviors that were important to them.

The reported effects of the program were (1) greater clarification of the reference process for all staff involved in coaching; (2) increased recognition of positive communication behaviors, both through observation and feedback; (3) increased self-awareness of individual communication style and desk behavior; and (4) increased reinforcement of positive desk behaviors.

Departmentally the program introduced and reviewed reference techniques, such as using open questions, question negotiation, and follow-up. It made staff aware of good reference behaviors, encouraged their use by all staff, and supported staff application of them on-the-job via coaching. Also all staff became acquainted with the basics of objective feedback that can be useful in a variety of situations. Finally, the program fostered a team feeling among the participants.

Overall, the Temple reference staff felt that coaching provided a different sort of staff development program. Rather than just covering reference sources or acquiring new technical skills, such as computerized searching, the coaching experience provided them with the opportunity for polishing their communication skills and reinforcing their positive desk behaviors. The rush of activity at a busy reference desk often strains these behaviors. Staff participants felt that coaching, both observing and being observed, was a supportive experience, definitely worth continuing in some form in future semesters. Staff coaching teams of Spring 1989 say that they anticipate coaching each other in semesters to come, and we plan to have more of the staff start coaching in Fall 1989. Coaching will become a long-term component of our reference staff development program to be used regularly to support skills maintenance and development, and to stimulate and re-sensitize staff to the reference process. Although we have not evaluated the coaching program beyond the self-reports of the participants, we think that it has added a vital dimension to our reference training and staff development at Temple.
REFERENCES


18. *Coaching: Practice Makes Perfect* (video)


The Electronic Revolution in Libraries: Microfilm Déjà Vu?

Susan A. Cady

Fifty years ago microfilm was perceived as the most significant technological development to affect the scholarly community since the invention of the printing press. Claims that microfilm would bring about a revolution in research methodology parallel current predictions about the impact of electronic technologies. However, the expectations for microfilm as an acquisitions and preservation tool in libraries and as the engine to drive increased scholarly productivity were not completely fulfilled. The history of microfilm provides some cautionary guidance as to the way in which the profession should approach the era of electronic documentation.

In the 1930s the vision for the use of microfilm technology in libraries and the scholarly community in general was a complex one incorporating elements of preservation, space management, access to materials, and productivity. Now that more than fifty years have passed since the initial burst of enthusiasm for this technology, how does the reality of microfilm usage in libraries and by scholars square with the original expectations? Microfilm is an integral part of academic and research library collections in the late twentieth century, and the burgeoning preservation movement is now focusing new attention on its key role in saving the intellectual content of disintegrating printed pages. However, the literature is also replete with discussions of problems relating to microfilm, practical problems that lead librarians and library users to yearn for an improved technology.

Indeed, other technologies are generating enthusiasm now, primarily the electronic ones. Today’s library leaders and scholars are making claims for future electronic documentation uses that parallel those made a half century ago for microfilm. The history of the development of microfilm and its adoption by libraries may offer some guidance as to the way in which the profession should approach the use of these electronic technologies. This paper will limit its scope primarily to microfilm since the early claims were made in relation to that specific technology.

EARLY HISTORY OF MICROFILM

In 1839 English optical craftsman John Benjamin Dancer invented microphotography by utilizing a microscope with the new daguerreotype process made public in the same year. However, the Frenchman René Dagron was responsible for the first microfilm patent, for commercialization and popularization of the medium, and for one of the most exciting stories in microfilm history. His patent was for a device that combined a compact viewer with tiny microfilm pictures taken in his studio, all fashioned into a piece of jewelry that he sold at a handsome profit. When the Franco-Prussian War broke out in 1870, Prussian troops laid siege to Paris. In Sep-

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tember of that year, Dagron and his equipment departed from Paris in two balloons to escape behind the Prussian lines and set up his famous "Pigeon Post." Microfilms of official dispatches and private messages were filmed and sent back to Paris via homing pigeons.

Although the period from 1871 through 1920 was a relatively uneventful one in terms of microfilm, librarians were becoming aware of photographic technology. Cannon's Bibliography of Library Economy, which covered the period 1876 to 1920, included a heading for "Photographic Copying Processes" with several references to the use of the photostat, originally a Kodak trademark. The immediate successor to Cannon's Bibliography indexed nine articles, three of which pertain to the Fiskoscope, a lorgnette-like device for speedy microtext reading. In the late 1930s the literature of librarianship exploded with articles about microphotography. A 1938 article stated that "Microphotography, a big word for a small body, has become the talk of the town, and rather suddenly so." The 1933–1935 volume of Index to Library Literature included thirty-five articles in three pages. In the next volume (1936–1939) there were twenty-six pages containing 294 annotated references under this heading. The growth of the microfilm literature later subsided to a rate in proportion with the rest of library literature.

Microfilms of official dispatches and private messages were filmed and sent back to Paris via homing pigeons.

Allen Veaner dates the beginning of microfilm use in libraries to 1938 with the initiation of the Foreign Newspaper Microfilming Project at Harvard and the founding of University Microfilms by Eugene Power. Meckler suggests that libraries had become interested in photographic reproduction technology through their use of the photostat machine that had been installed at the Library of Congress, the John Crerar Library, and the New York Public Library by 1912. The 1925 re-publication of an article by Otlet and Goldschmidt and improvements in microphotography technology also contributed to the new enthusiasm. The Otlet article was notable as an early conception of microfiche technology, even to the point of suggesting eye-readable headings. About 1925 the Leica camera became generally available, a camera that provided a compact instrument with a high-quality lens and a small film surface for each exposure. It was used by individual scholars and on large projects at the Huntington Library and Stanford University's Hoover Library.

The miniature Leica camera could only hold five feet of film at a time and was thus inefficient for the massive microfilming activities envisioned by proponents of this new technology. A camera developed by bank manager George P. McCarthy to reproduce bank checks on 16mm film solved this problem. McCarthy licensed his Check-O-Graph camera to Kodak that produced and sold it under its newly formed subsidiary Recordak. With some modifications, the planetary (nonrotating) version of this camera is still in use for microfilming.

THE VISION OF MICROFILM IN LIBRARIES

Writing about microphotography in the late 1930s and early 1940s was not only voluminous but also filled with hyperbole. Robert C. Binkley claimed that microfilm "promised to have an impact on the intellectual world comparable with that of the invention of printing." In 1940 Frederick Kilgour at Harvard University Library wrote a popular article on microfilm for the Christian Science Monitor. Kilgour claimed that microphotography was "one of the most important developments in the transmission of the printed word since Gutenberg." Librarians quickly perceived in microfilm technology an opportunity to improve their services at a reasonable cost. The literature of the period captures their great expectations and their early efforts
to transform these visions into reality. Three early sources of documentation on scholarly microfilm stand out to such an extent that their publication histories themselves tell something about microfilm history. The first was the *Manual on Methods of Reproducing Research Materials*, a widely cited work produced initially in 1931 and then re-issued in 1936. In the *Manual*, historian Robert C. Binkley examined the economics of all the existing technologies for the publication and distribution of research materials. He included examples of each technology and photographs of machinery used to produce and read them. The second source was the periodical *Journal of Documentary Reproduction* published from 1938 through 1942. It ceased in 1943 for "the duration of the war effort" but was not revived until 1950 when its sponsorship was transferred from the American Library Association to the American Documentation Institute. Thus, it reappeared as the journal *American Documentation* but by 1959 contained few articles about microfilm. The third source was the proceedings of the Microphotography Symposium at the 1936 Conference of the American Library Association. This was the first library conference on microfilm, and top leaders in the profession were prominently in attendance.

**PRESERVATION MICROFILMING**

Today the goal of preservation microfilming is to capture the intellectual content of whole collections in a medium that will outlast brittle acidic paper. In the 1930s librarians were primarily concerned about the deterioration of newspapers and about the possible destruction of irreplaceable documents during the threatened hostilities in Europe. By 1936 Eastman Kodak was microfilming the *New York Herald Tribune*, *New York World Telegram*, *Buffalo Courier-Express*, *Chicago Daily News*, *Dallas News*, *Detroit News*, and *Newark Sunday Call*. In the late 1930s the Harvard University Library initiated the Foreign Newspaper Project, funded by the Rockefeller Foundation, to microfilm between thirty and thirty-five current foreign newspapers. Raney called microfilm "our indefatigable little friend" that "can hide away in its elfin quarters the records of civilization when war's madness breaks loose." With the onset of World War II, President Roosevelt lent his support to the preservation effort in a letter dated February 13, 1942, to the Society of American Archivists. Roosevelt stated:

At this time, and because of the conditions of modern war against which none of us can guess the future, it is my hope that the Society of American Archivists will do all that is possible to build up an American public opinion in favor of what might be called the only form of insurance that will stand the test of time. I am referring to the duplication of records by modern processes like the microfilm so that if in any part of the country's original archives are destroyed, a record of them will exist in some other place.

Originally microfilm efforts in Europe were aimed at providing convenient access to materials for American scholars, but as war threatened, these projects took on a new urgency. After microfilming on the continent had to be abandoned, it continued in England with the aid of Eugene Powers, founder of University Microfilms Inc. Some individuals involved in the scholarly microfilming effort also lent their expertise to the war effort, often in intelligence microfilming.

A vital technical consideration in the use of microfilm for preservation was the durability of the film over time. Writing in 1935, L. Bendrikson reported on his experimentation with a sixty-five-year-old specimen of René Dagon's work inserted into the small pamphlet Dargon published to immortalize his adventure. Bendrikson printed enlargements from the film and declared them to be "not only perfectly legible, but showing clearly all peculiarities and characteristics of the lettering, in spite of its age and the fact that it has been subjected to strong magnification." He predicted that contemporary films made with proper care and adequately preserved would be useful after the year 2000. In addition the National Bureau of Standards had undertaken to determine the stability of motion picture film as a natural extension of its work on paper records. In 1936 B. W. Scribner reported the
preliminary results of an acetate film study which suggested that, if properly made and stored, such film would last as long as good quality paper.20

ACQUISITION BY MICROFILM

Librarians conceived of microfilm as an acquisition tool as well as a preservation technology. Microfilming of important and unique research materials would enable libraries around the world to acquire them at a reasonable cost. Interlibrary loans could be supplied on microfilm as well, saving the cost of shipping, wear and tear on the item, and providing access to materials as needed. Microfilming would allow speedy, low-cost "publication" of highly specialized research, keeping scholars informed in the interim while traditional slow-paced print publication of results took place. In the 1930s librarians and scholars perceived that important contemporary research was not being made available in a timely fashion because the economics of publishing were incompatible with increased specialization, especially in the sciences. Some felt that microfilm publication would actually replace print publication especially for "on demand" small run publishing.

Libraries began microfilming research materials with a vengeance under the assumption that libraries rather than commercial firms would do much of this work thereby merging the acquisition and publication functions.21 Although there is an occasional reference to copyright problems in the microfilm literature, concern about this as a possible barrier to micropublication was minimal, probably because most of the early efforts involved materials not covered by the copyright statutes.

THE SCHOLAR'S WORKSTATION

Another early vision for microfilm technology was its utility as the scholar's amanuenses. In 1936 Binkley wrote glowingly of this possibility:

Just as the scholars of the last generation found in general that it was desirable to be able to use the typewriter, so the scholars of the next generation will find it necessary to use photography ... It offers the possibility that a scholar, by purchasing microcopies from libraries and making his own microcopies of excerpts from books, may build up organized accumulations of data that will resemble a private library in extensiveness, and a note system in its internal organization. Pictorial and textual material can be fitted into the same file. That which scholars in the past have been able to do with the help of an amanuensis, the scholar of the future may be able to accomplish with photographic equipment.22

Some scholars did indeed adopt microfilm as an aid to their personal research. For instance, an expert on Indian languages filmed 16,000 pages of Aztec materials in Mexico.23 During World War II, Vannevar Bush, Director of the Office of Scientific Research and Development, revived the idea of the scholar's workstation when he advanced the notion of a device in which an individual's books, records, and communications would be stored but readily available for consultation.24 This "memex," as he called it, would include a translucent screen for convenient reading of projected material plus "a keyboard, and sets of buttons and levers." Thus Bush sought a convenient personal device, capable of displaying full text and graphics and searchable by sophisticated methods. He conceived of this machine first as an extension of the microfilm reader. The articulation of the need for a scholar's workstation, or at least a low-cost, portable personal microfilm reader, demonstrated a growing recognition of the dilemma posed for the scholarly community in utilizing research materials requiring a reading machine, usually housed only in a library.

LOW COST "HIGH-TECH"

Throughout the early literature there was a continual emphasis on the low cost of the process, and by implication, the products of microphotography. Binkley's monumental study was primarily a study of the relative costs of disseminating information using various technologies, including the printed monograph or journal.25 In his conclusion, he emphasized
that the scholarly community must no
longer depend solely upon the methods
and economics of traditional publishing
but utilize a variety of vehicles for the
preservation and distribution of scholarly
materials. Based on his extensive cost
studies, Binkley found that each technol-
ogy offered different ratios of first-copy
cost to running copy cost; thus, the max-
imum efficiency level of each particular
method could be computed. At one end of
the spectrum was commercial publishing
with its efficiency point of 2,000 copies
and at the other end was microfilm with
an efficiency point ranging between one
and fourteen copies. Binkley and Robbins
elaborated on the efficiency point further
in 1939 with the addition of mathematical
formula for determining the cost of a book
and its utility per copy. Swept up in the
efficiency movement of his time, Binkley
advanced the possibility of publishing ma-
terials not formerly economically justifi-
able even for subsidized academic
presses. He apparently assumed that his
scholarly colleagues would accept these
alternate formats as readily as the printed
page.

Binkley also predicted that low-cost spe-
cialized research materials and alternate
technologies would drive various changes
in the academic world, increasing overall
scholarly efficiency. They would enable a
greater division of labor in the scholarly
workplace just as new technology had al-
lowed the entry of semi-skilled labor into
industry. The work of preserving, collect-
ing, organizing, assembling, and prepar-
ing research materials would pass
through several stages handled by librari-
ans and archivists and others less skilled,
leaving the highly trained professional
scholar to do the work at the top of this
broadened “pyramid of scholarly activ-
ity.” Furthermore, scholarly work would
be more dispersed, no longer dependent
for resources on the largest universities
with their major research libraries.

In addition to emphasizing the effi-
ciency afforded by microfilm technology,
librarians, having entered the new me-
chanical age at last, exulted in the techni-
cal details of microphotography. M. Llew-
ellyn Raney noted in his introduction to
the Richmond Symposium on Micropho-
tography that “A generation familiar with
carburetors, fuselage and static will now
have to hobnob with emulsions and the
like or engage a proxy.” In another arti-
cle he compares microfilm to the Ford as-
sembly line and to the Taylor system of
scientific management. In “Microfilm:
Machine Tool of Management” yet an-
other analogy to modern industrial meth-
ods is used to advance the status of micro-
filming. The author described how
railroad waybills were dispatched by
pneumatic tube for microfilming as freight
trains pulled into a station, microfilmed,
and returned by tube to the other end of
the station so quickly that the train did not
actually have to stop. With the exception
of the typewriter, other gadgets that so
fascinated Americans had bypassed li-
brarians but microphotography allowed
them to join the mainstream. The sheer
volume of technical detail about microfilm
in the library literature attests to the strong
appeal of technology, almost as an end in
itself.

Microfilm may have served as a vehicle
for librarians to join both the technical and
managerial revolutions and for some to
advance their individual careers signifi-
cantly. Among early microfilm activists
are such well-known names as Vernon D.
Tate, editor of the Journal of Documentary
Reproduction and Director of Libraries
at the Massachusetts Institute of Technology
and at the United States Naval Academy;
Frederick Kilgour, founder of OCLC, Inc.;
Ralph Shaw, United States Department of
Agriculture Librarian and Professor at the
Rutgers University Graduate School of Li-
brary Service; Keyes D. Metcalf, Librarian
of Harvard University; and Eugene
Power, founder of University Microfilms.

THE REALITY OF
MICROFORM USE
IN LIBRARIES
The Once and Future Research Library
Since microfilm was conceived of ini-
tially as a scholar’s aid and since academic
libraries remain the chief market for schol-
arly microfilm, it is necessary to consider
the changes that have taken place in re-
search institutions and their libraries in or-
der to analyze the extent to which microfilm technology has fulfilled the vision of its early proponents. The most significant change in higher education during the past fifty years has been growth. Prompted first by the GI bill and later by the baby boom, the 1.5 million student population of 1940 grew to approximately 12.4 million by 1989. In 1940 only about half of today’s colleges and universities existed. The volume of scholarly communication and the size and number of academic libraries have increased dramatically as well.

Wesleyan University Librarian Fremont C. Rider foresaw this tremendous growth. In 1944 he wrote a now classic book, The Scholar and the Future of the Research Library, A Problem and Its Solution, about the problems growth presents. He claimed that the size of research libraries in America had been doubling every sixteen years and submitted that the micro-card, containing the text of books affixed to the back of the corresponding bibliographic reference in the card catalog, would solve the space problem created by this expansion. In a summary article he described the failure of micro-text to date: For—all propaganda to the contrary notwithstanding—it has been disappointing. We have had coming into our research libraries a mere trickle of micro-materials, where our micro-enthusiasts had hoped for, and had expected to have, a flood. And the reasons why this flood has never come is the one just stated: micro-reduction has never yet really integrated itself into library practice. Micromaterials have always been treated (by their makers, by their users—and by librarians) as though they were books. A different sort of books, to be sure, an annoyingly different sort, and so problem-making instead of problem-solving.

Rider grasped the impact of tremendous growth and was one of the first to advance the use of microforms predominately as a space and cost-saving measure. He legiti-

Librarians conceived of microfilm as an acquisition tool as well as a preservation technology.
Nancy E. Gwinn stated:

It is possible that materials first captured on high-quality microform can later be transferred to (optically read) disk. Therefore, the library and archival community can continue to expand preservation microfilming activities without fear that the disk technology, should it prove economically feasible, will render these efforts obsolete. ... As of this writing, microfilming remains the most reliable method of format conversion for paper-based records and is likely to continue as the most economical for storage of less heavily used materials in the foreseeable future.

Scanners, which can digitize the textual image at the same time that it is photographed on preservation-quality microfilm, already exist on the market. The development of scanners with even higher resolutions continues. In a move reminiscent of the beginnings of scholarly micropublishing, libraries themselves are performing the photography, primarily because they do not believe that the commercial sector can adhere to the high quality standards required for this task. Some major research libraries have collectively established nonprofit preservation centers, like the Mid-Atlantic Preservation Center at Bethlehem, Pennsylvania, to carry out this task. Once again the relative low cost and permanency of microfilm are compelling reasons for its use by libraries.

The preservation of newspapers by microfilming has been one of the real success stories of this technology because it offers one simple low-cost solution to the difficulty of handling large bound volumes of newspapers, to the cost of binding and storing them, and to the rapid disintegration of the ground-wood pulp paper on which they are printed. In addition, users seem to experience as much difficulty handling newspapers as they do handling microfilm reels.

**Micropublishing**

Scholarly micropublishing by both profit and nonprofit organizations has been the primary method by which the early expectations of greater access to materials via microfilm have been fulfilled. This industry today is still a relatively small one, represented by a total of 319 or-
TABLE 1
LIBRARY ACQUISITIONS OF MICROFORMS

<table>
<thead>
<tr>
<th>Year</th>
<th>Academic Libraries</th>
<th>% Total Acq</th>
<th>Public Libraries</th>
<th>% Total Acq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-1973</td>
<td>$4,678,302</td>
<td>5.4</td>
<td>$1,709,670</td>
<td>3.3</td>
</tr>
<tr>
<td>1976-1977</td>
<td>7,383,958</td>
<td>2.7</td>
<td>3,422,824</td>
<td>1.9</td>
</tr>
<tr>
<td>1982-1983</td>
<td>9,821,331</td>
<td>2.2</td>
<td>4,237,723</td>
<td>1.6</td>
</tr>
<tr>
<td>1986-1987</td>
<td>19,263,088</td>
<td>2.1</td>
<td>9,820,455</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Percent Change (15 years) 312% - 61% 474% - 45%


TABLE 2
MICROFORM HOLDINGS IN ACADEMIC LIBRARIES (IN MILLIONS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Film Reels</th>
<th>% Other Microform Units</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1968</td>
<td>5.2</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>Fall 1969</td>
<td>6.3</td>
<td>58.0</td>
<td>29</td>
</tr>
<tr>
<td>Fall 1970</td>
<td>9.0</td>
<td>85.0</td>
<td>47</td>
</tr>
<tr>
<td>Fall 1971</td>
<td>9.2</td>
<td>95.2</td>
<td>12</td>
</tr>
<tr>
<td>Fall 1972</td>
<td>10.0</td>
<td>97.0</td>
<td>2</td>
</tr>
<tr>
<td>Fall 1973</td>
<td>10.2</td>
<td>98.0</td>
<td>1</td>
</tr>
</tbody>
</table>

Percent Change (5 years) 96% 118%


dustry, but it has not revolutionized the field. It is rarely used for original publication, and interlibrary loans are only occasionally filled via microfilm. Only University Microfilms Inc. of Ann Arbor, Michigan, has developed true on-demand micropublishing, an activity limited to doctoral dissertations and selected out-of-print titles. The primary reason libraries continue to purchase microforms is to save space. In recent years the federal government has enjoyed economies in publishing and distribution by issuing many government documents on microforms. Academic administrators, who increasingly view libraries as "black holes" into which endless resources can be thrown, have little sympathy for more costly alternatives.

The failure of micropublishing to achieve wider application can be traced to limitations of the technology itself, the way in which it was implemented by the industry, and false conceptions about the economics of publishing. Early expectations were that the scholarly community would either accept the fatiguing clumsy devices necessary for reading microfilm or that a compact, comfortable, and easy-to-use machine would be engineered. Neither of these alternatives ever really developed. Furthermore, the very ease with which text could be captured on microfilm led many entrepreneurs to seek a quick profit by producing poor-quality microfilm with little or no indexing. As recently as 1988 a major delay in the production of federal publications for distribution to depository libraries arose because of poor-quality microfilming by a commercial firm. These firms, especially microfilm "service bureaus" oriented to the relatively short-term, low-use demands of business and industrial microfilm, do not always provide the quality and durability needed by libraries.

The lack of indexing and bibliographic control by commercial microfilming firms forms another barrier to usage. As Fremont Rider maintained in 1944, no matter how economically materials could be acquired by libraries, if they had to expend enormous labor in providing access to information for users, microfilm was not a
bargain. Finally, the initial expectation that original publication of specialized or low-demand materials on microfilm would lower costs was false because such a large proportion of publication costs are generated by factors other than the physical production of the material, such as editorial, advertising, and distribution costs.

**Microfilm Readers**

The literature on microfilm from the earliest days to the present details the quest for suitable reading machines. In 1938 Vernon D. Tate, writing in a report for the National Research Council's Committee on Scientific Aids to Learning, described the many readers under development but lamented that “A summary of the reading machine problem is discouraging. In the very field where greatest benefits to microphotography from special equipment could accrue, progress has been painfully slow. Little selection is now possible.” Interestingly, Tate had come to a somewhat different conclusion about the problem by 1950 when he wrote again on the subject in *American Documentation*:

Over the years there have been objections and comments on the use of microfilm, some of which were trivial and others serious. . . . Eye-strain used to be a spectre that caused much shaking of heads and viewing with alarm. Scientists, many of whom spent considerable time peering into a microscope, were never unduly worried but a good many others were. . . . Anyone who will suffer (and the word is selected advisedly) a television program need have no fear of eye-strain from reading microfilm. . . . The cost of reading machines is a common complaint. A reading machine suitable for 35mm film can still be had for about the cost of a portable typewriter, and a recently developed French machine announced and shown in Paris this summer costs about the equivalent of $37.50 in France. . . .

In 1960 the Council on Library Resources commissioned a study entitled *Reading Devices for Micro-Images* as part of its State of the Library Art series. The authors decried the lack of objective data on almost every topic relating to microform readers—eye-strain, cost, enlargement ratios, etc.—and noted the lag in reader design as compared to camera design. They attributed this lag to the dominance of the more lucrative market in business and industry, the conflicting demands of the library market, and the misguided quest for a universal library machine that produced a high-quality image, had the ability to read all film resolutions, and had printing capability. Efforts to develop an effective microfilm reader were later funded by the Council on Library Resources itself, but came to naught.

Two decades later proponents of microforms in libraries still lament the limitations of portable readers stating “These shortcomings of portable readers are still with us, as anyone who has recently struggled with small, inexpensive viewing devices can testify. Users are extremely sensitive to image sharpness, and unsatisfactory resolution rivals mutilated issues as a cause of migraine in otherwise contented library patrons.” The industrial reader market emphasizes quick successive “look-ups” for small pieces of discrete information by experienced operators while the library market emphasizes simple controls, good resolution, and constant frame focus.

**MICROFILM AND ELECTRONIC RESOURCES**

Some tentative comparisons and conclusions can be drawn about the relevance of the history of microfilm in libraries to the planning for and adoption of electronic resources today. First, the microfilm experience in libraries and the experience of our culture in general indicate that new technologies seldom replace old ones. Just as television has not eliminated radio and the microwave oven merely supplements the electric or gas range, so microfilm has not done away with the book and neither will electronic text. Instead there will be expanded opportunities, greater diversity, and a more complex environment.

Another lesson is that there are definite limits to the inconvenience or discomfort scholars and researchers will tolerate in their use of materials no matter what the library economics of the situation are. Conversely, industrial workers seldom have any power to affect the quality of technology they use. Furthermore, im-
proved technology to eliminate inconveniences is not always forthcoming, for reasons often beyond the profession’s control. In the case of microfilm, librarians were so entranced with the technology itself, and the opportunities it offered to provide cost-effective improved services, that they failed to conceptualize and articulate clearly to the nascent microfilm industry the need for quality work, indexing, bibliographic control, and above all user-friendly microfilm readers.

There are definite limits to the inconvenience or discomfort scholars and researchers will tolerate in their use of materials no matter what the library economics of the situation are. Indeed one of the most interesting analogies between microfilm and computer technology is the question of the reading device itself. To what extent is it reasonable to expect people to read extensively from computer screens anymore than from microfilm readers? Up to this point, public use of computers in libraries has been predominantly for indexes, not for full-text publications. By the very nature of index use, a quick perusal of several screens, frequently accompanied by a printout to take away, suffices for most users. Once lengthy documents, even long journal articles, are published routinely in electronic form, the fatigue or inconvenience of reading them on a screen may approach that of microfilm. (Until the recent advances in high resolution monitors, microfilm was much more satisfactory than computer screens for the display of drawings, diacritics, photographs, and graphics.) The alternative of printing out lengthy documents gives rise to other inconveniences and costs since pricing schedules by some electronic publishers include additional charges for printing the text. The prevailing assumption seems to be that the high resolution page-size monitors now becoming available on high-end workstations will provide the comfort level needed for extended text reading as well. If so, will researchers be able to afford this type of computer at home and in the office or will they only be available in libraries and computer centers?

In 1982 Meckler suggested that computer technology would solve many of the problems that microfilm was never able to overcome. He asserted that computer marketing “was carefully tailored to the specialized needs of each type of potential user” whereas microfilm was introduced by naive librarians who assumed that the technology would be readily accepted by users based on its obvious cost-benefit advantages. However, the market may not be sufficiently large to support commercial efforts in electronic information devoted exclusively to the needs of libraries and scholarly users. Electronic products are being designed to go directly to high-volume business-oriented “end-users” operating microcomputers in their offices and paying directly for information. Libraries must be prepared to pay dearly and continuously for products that meet the needs of their users well or to accept generic products with their limitations. This choice is similar to that which confronts consumers of microfilm technology. A revolution in patterns of scholarly communication will be necessary before the electronic journal can begin to reduce the costs associated with research publications. Issues of copyright, tenure requirements, journal proliferation, the refereeing process, and the role of the for-profit sector must be addressed.

Bibliographic and indexing problems limited the effectiveness of microfilm. The electronic revolution contains their reverse—information overload. Low-cost computer mass storage and the full-text indexing capabilities of sophisticated software can generate so many data and text access points that the user is unable to locate appropriate material quickly. Too much access is as dysfunctional as too little. Librarians are well aware of this problem and must request that vendors devote resources to effective retrieval. It cannot be assumed that they will do so.

A related issue is whether electronic full-text products will replace microfilm. One of the major scholarly microfilm pub-
lishers, University Microfilm Inc., is rapidly diversifying into the electronic media. UMI offers its premiere print index, *Dissertation Abstracts*, on CD-ROM as well as an entire system of business periodicals in full text. This company, with its long history in the microfilm business, is particularly sensitive to the equipment interfaces and has worked extensively on the development of a high-resolution page-size monitor for reading electronic text. Conversely, Mark R. Yerburgh argues that microform will not become extinct because it provides a uniquely cost-effective format in which libraries have already invested heavily. He predicts that diminished acquisitions budgets and increased efforts by librarians to eliminate the "curse of user (lack of) acceptance" will enable microfilm to survive. The latter effort seems unlikely to be successful, after some fifty years of trying.

However, the realities of organizational competitiveness lend some support to the view that microfilm will survive. The quality of a research library is still measured primarily by the size of its holdings. Microfilm technology was embraced by librarians as the exciting future that would enhance their status and offer users expanded access to research materials at controlled costs. Although this technology has played a significant role in enabling libraries to cope with the growth of materials, it has not revolutionized scholarly activity. Despite its limitations, librarians in the 1930s and 1940s probably had no other alternative but to adopt microfilm given the exponential growth of literature, their finite resources for acquiring and storing publications, and their limited impact on the market. It seems equally unlikely that contemporary librarians will be able to influence the overall direction of computer technology; however, they may be able to avoid costly errors by learning the limitations of the technology and planning for a multiplicity of modes of access and formats.

Issues other than these political ones affect the decision to treat electronic resources as permanent parts of the collection. Magnetic and optical media offer even greater space savings than microfilm, although there is some question about the salience of space economy as a factor in adoption of microfilm. However, at the present time uncertainty about the shelf life of magnetic and optical media is one of the key factors in the preference for microfilm in preservation. Even if the media are permanent, will appropriate software and hardware be retained indefinitely to read these materials? Will electronic resources have to be converted each time the technology changes? Any library presently retaining readers for a small quantity of some microformat is familiar with this problem already.

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REFERENCES AND NOTES


4. The articles in the 1933-1935 volume of Index to Library Literature were listed under the heading “Photographic reproduction and projection” with subdivisions for bibliography, copyright, and newspapers. “Photostat” had disappeared as a separate heading. In the 1936-1939 volume the literature had been subdivided further with additional separate sections for apparatus and processes, care and conservation of films, exhibits, services, study and teaching, and terminology. In the 1940-1942 volume there were twenty pages of references.

5. The 1985 volume of Library Literature indexed seventy-three articles under the heading “Microforms and micrographics” with subdivisions for administration, aperture cards, bibliography, care and restoration, cataloging, equipment and supplies, microfiche, microfilms, policy statements, reading machines, and reviews. Other articles are contained under seventeen headings that use “Microform reproductions” as a subdivision of another topic and still more articles appear under headings for “Computer output microfilming” and “Photographic reproduction.”


12. In 1970 American Documentation changed its name to the Journal of the American Society for Information Science, the new name of its parent organization. Thus this journal links microfilm technology to the present computerized information age.


21. Accounts in the *Journal of Documentary Reproduction* and elsewhere describe microfilming of the National Recovery Administration hearings, *The New York Times* from 1914–1919, United States Census Bureau population records from 1970 to date, books printed in English up to 1550 (and held by British libraries), 18th century periodicals, materials relating to the history of the American South, and many other projects.


26. Ibid., p.183.


34. Although microcards were NOT generally affixed to catalog cards, they were heavily used by agencies like the Atomic Energy Commission which had the Microcard Corporation produce 20 million between 1952 and 1962. By the 1960s microfiche had replaced microcards due to the economy of producing additional copies on demand and the ease of making enlargements.


43. Ibid., p.89.

Letters

To the Editor:

We are writing with regard to an article which appeared in the January 1990 issue of College & Research Libraries 51:46-54. The article, by Robin B. Devin and Martha Kellogg, discusses the use of thesis and journal article citations as guidelines for setting the acquisitions budget for serials and monographs. While Devin’s and Kellogg’s discussion accurately reflects citation patterns in theses and journal articles, we do not think that it accounts for actual use patterns in the typical research library. Additionally, the cost of providing information out of monographs is not necessarily equivalent to the cost of providing information out of journals.

There are two areas in addition to citation patterns which we think need to be examined: use of library materials for preliminary research, and use of library materials by undergraduates. Theses, dissertations, journal articles, and conference papers are typically the end products of an extensive research process, involving preliminary studies of the literature, data collection, discussion of the data with colleagues involved in similar research, and interpretation of the data. As a result, this literature tends not to account for the full range of library materials used in the process of research, since it cites only those materials which have a more or less direct relationship to the final topic under discussion. Moreover, the process of designing an initial hypothesis often requires extensive but uncited use of secondary and tertiary literature to determine the appropriate arguments, experiments, or techniques of data collection.

Additionally, undergraduates also make extensive use of the typical university library. As indicated by Gloriana St. Clair and Rose Mary Magrill in their research note (C&RL News 51:25-28 (1990)), the research needs of undergraduates are rarely sophisticated enough to require extensive use of the primary literature, monographs playing a much more significant role in filling their information needs. Thus, even assuming equivalency of costs for serial and monographic information, factors such as the undergraduate enrollment and use of materials for the process of research need to be included in the calculation.

Devin and Kellogg suggest that "factors such as collection intensity, number of students and faculty in the area, circulation statistics, and average cost per volume should have already been taken into consideration when the original monograph (or serial) allocation was made" (p.53), and that application of their ratio formula can translate this figure into an appropriate dollar amount for the corresponding serial (or monograph) budget. This argument is at best circular, as it fails to include these factors in determining the ratio and requires complex reiteration to obtain meaningful figures.

While citation patterns reflect to some extent the proportion of serials to monographs used for advanced research, they do not determine the proportion of the prices for these two types of library material. This distinction is particularly important in fields like engineering or physics, where there is extensive use of conference proceedings (usually paid for out of the monograph portion of the budget). Moreover, citations to journal articles almost always refer to one article per volume (less than four percent of the total volume contents), while citations to monographs may refer to either the whole volume or a single section. The choice between acquisition or document delivery of a particular item depends on the economics of use. Both the price and the number of expected uses of a particular volume need to be taken into account. In this regard, aggregate journal citation data fail to distinguish between heavily used core titles with comparatively low costs per use and less frequently used specialized titles which can have comparatively high costs per use. In attempting to develop the collection optimally, decisions regarding these specialized titles can often be the most difficult. Similar problems also apply to different classes of monographs.

As in other applications of citation analysis, citation data alone provide only a partial indicator of whatever issues are under discussion. They seldom provide the simple or direct answer desired; rather, they are one among many sources of data contributing to the complete study.

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BOOK REVIEWS

Editor's note: Book reviews will continue to be an integral part of College & Research Libraries. Newly appointed book review editors Stephen J. Lehmann and Robert Walther comment on the importance of reviews and solicit participation in the process.—GSTC.

As the incoming editors of C&RL's book review section, we would like to present to the ACRL membership an explanation of what we intend and what you can expect. At the core of our activity is the conviction that the reviews we publish can offer academic librarians a forum for significant and challenging ideas and that the book review is a medium through which authors, reviewers, and readers participate in a process of intellectual engagement, a process critical to the vitality and even integrity of our profession.

Readers can expect first of all that the author's intentions will be conveyed as clearly as possible. This not only satisfies basic standards of intellectual honesty and professional responsibility, but also states the terms of the dialogue that the work initiates and to which the review is a first response. Only when authors have been taken seriously on their own terms can the reviewer position books appropriately in larger contexts, whether institutional, intellectual, historical, or political.

Much of our focus will be directed toward these larger contexts. Ours is one of very few journals directed to the whole of academic librarianship, and we have a serious obligation to review books on cataloging, collection development, reference, and other aspects of professional activity from the perspective of academic and research libraries. However, we also need to widen the frame and deepen the perspective in which we see ourselves and our profession by considering works on higher education, the institution of the academy, publishing, issues of gender and race, scholarship, technology, management, and organizational behavior. The ongoing challenge will be to integrate these kinds of issues into our day-to-day professional concerns.

Inclusiveness also characterizes the pool of reviewers we hope to attract. In addition to the participation of librarians from university and research libraries, we need reviewers from small colleges and, of course, the perspectives of women and minorities. Through the newsletters of ACRL's Women's Studies and College Libraries Sections, we have already put out a call for reviewers, and we would like to extend this invitation to all groups within the academic and research library community. And while reviews are recognized as an opportunity for younger librarians to write and publish, we also value the knowledge and seasoned talents of experienced professionals.

Too often book reviews are relegated to the periphery of scholarly communication, where they are perceived only as the "white noise" of academic discourse. We intend to do everything we can to ensure that this is not the case in our field and in this journal, and we look forward to your participation, whether as writers or readers, in this effort.

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