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Editorial

Mysteries, Wonders, and Beauties

This is my last editorial. Gloriana St. Clair assumes the mantle of editor with the July issue. I wish her every success.

A last editorial may somehow resemble a last chance. Fortunately I have had many chances. This last one, however, permits a moment to reflect on two familiar themes—people and ideas. Together, interacting, they represent what I view as the core purpose of libraries. Learning, problem solving, personal growth, and knowledge are but a few of the possible outcomes. From this start we may hope to further other higher-level social and cultural goals.

Academic librarianship has made tremendous strides in the past few decades. The degree of our professional maturity has grown and our profession has become more and more robust. Our ability to serve has broadened and deepened. Should we be proud? Most certainly! Should we be satisfied? At moments, yes! Librarians have made outstanding progress in bringing the dynamic quality of computers and communication technologies to bear on how we process items and how we transport them. Nevertheless, librarians have a static rather than a dynamic orientation to the content of items.

The warehouse or collection-based paradigm still holds sway. The centerpiece of this paradigm is the provision of items shelved locally. A new access-based paradigm is emerging and gaining many adherents. Its centerpiece is the provision of items wherever they may be located. What happens between the user and the content of items is beyond the boundary of either paradigm.

As academic librarians we have defined our boundaries with considerable clarity. They have not been forced upon us. Indeed, all but a few librarians seem to hold to a value free or zero value-added philosophy toward the contents of what we own or get. We have constructed this reality. It is ingrained in our standards and our professional ethics. These choices have inhibited the development of our profession.

What happens between the user and the content of items, or between “people and ideas,” should be the central focus of academic librarianship. In this sense I support a mysteries, wonders, and beauties paradigm. Where our profession now ends up is where I believe we should start. A line of popular lyrics comes to mind, “One foot over the line sweet Jesus. One foot over the line.” Someday I would like to see us take that step. This does not mean that we should set aside traditional practices.

Frank Lloyd Wright once observed, “Please do not build to the size of a man, but build for the size of his spirit.” In architecture our libraries may sometimes approximate this goal but in our professional philosophy and in our daily practices the spirit is often measured by inches on the shelf. The mysteries, wonders, and beauties created by people and read by others are beyond what we set out to reach.

To the authors who have created and submitted their ideas for publication in College & Research Libraries—thank you! To the members of the Editorial Board (Brian Alley, Sheila Creth, Miriam Drake, Stephen Gerhardt, Phyllis Jaynes, David Laird, Frederick Lynden, Deanna Marcum, Paul Metz, Brian Nielsen, Jordan Scepanski, and Nancy Van House)
who refereed over six hundred manuscripts, to the Assistant Editors (Deborah Jakubs and Larry Oberg), and to the Research Notes Editor (Gary Lawrence) and the Book Review Editor (William Jones)—my heartfelt thanks! To the readers—thank you for allowing me and other past editors the freedom to express ourselves openly. First Amendment rights are critical to our society. It is a great profession that upholds these values.

CHARLES MARTELL

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I have used this work myself in my researches on science in Islam. As is well-known, the Holy Quran contains some 740 verses—nearly 1/8th of the Holy book—which exhorts Muslims to reflect on Allah's creation. This played an important role in the rise of science within Islam which played an important role towards the continuation of scientific spirit up to the 16th century."

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- This is a complete reference on the Islamic faith containing the complete text of the Quran. The index, concordance and bibliography assist readers in understanding Islamic practices and their cultural and historic roots.
<table>
<thead>
<tr>
<th>PT. 5</th>
<th>AL-NISA</th>
<th>CH. 4</th>
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<tbody>
<tr>
<td>122. These are they whose abode shall be Hell and they shall find no way of escape from it.</td>
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<tr>
<td>123. But as to those who believe and do good works, We will admit them into gardens, beneath which streams flow, abiding therein for ever. It is Allah's unfailing promise; and who can be more truthful than Allah in word?</td>
<td></td>
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<td>124. It shall not be according to your desire, nor according to the desires of the People of the Book. Whoso does evil shall be rewarded for it; and he shall find for himself no friend or helper beside Allah.</td>
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<td>125. But whoso does good works, whether male or female, and is a believer, such shall enter heaven, and shall not be wronged even as much as the little hollow in the back of a date-stone.</td>
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**588. Important Words:**

<table>
<thead>
<tr>
<th>Arabic</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>مَنْ عَدَى مَعَ اللَّهِ مَنْ كَانَ صَفِّيًا</td>
<td>One who is pure from God's standpoint.</td>
</tr>
<tr>
<td>يَقْطَعُ الْأَرْضَ مَثْعَابًا</td>
<td>One who severs the land (i.e., brings about the destruction of the earth).</td>
</tr>
</tbody>
</table>

**590. Commentary:**

The verse is important inasmuch as it clearly traces the roots of key words and expressions to their historic and cultural origins. The expression "مَنْ عَدَى مَعَ اللَّهِ مَنْ كَانَ صَفِّيًا" (One who is pure from God's standpoint) is crucial in understanding the concept of purity in Islamic jurisprudence. The verse also highlights the importance of adhering to the will of God, which is the only true guidance for humanity.

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Gary D. Byrd

The recent dramatic increases in both the numbers and prices of scholarly journals are evidence of a distorted economic marketplace for scholarly information. They can also be viewed as evidence of an impending economic "commons" tragedy for this nation's research libraries. The general economic principles underlying this tragedy were popularized in a nontechnical and very influential 1968 essay by Garrett Hardin called "The Tragedy of the Commons." The strategies needed to manage our research library commons effectively will require a fundamental reshaping of the present system of scholarly communication. The leadership for making the necessary changes must come from the research library community.

The venerable, centuries-old system of scholarly publishing and collection building in research libraries is in very real danger of collapse. Dramatic increases in both the numbers and prices of scholarly journals, especially scientific scholarly journals, are the most obvious manifestation of this impending crisis. For the past two decades journal prices in the United States have outpaced general inflation by rates that would be totally unacceptable in other sectors of our economy. In 1989, for example, journal prices increased by more than two times the Consumer Price Index (CPI) and, as recently as 1987, the rate of price inflation was more than five times the CPI. Not only do prices increase dramatically, but the number of new journals also continues to "proliferate," as Herb White puts it, "in total disregard of all economic indicators." "One publisher," he notes, "reported that over a period of time he had started 180 new journals and canceled five." To date, none of the attempts by research libraries to cope with these dual crises of information glut and spiraling price inflation have been very successful. In fact, the most common strategies, that is, pleading for a larger acquisitions budget, or transferring dollars from monographs to the serials budget, have actually aggravated the problem by accommodating or hiding it rather than dealing with underlying causes. Even worse, argues White, these tactics destroy "any remaining vestige of a suggestion that library materials allocations as between monographs and serials [follow] any sort of professionally developed library plan." Clearly, current distortions in the scholarly information marketplace threaten the ability of research libraries to continue to carry out their mission of collecting, preserving, and providing access to the scholarly rec-

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Gary D. Byrd is Assistant Director for Finance, Planning, and Research at the Health Sciences Library, University of North Carolina, Chapel Hill, NC 27599.

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ord. Since research libraries are central to our current system of scholarly communication, a threat to their basic mission must be considered a threat to scholarly communication in general.

A puzzling and troubling aspect of this problem for research librarians has been the fact that until very recently (and to a large extent, even today) the scholars and publishers, who create, market, and ultimately consume journals and other records of scholarship, have seemed to ignore or to be unaware of the problems this explosion in scholarly journal numbers and prices is causing for libraries. Herb White suggests that this is because research libraries find themselves in a sort of never-never land between the "true vendor/client relationship" of scholarly publishers and the scholars who write for and then read their publications. Thus, "publishers don't treat us as customers, they treat us as purchasing agents, who simply perform the routine tasks we are told to perform." And because scholars, who do not directly experience the price increases, show "no objection to any of [the publishers' pricing] tactics ..., [they] are furious not with the journal publishers but with us [when we] ... hesitantly, apologetically ... apprise them of this problem."4

The economic relationship among the producers, consumers, and distributors of scholarly publications is central to understanding both the causes of, and the potential solutions to, this impending breakdown in our system of scholarly communication through research libraries. The sections that follow review key papers and monographs dealing with the microeconomic principles that underlie the relationship among scholars, publishers, and research libraries.

The theories of supply and demand and the way these affect the exchange of goods and services among the three direct participants in the scholarly communication system are important for an understanding of the individual components of the system. But I will argue that they must be seen as part of a much more basic and fundamental economic principle. This principle, usually called the "Tragedy of the Commons," was vividly described by Garrett Hardin in his 1968 essay by that title in Science. 5 The essay deals primarily with the way cultural norms of individual independence and freedom of action endanger our common environmental resources. However, the "tragedy" Hardin describes has much wider economic implications for the way societies manage all shared public resources, including the resources in our research libraries. Briefly, Hardin describes how shared public resources (the "commons") may eventually be destroyed when individuals are allowed unrestrained freedom to exploit them for personal gain.

The current distortions in the scholarly information marketplace are evidence of a commons tragedy centering around our nation's research libraries, which share many of the characteristics of Hardin's commons. But, before describing this tragedy in more detail, we need to review the characteristics of scholarly information resources and the microeconomic relationships among publishers, research libraries, and scholars.

**THE NATURE OF SCHOLARLY INFORMATION**

One essential key to understanding these economic relationships is the resource that is produced and consumed, that is, scholarly information. When regarded as a commodity, scholarly information, or just "information" or "knowledge" (synonyms used by many who write about these issues) has many qualities that distinguish it from tangible products, like automobiles or wheat, on which classic economic theories are based. Harlan Cleveland posits the following list of unusual economic characteristics of in-
formation: it is expandable, compressible, substitutable, transportable, diffusive, and sharable. The last of these characteristics, he says, the propensity for this sharing resource to leak, is "eroding the doctrine that knowledge can be owned, exchanged, and monopolized the way 'real' resources can." Pat Molholt expands on Cleveland's list with the following additional characteristics of information.

We are dealing with:

- a commodity that does not depreciate, with all this implies for financing, tax structures, and accounting principles;
- a resource that is freely available unless artificially impounded; whereas economic theories focus on scarcity;
- an intangible that can render people jobless and force whole organizations to restructure in order to survive;
- a resource that thrives on reuse, repackaging, recycling; one that has been growing exponentially and under completely unconventional rules;
- a resource that has, as an important aspect of its use, something uncontrollable and unpredictable—serendipity.

Robert Taylor describes four other important characteristics of scholarly information that can help us understand the ways publishers, scholars, and research libraries produce and exchange this unique economic good: (1) "A person cannot know before seeing (hearing) . . . information, whether or not it is of use." (2) Knowledge "about a chunk of information . . . in some ways decreases the need for that chunk because one may already possess a part of the information." (3) "Many people can know the same facts, or own the same chunk of information without depriving others." And (4) "we tend to overproduce and to overconsume information."

Together, these characteristics of scholarly information show it to be a poor example of the pure private goods that economists use to model the interaction of buyers and sellers in a competitive market. In a perfectly competitive market, many rival firms produce and sell standardized goods or services at quantities and prices determined by the total supply of, and total demand for, those goods or services. Perfect information about the quantity and quality of those goods and services is available to all producers and consumers. Finally, and most importantly for an understanding of the scholarly information "marketplace," the sale and purchase of goods and services in a competitive market causes no costs or benefits to third parties not participating directly in the sale or purchase transactions. (In economic jargon, there are no "externalities" to these transactions.)

On the other hand, scholarly information does share many, but not all, of the characteristics of public or social goods. Social goods are often, but not always, produced and provided to consumers by government or other public agencies, or by employees of these agencies. More importantly, they are goods that cannot easily be excluded from individuals who fail to pay for the service or benefit received. This "free rider" effect brings to mind Cleveland's observation that information has a propensity to "leak." Pure public goods can provide benefits simultaneously to more than one individual (often whole populations) without any additional cost. (Again, in technical economic jargon, the production of the good for the benefit of any one person results in positive externalities for all persons in a society and zero marginal costs for those extra benefits.)

Fritz Machlup argues that knowledge is, in fact, a public or social good "of the purest type. . . . There may be a cost of the transfer of knowledge, of teaching it and learning it, but there is no additional cost of using it once it has been acquired." Lawrence White notes that because the marginal cost to disseminate information "is frequently very low or zero, . . . we ought to be encouraging . . . [its] maximum distribution . . . once it is in existence." But, maximum free public distribution "may well interfere with the long run considerations of producing a flow of new information . . . [since] people are not going to invest resources in producing information unless they think they are going to get a net gain from it." This economic conflict between the private, marketplace incentives for the production of
new information and the public, social incentives to subsidize wide dissemination of existing information is one of the keys to the tragedy of the commons explored below. While basically a public or social good that is widely available at little or no cost, scholarly information also has characteristics that make its production and some forms of distribution, like journals, financially attractive to market for commercial profit. This leads directly to the question of economic value.

THE VALUE OF SCHOLARLY INFORMATION

Defining an accurate economic value for scholarly information is complicated by uncertainty. In contrast to most commodities, like coffee, for which "people usually have a pretty good idea of how much [more]. . . would contribute to their happiness," notes Machlup, "we cannot know what a piece of knowledge may be worth to us before we know what it is."12 (Remember Taylor's observation that it is impossible to know about information before seeing or hearing it, and that, ironically, knowledge about a chunk of information decreases our need for it.)

"Because scholars can never be sure what piece of information may prove useful . . . they have a strong incentive to encourage publishers to publish everything which might be useful and to encourage research libraries to buy everything published."

In his 1970 dissertation on the scientific journal market, Sanford Berg noted that scholars "cannot be completely certain about which items in [a] . . . stock of scientific information will be needed." Thus, "the result is a tendency to be complete rather than selective when organizing a reference library."13 Because scholars can never be sure what piece of information may prove useful (and because serendipity often leads to unexpectedly useful information), they have a strong incentive to encourage publishers to publish everything which might be useful and to encourage research libraries to buy everything published.

Another more technical aspect of this uncertainty characteristic of scholarly information has been described more recently by Machlup14 and Aatto Repo.15 They argue that the failure to distinguish between the "use value" (or "value-in-use") and the "exchange value" of scholarly information leads to inaccurate estimates of value. Use value includes the qualitative measures of how successfully individuals use the content of particular information products to accomplish information tasks. Exchange value includes economic measures of the marketplace where individuals and organizations produce, store, and exchange information products and services. Exchange values can be measured using fairly objective empirical data, while use value can only be measured subjectively by individuals, based on what they expect or perceive. The problem in much of the literature on the economics of information, says Repo, is that researchers "skip from exchange values to value-in-use . . . without realizing the implications of the change."16

Ironically, Sanford Berg's study, which accurately describes this uncertainty characteristic of scientific information,17 has been strongly criticized by Machlup for failing to make the distinction between use value and exchange value. Machlup argues that Berg and others are "overzealous" in their attempts to overcome the uncertain value of information by trying to quantify or objectively measure the total benefits or value to society of scholarly information. They do this by substituting projected individual estimated benefits (use value) for actual measures of the information marketplace (exchange value). "Most economists have long since abandoned as hopeless and irrelevant the aim of measuring the total utility or total benefits . . . of a class of good or service," says Machlup, because "demand. . . for any one good or service is [based on]. . . the assumption that the prices of all other goods and services are given and un-
changed, and hence the benefits which buyers of a particular good obtain... would depend on millions of other prices... This argument, though rather technical and complex, is also another key to the commons tragedy of research libraries. When scholars, publishers, and librarians speak about the 'value of scholarly information,' they usually mean the perceived or expected use values to individuals of particular information products, rather than the exchange value of those products in the marketplace. But when these necessarily subjective, qualitative measures are used to justify the overall economic importance of scholarly information, value estimates (not restrained by market realities) become inflated.

When scholars are free to create new information without considering the economic market for that information, and, at the same time, are free to use published information at little or no cost, they are more likely to overestimate its value. Similarly, when publishers and librarians hear from the scholarly community only about the high actual or potential use value of this information and see continuing generous public financial support for its distribution and acquisition, their natural tendency is to distribute and acquire as much as possible. This surely demonstrates Taylor's last characteristic of scholarly information, its overproduction and overconsumption. The next question, then, is exactly how, in microeconomic terms, publishers, research libraries, and scholars interact with each other in the scholarly information marketplace.

THE SCHOLARLY INFORMATION MARKETPLACE

The public good and uncertainty characteristics of scholarly information lead to distortions in the ideal competitive marketplace that economists use to predict supply, demand, and prices of goods and services. In a competitive market one would expect the total production and prices of relatively uniform scholarly journals to be balanced by the limited demand for individual journal titles. Instead, this marketplace is distorted by the dual and differential pricing strategies of scholarly publishers. Most publishers now charge one subscription rate to individuals and another substantially higher rate to libraries. And many European publishers charge substantially higher prices to U.S. libraries than to those in the rest of the world. Economists call these practices price discrimination, and define it more precisely as 'selling the same product to different buyers at different prices, where the difference in price does not reflect cost differences in producing or selling the product.'

Price discrimination can only take place in noncompetitive markets (such as monopolies or competitive monopolies) where sellers can separate potential buyers into submarkets that respond differently to higher prices. Each submarket has a different 'elasticity of demand' (or the product has different 'price elasticities' in each submarket). Price elasticity is mathematically expressed as the percentage change in quantity demanded divided by the percentage change in the product price. It measures the responsiveness of buyers to changes in price. Highly elastic markets are those where higher prices quickly reduce demand or where lower prices quickly increase demand. Inelastic markets are those where price changes have little effect on demand.

Current laws provide for the free transfer of copyright ownership from the scholars who write journal articles to the publishers who print, market, and distribute them. This effectively removes any marketplace incentives from the scholarly community. It also provides scholarly journal publishers with enough monopoly power that they can divide the market into separate submarkets with different price elasticities. Margaret Quinlin, an editor at Aspen Publishers, recently wrote a special report for the Society for Scholarly Publishing (SSP), in which she states clearly how important publishers feel price elasticity is in setting prices for their publications. "Price elasticity has a direct bearing on the pricing of publications," she says. "The publisher who lowers the price of... [a specialized publication with a 'price-inelastic demand schedule'] will
not increase [sales] volume significantly. ... In short, total revenues will be reduced and circulation will not be increased."21

Individual demand for scholarly journals is more elastic than library demand. As early as 1977, Fritz Machlup pointed out the extent to which this is true. "Publishers ... have given up the idea of selling to individual buyers [only]," he said, "and are determined to charge what the traffic will bear in the supposed inelastic range of the demand curve—the research libraries."22

In meetings with librarians, publishers argue that price increases to libraries result from overall increases in the fixed and variable costs of publishing,23 the fluctuating value of the dollar abroad, which makes it necessary to compensate for expectations of a weakened dollar by setting higher prices in the U.S. market,24 and the many new and increasingly narrow scientific and scholarly specializations, which force fixed costs to be distributed over a narrower base.25 Publishers also argue that, although the marginal costs of producing journals for these different markets are about the same, the value or marginal benefit of the journal to each submarket is different enough to justify a higher price to research libraries. They reason that in libraries journals will be used by many readers, but the individual subscriber's copy will only benefit one, or, at most, a few.

The magnitude of recent price increases and the size of the price differentials, however, have convinced most research librarians that "publisher profit is the driving force behind the recent escalation of serial prices,"26 and that "publishers of academic journals have sufficient monopoly power to engage in price discrimination."27 In a recent editorial, James Thompson singled out for particular criticism those "few publishers, owned and directed by large multinational holding companies," which openly seek monopoly power. He quotes Robert Maxwell, the owner of the Pergamon journals, who outlined his business strategy thus: "If Pergamon could win the trust of scientists it could establish the standard journal in each specialization, and that would give it a series of publishing monopolies ... scientists are not generally as price-conscious as other professionals, mainly because they are not spending their own money."28

At a fall 1988 seminar on the future of scholarly journals sponsored by the Society for Scholarly Publishing (SSP); librarians, publishers, and scholars exchanged views on the present and future economic viability of the journal system as it presently exists. Mr. Maxwell's assessment of the price-consciousness of scholar/scientists is corroborated in large part by the remarks of Robert Peet, a biologist who participated in the SSP seminar. "As a scholar," said Peet, "I am reasonably happy with the current status of scholarly journals." He did acknowledge the existence of both a "library problem" and a "publisher problem" caused by the increasing "store of human knowledge" and the exponential growth in the number of researchers worldwide and their resulting publications. But he argued for "one fundamental principle ... [to] constrain all solutions to these problems. That is, there must be free access for all scholars to journal articles. We will tolerate, grudgingly, travel as a necessity. But, we will not tolerate a strict pay-for-use system."29 To the extent that this view is held by most scholars, any hope that a competitive, free-market, vendor/consumer relationship can be established between publishers and scholars is probably unrealistic.

In summary then, the scholarly information marketplace is characterized by producers (academic scholars) who turn over gratis, through copyright transfer, the ownership of their products (scholarly journal articles) to sellers (scholarly publishers), who in turn earn a profit, not by selling to the ultimate consumers (again academic scholars), but to publicly supported agencies (research libraries) acting on behalf of the entire scholarly community to organize, store, and provide free or low-cost access to these products. As Herb White puts it, "natural selection and the pressures of the marketplace simply do not apply here."30
The product exchanged in this marketplace, scholarly information, has many characteristics which make it quite different from free-market goods and services. Most notably, it easily “leaks,” providing extra free or low-cost benefits to the scholarly community at large; and yet wide public distribution will in the long run discourage the primary mechanism now available for its distribution (scholarly publishing). Finally, the economic value of this product is distorted because its expected or perceived use value for individual consumers is confused with exchange value in the scholarly information marketplace. How has this economic situation become so dangerously distorted when it is in our collective best interest to keep it healthy? The principle underlying the “tragedy of the commons” may provide a key to the answer.

THE TRAGEDY OF THE COMMONS

The central story and dilemma of Garrett Hardin’s 1968 essay in *Science* can be briefly summarized as follows. All the herdsmen of an agrarian community use a free open pasture or “commons” to graze their cattle. This arrangement works reasonably well for centuries because wars, disease, etc. keep the number of herdsmen and their cattle well below the capacity of the land. Finally, however, a day of reckoning comes when the pasture is full and the “inherent logic of the commons remorselessly generates tragedy.”

Each economically “rational” herdsman seeks to get the most benefit possible from the commons and asks himself, “What value will I gain or lose by adding one more animal to my herd?” The positive value will equal all the proceeds from the eventual sale of the additional animal. The negative value will equal the overgrazing damage to the commons caused by one more cow. But, since this negative value is shared by all the herdsmen, the rational herdsman concludes that his share of this damage is much smaller than the profit one more cow will generate. The tragedy inevitably follows because each and every rational herdsman sharing the commons reaches the same conclusion.

The end of Hardin’s little drama is worth quoting verbatim:

> Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.31

Hardin goes on to point out that problems of pollution are examples of the tragedy of the commons in a reverse way. Instead of exploiting and thereby, depleting or taking something out of the commons, rational users decide to put in damaging things like sewage, toxic wastes, noise, or unpleasant advertising signs.32

> “Perhaps most sadly of all, we research librarians, who are charged with managing this commons, also encourage the exploitation and pollution of the research library commons, and compound the tragedy, by insisting on comprehensive collections and unlimited free access for any and all potential users.”

Unfortunately, both the depletion and pollution manifestations of the tragedy of the commons can be applied to the current economic crisis in our system of scholarly communications. Publicly supported research libraries share many of the characteristics of the commons. Publishers, scholars, and even research librarians are all guilty of depleting and/or polluting this commons in the ways they “rationally” seek maximum benefit from its economic (budget) and scholarly information (books and journals) resources. The price discriminating publisher, like the herdsman who chooses to add more cows to his herd, exploits the research library commons by rationally deciding to maximize profits and charge whatever the traffic will bear in the inelastic range of the demand curve. The scholar who furthers his or her career or research goals by publishing as much as possible, and then insisting on
free access to all other published information that might be of use, shares attributes with the independent, free-enterpriser who fouls his own nest with pollution. Perhaps most sadly of all, we research librarians, who are charged with managing this commons, also encourage the exploitation and pollution of the research library commons, and compound the tragedy, by insisting on comprehensive collections and unlimited free access for any and all potential users.

A deep-seated belief in the efficacy of the free-market system and Adam Smith's "invisible hand" (that is supposed to create greater prosperity for all if each follow our own best interest) underlies the actions and views of each of these participants in the scholarly information marketplace, including research librarians. Katina Strauch, the head of Collection Development at the College of Charleston Library, in a recent talk on the economic relationships among librarians, vendors, and publishers, argued passionately and effectively for the need to preserve our competitive system where "the government does not dictate whom you must deal with or at what price." But when we face the problem of managing a commons, says Hardin, "we can make little progress until we explicitly exorcise the spirit of Adam Smith ... [who] contributed to a dominant tendency of thought that has ever since interfered with positive action based on rational analysis, namely, the tendency to assume that decisions reached individually will, in fact, be the best decisions for an entire society." Economists, on the other hand, realize that conditions of free choice for consumers and profit maximization by producers do not always result in socially desirable consequences. In 1977, economist Fritz Machlup pointed out the long-term consequences of making the scholarly publishing industry dependent on what he called the "grants economy," that is, the resources produced and paid for by recipients of public or private grants instead of private consumers paying out of their incomes. "Should trends of the recent past continue," Machlup said, "it would be impossible for the private sector of the [publishing] industry to survive if it had to rely on . . . sales to private buyers not aided by grants. Whether the industry can be viable in the grants economy at the present rates of growth of costs on the one hand, and of grants on the other hand, is the question." In a 1979 review of the theoretical basics of economic analysis for Library Trends, Richard McKenzie included the following statement as a major element in his "economist's paradigm": There is a tendency for individuals within very large groups to fail to pursue "common goals" even when the goals are agreed upon by all group members. Therefore, voluntary collective action is not likely in very large groups. [italics in the original] This is a very elegant synopsis of the crux of the tragedy of the commons. Unfortunately, McKenzie did not go on to explore the implications for library economics of this part of his paradigm.

Herb White has been one of the few librarians to state clearly some of these implications. For instance, here are his concluding remarks to a group of scholarly publishing executives: "unbridled growth in the number of publications, in their size, and in their price, with all of this dumped on one pliant customer community, cannot work in the future. Not necessarily because librarians will become more assertive . . . but because there is no growth in the resources of what continues to be the one and only customer community." In other words, voluntary collective assertiveness among research librarians is unlikely, even though we may all agree that collective assertiveness would help. Instead, White argues, only the exhaustion of our collective budget resources will bring an end to the spiraling growth in scholarly journal numbers and prices.

If this happens, the most important tragic consequence for our current system of scholarly communication will be the slow death of research libraries as much more than archives of the past. Their ability to collect and provide access to the current scholarly record will be gradually destroyed. The publishers and scholars who depend on the research library's budget and scholarly information resources will be forced to find alternative, and probably
more expensive, ways to disseminate and gain access to these resources. In the face of such discouraging predictions and the inexorable and seemingly inevitable forces leading to a research library commons tragedy, what can be done to insure that research libraries (or some reasonable alternative) will continue to carry out the mission of collecting, preserving, and providing access to the scholarly record? The concluding section of this essay will explore a few tentative possibilities for preventing this tragedy and managing the research library commons for the long-term future.

MANAGING THE RESEARCH LIBRARY COMMONS

Over the past ten years or so, probably the most frequently suggested strategy for research libraries to deal with the spiraling quantities and costs of scholarly information has been to use new electronic and optical information storage and retrieval systems tied together in regional, national, and international networks. The combination of these new information storage and sharing technologies, proponents argue, should make possible effective storage and retrieval of much larger quantities of information at much lower unit costs. In addition, networks would permit direct access to remote resources, reducing the necessity for every research library to collect comprehensively.

A very influential statement of this vision of a technological future for research libraries was the 1982 Matheson-Cooper Report sponsored by the Association of American Medical Colleges and the National Library of Medicine. The report called for strategic planning initiatives and major investments in information technology to manage information resources within integrated networks. However, an important characteristic of the class of human problems represented by the tragedy of the commons, says Hardin, is that they are not particularly amenable to technical solutions. "A technical solution," he says, "may be defined as one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality." To the degree that technology simply changes the dimensions or capacity of the research library commons to deal with larger volumes of information, or transforms that information into formats with lower unit costs, we may be only delaying the inevitable tragedy (or perhaps compounding it because of the high cost of the new technologies!). This is because the basic human patterns of overproduction and overconsumption of scholarly information described above will remain unchanged.

Matheson and others have argued, however, that this report's recommendations are not, in their essence, a set of proposed technological solutions, but rather an "attempt to define the basis for a different library paradigm for the future." She quotes Thomas Kuhn who remarked that the process of knowledge transformation may really mean the "reconstruction of group commitments among the community of scientists." Such a reconstruction, Matheson says, "with respect to the management of information in the health sciences would be an exceedingly useful thing." Virginia Holtz takes this Kuhnian analogy of the paradigm shift further by suggesting that the Matheson-Cooper Report provides a focus for a new world view where the "information user, rather than the library, and information per se, rather than the instruments which carry it, have become the central concerns of our discipline." In essence, what Matheson and others of this school are proposing is "the deinstitutionalization of [research] libraries" so they will shift away from building definitive collections of books, journals, and bibliographic data and, instead, "conceive of different ways to enhance the utility of our major [scholarly information] assets, to improve the productivity of the academic community." Short of the kind of major rethinking of the mission of research libraries Matheson proposes, other useful suggestions have been made to manage research libraries in ways to avoid their over-exploitation by information entrepreneurs. Stephen Feinman argues that some sort of government regulation of the scientific and technical
information industry may be needed, and that this may best be justified if we cease to focus on the public goods aspects of information and think instead of “knowledge-information-communication packages” as a form of capital. Feinman envisions “an information industry structured much like the banking industry”:

Information banks would be chartered at both the national and state levels . . . The producers of knowledge, which would be captured by these banks, might be treated in the same manner as individuals with time deposits . . . The users of the system . . . might well be treated as people or institutions that obtain a loan [to be] paid back in terms of principal and interest . . . Access to the banks would be broadly regulated by the central bank but controlled by the individual institutions . . . The central bank, controlled by the government, would also define the limits of research, since knowledge that is not captured cannot be communicated.

As Feinman notes, this scenario would have dramatic implications for all parts of the scholarly communications process, including elimination of the need for or purpose of copyright. Since copyright is one of the keystones supporting the commercial exploitation of scholarly information resources and products, most proposals to manage these resources better involve changes in copyright laws. Professor Peet, at the SSP seminar, proposed changes in these laws that would reduce “copyright on journal articles . . . to a short period of time, perhaps one or two years.” This would preserve incentives for publishers to provide the immediate access “critical to the active researcher, [but] allow libraries to acquire backruns of . . . journals at little or no cost.”

A growing number of research librarians now argue that ways should be found to reduce the role of commercial publishers in the scholarly communication process dramatically. For instance, Pat Battin argues that the library should become the center of a new kind of restructured university that controls and manages the whole process of creating and disseminating ideas to advance knowledge for the public good. Similarly, Richard Dougherty and Brenda Johnson suggest that “if scholars and librarians can’t communicate easily through publishers, we must learn to communicate around them.” And James Thompson thinks that “the idea of the academy retaking control of the bulk of scholarly publishing is being forced into consideration by the practices of commercial publishers.” But even if these librarians are all correct, and “there is no technical or economic reason” why commercial publishers must remain a part of the “information conduit” for scholarly communication, formidable barriers remain to changing the centuries-old incentives and economic structures of our current scholarly information marketplace. Individual publishers and scholars, like the individual herdsmen in Garrett Hardin’s story, are convinced that their journals and articles are all outstanding and should easily get a share of the limited budget resources of research libraries.

Each of them thinks,” as Herb White puts it, “that while indeed other and more marginal publishers [and scholars] might suffer, they would be unaffected.”

Each of the solutions proposed above, as with other “commons” problems faced by our society, would involve a radical restructuring of the ways scholars, publishers, and librarians think about and use research library resources. Appeals to individual publishers, scholars, or even librarians to restrain themselves for the common good will not work. As Hardin puts it, appeals to conscience “set up a selective system that works towards the elimination of conscience from the race . . . [since] to conjure up a conscience in others is tempting to anyone who wishes to extend his control beyond the legal limits.” What we need instead, says Hardin, is “mutual coercion mutually agreed upon,” that is, we must eventually give up altogether the idea of a commons open to unrestrained exploitation. In place of individual freedom to exploit, we must learn what Kenneth Boulding (1977) calls simply a sense of “community.” But this is a “long and painful learning process.”

If we are going to bring about the changes needed to avoid the gradual destruction of our research library commons, it will take leadership and a common understanding of the grave
implications of continuing on our present course. It seems clear that current market incentives are much too strong to expect the initial leadership or understanding to come from publishers or research scholars. Because research libraries have been charged by society to manage our nation’s scholarly information resources, research librarians must assume this leadership role and develop strategies to avoid the approaching tragedy. The first step, I would argue, is to educate ourselves and our publisher and academic scholar colleagues about the true economic implications of the current scholarly information marketplace.

It is encouraging to note that professional library associations such as the Association of Research Libraries have recently taken major steps to begin this process of education. Witness the two 1989 studies published as part of ARL’s Project on Serial Prices. These studies present their recommendations backed with convincing empirical evidence and solid economic analysis. They also emphasize the importance of an “ongoing program of education and publicity.” Only when the impending commons tragedy of our nation’s research libraries is widely understood will we be able to build the necessary political consensus for change.

REFERENCES

3. Ibid., p.62.
4. Ibid.
7. Ibid., p.73.
16. Ibid., p.81.
26. Ibid., p.28.
32. Ibid., p.21-22.
42. Matheson, "The Author Replies," p.34.
50. Ibid.
The author describes new directions in international education during the past decade and links them to new imperatives in academic librarianship. Five major areas of development are considered: foreign language instruction, study abroad, internationalizing the curriculum, foreign students and scholars, and technical assistance and international development. The author recommends six ways in which ACRL might strengthen its role as an advocate of international education.

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Trends in International Education: New Imperatives in Academic Librarianship

Martha L. Brogan

en years ago the President’s Commission on Foreign Language and International Study issued a report entitled Strength through Wisdom: A Critique of U.S. Capability that stressed the need to integrate an international dimension into the college curriculum. Among other widely publicized findings, it revealed that less than 10 percent of Americans could read and speak a foreign language effectively, that few were highly skilled and few were competent in a language other than Spanish, French, or German. The dearth of international knowledge among college students, including basic information about geography, politics, and economics, was further documented in the 1981 report, College Student’s Knowledge and Beliefs: A Survey of Global Understanding. Numerous other studies during the 1980s continued to examine the role of foreign language instruction, study abroad, international curriculum, foreign students, and overseas technical assistance in higher education.

In academic institutions the argument for increasing the international competence of students is twofold, stemming from educational and economic imperatives. Developing the skills necessary to succeed in a multicultural, interdependent world is both educationally responsible and the only means of survival—economic and otherwise—in the twenty-first century. Increasingly, the United States’ economic pre-eminence is being replaced by international economic competition in a global marketplace. Educators now realize that national policies alone cannot resolve the global challenges of environment, sustainable agricultural systems, improved health systems and population planning, and urban development. The United States is only one partner in a global network. During the 1980s institutions of higher education recognized their role in educating internationally competent citizens as well as developing a cadre of highly skilled future leaders who might succeed in the global arena.

We are now beginning to witness concrete outcomes, and a coalescing of opinion about the importance of internationalizing higher education. At the national level, the Coalition for Advancement of Foreign Language and International Stud-
ies (CAFLIS), founded in 1987, serves as a focal point for these discussions. CAFLIS has promoted the proposal to create a National Endowment for Foreign Language and International Studies, which would work with public and private colleges and universities, associations, and school systems to strengthen international competence.4

At the state level, the National Governors' Association released its study of international education, America in Transition: The International Frontier, in March 1989.5 The report discusses the effects of globalization on state economies and work forces and outlines a "state action agenda" for elementary and secondary schools, higher education, and business. The governors' recommendations for higher education include strengthening the study of foreign languages, increasing participation in study abroad, and integrating an international dimension in all majors at the college level. Many states already have introduced programs to improve the international competence of their citizens, and this new report undoubtedly will result in even broader participation.6

A special Higher Education Panel (HEP) survey of colleges and universities covering the period from 1982 to 1987, supported by the American Council on Education (ACE) was issued in September 1988.7 It reported increases in hiring new faculty with international expertise, international course offerings, libraries' international collections, opportunities for study abroad, and opportunities for faculty travel overseas.

To summarize, the current period in international education is characterized by consolidation and reconfiguration.8 Since the end of the Second World War there has been unprecedented growth on almost all campuses in teaching about other parts of the world and in international exchanges of student and faculty. Therefore, the main task ahead is not to add more courses, but to sharpen the definitions of international education, and to build into a cohesive whole the existing, usually disparate component parts. Institutions see the need to integrate and direct growth from widely dispersed, largely student demand-driven initiatives into rational institutional plans. To this end, many are appointing high-level administrators specifically assigned to review and develop a systematic, integrated approach to internationalizing the campus.9 Trends in five areas of international education are discussed below and their implications for academic librarianship are identified.

FOREIGN LANGUAGE INSTRUCTION

Institutions are reconsidering the purpose, levels and outcomes of foreign language instruction. There is a new emphasis on requiring all students to attain a minimal-level proficiency in a second language. A second strategy concentrates on a narrower set of students who will attain a higher level of skill. This subset of students expands to nontraditional fields outside the liberal arts. The University of Rhode Island, for example, launched a pilot program in 1988 that combines a standard engineering curriculum with intensive study in German language and culture. It includes a six-month internship with an engineering company in a German-speaking country, and, upon return from abroad, an engineering course taught in German.10

In order to attract students to this type of program, colleges and universities are identifying motivated, high-aptitude learners in high school and targeting groups such as returned U.S. exchange students as potential participants. The HEP survey found that in the last five years, about 100 four-year colleges have increased their language requirements for admission, and that about 200 have increased them for a baccalaureate.11

Another trend in foreign language instruction is increasing enrollment in non-European languages. One-third of the institutions in the HEP survey showed increases in the number of students enrolled in non-Western languages.12 Figures released by the Modern Language Association corroborate these findings. From 1983 to 1986, the number of college students enrolled in Japanese increased 45%, to 23,454. During the same period,
the number of college students enrolled in Chinese increased by 28.2% and in Russian by 11.8%. In contrast, French enrollments were up by only 1.9% and German declined by 5.6%.

Finally, new measures are being developed to assess students' foreign language ability, with greater emphasis on actual performance and outcomes' assessment. Eventually, college curricula are likely to articulate more explicitly the levels of language offered, alongside the expected performance outcomes. Colleges and universities are working more closely with elementary and secondary schools to offer a continuum of foreign language training that extends from K-12 to college and beyond.

"As students become more conversant in foreign languages and the curriculum develops in languages other than English, new demands will be placed on libraries' human and material resources."

The need for a highly trained, internationally astute cadre of academic librarians is evident. As students become more conversant in foreign languages and the curriculum develops in languages other than English, new demands will be placed on libraries' human and material resources. Higher-aptitude learners in foreign-language content courses will need foreign-language materials outside traditional, literary fields. Academic librarians can expect requests for business materials in Japanese, engineering in German, or journalism in Chinese. They must be prepared to identify and obtain these resources.

STUDY ABROAD

Traditionally, U.S. institutions of higher education have practiced a laissez-faire approach to study abroad. Although most four-year colleges and universities operate study-abroad programs (63 percent, according to the HEP survey), few have been developed as an integral part of the curriculum, and despite the number of programs available, relatively few students take advantage of them. There is a proliferation of programs, many overlapping in destination (largely European) and intent (largely general liberal arts), and often without quality control. Most institutions have not reviewed study abroad in terms of its relationship to the curriculum or the students' academic goals.

Current trends point first towards increasing the sheer number of college students who participate in study abroad. The European Economic Community (EEC) plans to send at least 10 percent of the students from each country to study in another member country as part of the EEC's 1992 integrated market concept. Similarly, an advisory panel to the Council on International Educational Exchange (CIEE) released a report in December 1988, Educating for Global Competence, that called for an increase in the number of Americans studying abroad to 10 percent of enrollment by 1995 and 20 to 25 percent by 2008. The University of Minnesota has set a goal of reaching parity in the number of foreign students it receives and the number of U.S. students it sends abroad within the next ten years. This would mean a fourfold increase from the current 800 students, to 1,600 in 1993, and 3,200 in 1998; still less than 10 percent of the student population at the University of Minnesota.

In study abroad, there is also a movement to expand non-European opportunities and to relate study abroad to the academic curriculum, both before and after the term overseas. Most research on the impact of study abroad has concentrated on its character-building and cultural value, nearly excluding the evaluation of academic benefits and any gain in substantive knowledge. This is likely to change as institutions review systematically the purpose of study abroad and make it an integral part of the curriculum across all disciplines.

As more students seek opportunities to study abroad, academic librarians can anticipate a demand for information about
exchange programs. Moreover, students may want practical information about current social and economic conditions in the countries where they plan to study. If the library chooses not to acquire such practical guides itself, librarians should at least know which offices on their campus offer services and advice on study abroad.

INTERNATIONALIZING THE CURRICULUM

To prepare students to live in a multicultural, interdependent world, institutions must pursue a strategy of infusing the general education curriculum with international content, while at the same time maintaining and improving concentrations and majors in international studies for a smaller subset of students. According to the HEP survey, just less than half (49 percent) of four-year colleges and universities reported an increase in the integration of international materials into regular courses. This seems to confirm the earlier findings reported in ACE's *Campus Trends*, 1986, which concluded that about two-fifths of the four-year institutions are increasing or have recently increased attention to international matters in their curriculum.19

"As faculty develop the international content of their courses, they will rely more on international library resources and networks."

As faculty develop the international content of their courses, they will rely more on international library resources and networks. National resource collections, along with the specialists capable of developing them, will become insufficient. Knowledge of—if not access to—international sources will be required. In an international affairs course at the University of Maryland, students are linked via a computer network, created by the State Department, to European universities and strive to resolve geopolitical problems. Acting as diplomats for their respective countries, students carry out all correspondence in target languages.20 This type of course is likely to place new demands on academic libraries.

FOREIGN STUDENTS AND SCHOLARS

Foreign student enrollments in U.S. institutions have increased tenfold in the last thirty-five years to a current figure of about 350,000. While foreign students constitute less than 3 percent of all higher education enrollments in the United States, they now sustain academic programs on some campuses, particularly at graduate and professional levels. Since the mid-1980s, public attention has been drawn to enrollment and graduation figures in the technical fields where foreign students predominate.21 At the University of Minnesota, foreign students comprise about 20 percent of the total graduate student population; however, they represent over 50 percent in fields such as agricultural economics, agricultural engineering, animal science, civil engineering, economics, fluid mechanics, mathematics, mineral engineering, and veterinary medicine. On many campuses, foreign students are critical not only to the survival of graduate education in these fields, but also to the future labor force of U.S. corporations.22

Academic librarians need to evaluate the relevance of their collections and services to foreign students. They should know the demographic profile of foreign students on their campuses, the countries (and languages) they represent and their fields of study. Are foreign students provided with a frame of reference for using academic libraries effectively? Foreign students are also primary resources, on the campus and in the classroom, to internationalize the curriculum. But relevant library materials are needed to validate their interpretations. Do academic libraries have resources available in the vernacular to meet this need? Should librarians attempt to acquire materials relevant to foreign students’ native countries so they might apply their knowledge effectively upon their return home?
TECHNICAL ASSISTANCE AND INTERNATIONAL DEVELOPMENT

For several decades, public research universities, in particular, have been involved in projects with developing countries that concentrate on institution-building, education and training, and technical assistance. Typically these projects have been funded by domestic and international agencies like the U.S. Agency for International Development, the World Bank, the World Health Organization, the Ford Foundation, and the Asian Development Bank. Such projects send U.S. faculty as visiting scholars overseas as well as bring foreign students and scholars to the United States.

The Midwest Universities Consortium for International Activities (MUCIA), composed of eight major public universities in the Midwest, manages large-scale international development projects that require combined scholarly resources. Since 1977, it has operated long-term programs in such countries as Indonesia, Thailand, Nepal, Burma, Korea, Bangladesh, Brazil, Peru, and the West Indies.

In January 1987, MUCIA signed a five-year, $61 million subcontract with the World Bank to the Government of Indonesia (WBXVII). Based on the premise that Indonesia’s social and economic growth are impeded by the lack of trained personnel, the project seeks to strengthen Indonesia’s capacity to train its own university instructors and researchers. Specifically, MUCIA will provide: (a) graduate degree training for Indonesian students at overseas institutions (2,300 person-years); (b) internships and other nondegree training for Indonesian faculty and staff (2,240 person-months); and (c) technical research assistance by U.S. faculty sent to Indonesia as visiting scholars (1,900 person-months). The project is targeted to the fields of economics, life sciences, food science and nutrition, engineering, social studies, computer science, and biotechnology.

Technical assistance projects vary from institution to institution, but academic librarians should be familiar with local priorities and commitments. Ideally, academic librarians would be involved during contract negotiations, since exchange of research materials is often an integral part of the proposal. Moreover, academic libraries might participate more fully in other aspects of these projects by sending their library staff overseas and agreeing to train librarians from abroad at their home institutions.

SUMMARY

Library professionals can no longer seek resolution to problems in parochial ways. The publishing industry itself has globalized: books written by authors in the United States are published by multinational corporations in the Netherlands, printed in Korea, priced differentially according to geographic markets, and distributed worldwide. To be effective, academic librarians must understand the new international marketplace. Even “local” problems such as preservation, database development, and cataloging standards must be considered in their international context.

The American Library Association (ALA) appears to have adopted an approach to international education similar to that of most institutions of higher education: random, decentralized, and ad hoc. The average ALA member needs a veritable road map through the thicket of ALA international library committees, and is hard put to understand whether and how these disparate committees cooperate to accomplish associational goals.

The Association of College and Research Libraries (ACRL) should work with ALA to focus and target its international efforts in order to avoid needless redundancies in some areas and glaring gaps in others. ACRL should reexamine the way in which it contributes to international education and strengthen its commitment for advocacy. It could provide leadership in the following areas:

1. Liaison with key national and international associations and programs that fund, promote, and evaluate international exchange in higher education such as the Association of International Education Administrators (AIEA) and the Coalition for the Advancement of Foreign Language and International Studies (CAFLIS).
ACRL should appoint representatives to a broader network of these associations. It should take the lead in articulating the academic library dimensions of the numerous reports about international education cited in this paper and bringing them to the attention of the sponsoring agencies. With these agencies, ACRL should identify new sources of funding and lobby for resources to support the international dimensions of academic librarianship. (See appendix for list of relevant agencies.)

2. Rather than serving as a clearinghouse for individual exchange placement requests from librarians abroad, ACRL might focus its attention first on encouraging such programs as IREX (International Research and Exchanges Board) and Fulbright to promote the exchange of librarians, following the successful prototype of the Library/Book Fellows program with USIA. ACRL could become the chief consultant in identifying appropriate institutions to meet the needs of exchange scholars and encouraging colleges and universities to host exchangees under the auspices of established international sponsors.

3. Within its field of responsibility, ACRL should promote quality control over international exchanges, tours, courses and other initiatives by offering critical reviews, writing guidelines, and identifying trained consultants during project development. C&RL News might begin a regular international news column.

4. Through internationalization of its strategic plan, ACRL should ensure that its committees and sections integrate an international perspective into their work. It should support the work of its area studies sections, in particular, by ensuring their representation on appropriate ALA committees and using them as a network of consultants on various projects. All geographic areas, including Western and Eastern Europe, should be represented.

5. ACRL should recommend policies and mechanisms for academic libraries to compete for grants and gifts to support the international exchange of academic librarians and materials.

6. ACRL should develop guidelines and mechanisms for academic librarians to receive training and professional development opportunities in international areas. This effort should begin with library school training and extend throughout the career phases of academic librarianship.

REFERENCES AND NOTES

3. See bibliography for list of recent studies in international education.
APPENDIX A: INTERNATIONAL EDUCATION: SELECTIVE BIBLIOGRAPHY OF NEWS, TRENDS, AND GUIDELINES

Recent News Articles on International Education


Trends in International Education


Barrows, Thomas and others. College Student’s Knowledge and Beliefs: A Survey of Global Understanding,


Guidelines for International Education

American Association of State Colleges and Universities. Guidelines: Incorporating an International Di-
mension in Colleges and Universities. Washington, D.C.: AASCU.

APPENDIX B: U.S. AGENCIES AND ASSOCIATIONS IN INTERNATIONAL EDUCATIONAL EXCHANGE

Higher Education Agencies with International Dimension
Academy for Educational Development
American Assembly of Collegiate Schools of Business
American Association for the Advancement of Science—Consortium of Affiliates for International Programs
American Association of Collegiate Registrars and Admissions Officers
American Association of Community and Junior Colleges
American Association of State Colleges and Universities
American Association of University Women
American Council of Learned Societies
American Council on Education
Andrew Mellon Foundation
Association of Catholic Colleges and Universities
Association of Jesuit Colleges and Universities
Carnegie Corporation
College Board, Office of International Education
College Entrance Examination Board
Committee on Institutional Cooperation
Council of Graduate Schools
Council on Learning
Dumbarton Oaks
Educational Testing Service, International Office
Ford Foundation
Higher Education Consortium for Urban Affairs
Luce Foundation
MacArthur Foundation
National Academy of Sciences
National Association of State Universities and Land-Grant Colleges
National Science Foundation
Olin Foundation
Pew Charitable Trust
Rockefeller Foundation
Sloan Foundation
Smithsonian Institution
Social Science Research Council
Spenser Foundation
U.S. Department of Education (Fulbright-Hays programs and Title VI centers)
William & Flora Hewlett Foundation

International Agencies
Academic Alliances in Foreign Languages and Literatures
American Field Service
Association for International Practical Training
Association for Women in Development
Association of International Education Administrators
Association of U.S. University Directors of International Agricultural Programs
Board for International Food and Agricultural Development
Coalition for Advancement of Foreign Languages and International Studies
Community Colleges for International Development, Inc.
Consortium for International Cooperation in Higher Education
Consortium for International Development
Consortium for International Studies Education
Council of International Exchange of Scholars
Council of International Programs
Council of International Programs for Youth Leaders and Social Workers, Inc.
Council on Foreign Relations
Council on International Educational Exchange
East-West Center
Fogarty International Center
Fulbright Alumni Association
HEA Title VI National Resource Centers for International Studies, Advanced Training and Research Branch
Institute of International Education
International Association of Educators for World Peace
International Association of Universities
International Student Exchange Program
International Studies Association
Latin American Scholarship Program of American Universities
Liaison Group for International Educational Exchange
Mid-America International Agricultural Consortium (MIAC), Inc.
Midwest Universities Consortium for International Activities
National Association for Foreign Student Affairs
National Council for International Visitors
National Council of State Supervisors of Foreign Languages
National Council on Foreign Languages and International Studies
Post Secondary International Network
Rotary International
Society for Intercultural Education, Training and Research
South-East Consortium for International Development
University Affiliation Programs (USIA)
Area Studies or Country-Specific Agencies
African American Institute
African Studies Association
Alexander von Humboldt-Stiftung
AMIDEAST
American Association for Netherlandic Studies
American Association of Teachers of German
American-Mideast Educational and Training Services, Inc.
American Oriental Society
American-Scandinavian Foundation Exchange Division
Association for the Advancement of Slavic Studies
Association for Asian Studies
Atlantic Exchange Program
Belgian American Educational Foundation
Center for Arabic Study Abroad
Commission of European Communities
Committee on Scholarly Communication with the People’s Republic of China
Conference Group on German Politics
Council for European Studies
Council of American Overseas Research Centers (CAORC)
  American Academy in Rome
  American Institute for Yemeni Studies
  American Institute of Indian Studies
  American Institute of Iranian Studies
  American Institute for Maghrib Studies
  American Institute of Pakistan Studies
  American Research Center in Egypt
  American Research Institute in Turkey
  American School of Classical Studies at Athens
  American School of Oriental Research
German Marshall Fund
German Studies Association
Hariri Foundation
Institute for European Studies
Intercollegiate Center for Classical Studies in Rome
International Research and Exchanges Board (Soviet & East European)
Japan Society for the Promotion of Science
Latin American Scholarship Program of American Universities
Latin American Studies Association
Middle East Studies Association
National Council for Soviet and East European Research
Society for the Advancement of Scandinavian Study
Society for French Historical Studies
Academic Library Planning: Rationality, Imagination, and Field Theory in the Work of Walter Netsch—A Case Study

William G. Jones

Architect Walter Netsch is responsible for the design of fifteen library buildings, including such major works as the University of Chicago's Joseph Regenstein Library and Northwestern University's main library. Netsch developed a principle for ordering the design elements in some of these buildings that he has termed "field theory." This paper discusses how field theory principles were applied in two Netsch buildings, how he used a complicated geometry in a third, and how the planning committee modified the application of the "field" in one of those buildings.

Alter A. Netsch, Jr., design partner for Chicago's Skidmore, Owings, and Merrill Architectural Firm, designed fifteen library buildings during his career. Two of them were major research libraries and were built for Northwestern University (1969) and the University of Chicago (1970).

Netsch gained national recognition as an innovative and imaginative architect through such assignments as the master plan for the U.S. Air Force Academy at Colorado Springs (1962) and the University of Illinois at Chicago Circle (1965).

He designed other libraries, both public and academic, including those for Wells College in Aurora, New York (1968) and Texas Christian University (1981). The University of Illinois at Chicago Circle design included a large library building to be constructed in three phases, although this campus library was designed primarily to serve an undergraduate enrollment. (Only two phases were completed.)

In many of his buildings Netsch employed a design system that he labeled "field theory," a method for developing the layout on both large and small scales through the elaboration of a geometric figure. This article explains what field theory is, how Netsch used it in one of his earlier buildings, how he used geometric figures (but not according to field theory principles) in Northwestern University's main library, and how he applied the theory in the Science-Engineering Library (SEL, 1977) at Northwestern University. It also shows how the SEL planning committee changed Netsch's proposed design, and the effect these changes had on the aesthetic and functional dimensions of the building.

Architectural Record defined field theory as follows:

Once the programmatic needs and site requirements are organized into a generalized plan that works, various geometric fields are tested and an appropriate one applied. The selected field provides a continuous proportional system with infinite mathematical variations. As in contemporary painting, sculpture and music;

William G. Jones is Acting University Librarian at the University of Illinois, Chicago, Illinois 60680.
continuity, ambiguity, overlapping, scale change, lattice, pattern and shape are constant ordering elements.
The primary ordering systems in Netsch's Field Theory are the combinations (or orthogonal right angle) patterns and diagonal (angular) patterns most often defined by rotating the square. The combination of patterns that results from this geometrical game becomes the field. The variety of patterns that can be produced by this process results in infinite opportunities to find a field that will give order to the preliminary organization of building elements.

A "rotated square" looks like this:

It can be elaborated to look like this:

And like this:

A schematic layout for a field theory building based on the rotated square is the Behavioral Sciences Building (BSB) at the University of Illinois at Chicago (1965). (See figure 1 and photograph 1.) The building contains offices, classrooms, lecture halls, and a cafeteria, incorporating such varied features as winding staircases, galleries, and atria. (See photographs 2,3,4.) Through the elaboration of the geometric figures contained within the rotated square, Netsch created a building of great variety, both geometric and symmetric. Although stylistically elegant, users complain that the complicated layout, extensive use of interior corridors, and inadequate lighting lead to a building that prevents users from finding their way within it.

"Although stylistically elegant, users complain that the complicated layout, extensive use of interior corridors, and inadequate lighting lead to a building that prevents users from finding their way within it."

Northwestern University's Main Library (1969) was built to replace the older Deering Library with a research library serving faculty, graduate students, and undergraduates. It houses the library's social sciences and humanities collections, the library's administrative offices, the technical processing operations for all Evanston campus libraries, and it contains such specialized service units as government publications, reference, curriculum collection, the Melville J. Herskovits Library of Africana, and a 60,000 volume noncirculating collection (the Core Library) designed primarily for undergraduate use.

The Northwestern Library possesses three stack towers raised over the services floor. The services floor contains administration, circulation, periodicals, reference, and technical processing. A service core containing elevators and stairs links the towers and provides vertical transporta-
A typical floor in one of the towers contains enclosed and open carrels, typing rooms, and seminar rooms arranged around a radial stack system and a central study area. (See figure 2 and photographs 5, 6.) Instead of generating the layout by rotating the square as field theory would require, Netsch has placed a circle within a square, and repeated the pattern in each tower. This opposition of orthogonal and circular forms give the layout a vibrating quality, the viewer’s eye moving from circle, to rectangle, to square.

According to an article in the journal Interiors, Netsch designed Northwestern University’s library while he was still formulating his field theory. The building contains, nonetheless, many features of field theory buildings, a “crystalline surface skin,” a “lack of facade,” “avoidance of masses,” a “contact between interiors and landscape,” and “avoidance of disrupting the landscape.”
Because of the radial arrangement of the stacks, the library user inside the towers is more aware of circular elements in the design than of the orthogonal. Users may initially have difficulty orienting themselves within this layout. Windows are often helpful in assisting users to orient themselves within buildings. In this building, however, windows are small, vertical panels that are not readily visible from within the stacks. For orientation, users must rely on maps, directional arrows, and signage to find their way through an interior apparently devoid of orienting cues. There are cues, however, and they become more apparent by looking at the layout.

Each tower floor has a principal entry approached from the corridor linking it to the service core. Fire exits and stairs to other floors lie opposite the entry in another corner of the tower. A person at the center of a tower can see entry and stairs, but they are easily seen only from the center. Unless the user knows the layout thoroughly, the most efficient way to find a call number location is to move to the center of the tower and use the range finders there to guide his movement along the radial arms.
This layout takes time to learn. Users accustomed to libraries with orthogonal layouts (and other high-use buildings like supermarkets and department stores) will have to use the building several times before they can move about it comfortably. The radial plan of the stacks permits open carrels and study spaces to be placed near the centers of the towers between the less densely arranged stack ranges, but the radial arrangement doesn’t offer as great a density of shelving as an orthogonal layout would. Before the introduction of the online catalog made the placement of terminals closer to the collections possible, the unfortunate user needing to return to the card catalog from one of the towers faced a long and time-consuming trip. This need remains for that portion of the catalog not converted to machine-readable form.

Netsch designed a second library building for Northwestern University, the Seeley G. Mudd Library for Science and Engineering (SEL, 1977). This 60,000-square-foot building unites collections for astronomy, biology, chemistry, physics, and engineering. Only collections for geology and mathematics remain separate. The Geology Library lies at the south end

FIGURE 2
South Pavilion

Source: Interiors, 130,110 (Nov. 1970).

5. Northwestern University Library. Stack Tower.
Stack Tower.

of campus and will merge with SEL should the geology faculty ever acquire its own space closer to the other sciences in the north.

In SEL, Netsch used rotated squares to define interior spaces (offices, stairwells, mechanical rooms, toilets) while leaving the L-shaped exterior almost completely orthogonal (a diagonal window wall bridges the two arms of the "L.") (See figure 3, photograph 7.) Early proposals for the building followed field theory principles by extending interior diagonals to the perimeter where triangular insets in the side of the building would have broken up the otherwise unrelieved expanse of limestone and reflective glass. Another discarded variation would have resulted in finlike projections extending beyond the core of the building, set directly opposite the triangular insets. The projections would have contained windows with operable sash, installed for the purpose of improving natural ventilation should air conditioning, as an energy-reducing measure, have to be limited. These projections would have related SEL visually to another nearby Netsch building, the O.T. Hogan Biological Sciences Laboratory. (See photograph 8.)

Users enter SEL on the second, or services floor via a bridge leading from the adjacent Technological Institute Building. An elevator and three stair cores provide convenient access to collections on the first and third floors. Stacks follow a conventional orthogonal layout. Service points are few. Exit control, circulation, and information desks are staffed during hours of heaviest use. These service points are close to each other and are visible from the library entrance. During hours of low use, all three services can be offered from the circulation desk.

Site planning for SEL was constrained by the need to provide access to a major campus drainage system crossing the site. Netsch met this requirement by creating an oversized loading dock at the ground level underneath the second floor main entrance. The layout of the dock and its adjoining mail room preserves some of the
diagonal elements used elsewhere in the building. (See figure 4, photograph 9.) However, the allocation of a significant block of first floor area to dock, heating and ventilating equipment, and staff room breaks up the stack space into isolated pockets that are approachable only by following a somewhat circuitous path.

Netsch often placed doors and corridors near supporting columns, gaining additional space for open areas. This arrangement improved the ratio between net assignable and gross square feet, but it did so at the cost of requiring traffic to move awkwardly around pillars.

Netsch’s field theory buildings have exterior shapes that follow the interior diagonals generated by the rotated squares. The curious feature about the application of these diagonals is that the geometric and aesthetic unity resulting from the design is not apparent to those using the building. The organic nature of the design is only revealed by viewing the layout from above, as if the roof were cut away. Also, applying the system of rotated squares to the layout in SEL forced departures from the specifications of the program of requirements. For example, offices are about 90 square feet instead of the specified 140 square feet. The oddly shaped and reduced-in-size offices re-

8. Northwestern University Library. O. T. Hogan Biological Sciences Building.
quire special furniture. Wall units must be used because conventional rectangular desks are both too large and do not fit easily into the unusual offices. When the planning committee finally decided that the building exterior should not be punctuated by triangular insets, Netsch proposed retaining triangular areas as clerestories, with balconies that would link one floor to another. In these attempts to bring visual interest to the building, to "get away from the boredom of the square box," Netsch argued that flooring and enclosing the triangular areas would add to the building's construction costs, because such spaces had to be heated, cooled, and lit. The planning committee countered that balconies would result in unwanted noise being transmitted between the floors and that too much usable space would be lost to features that were solely of aesthetic interest. As built, the library contains no triangular insets, fins, or balconies. These changes produced a less distinctive design, but one more closely meeting the functional goal of the planning committee to maximize square footage at the lowest cost. Netsch has called the library a "compromise" building.

SEL offers staff and users generous public areas, large windows looking out over Northwestern's north campus and Lake Michigan, and conveniently placed service desks. Its undersized, oddly shaped offices, fragmented ground floor, and oversize loading dock are awkward details, but do not significantly reduce the
building's overall effectiveness. Better solutions might have been found, but the planning committee and architects expended considerable energy in debating the functionality of the diagonal layout, and further changes could not have been made without starting almost entirely anew.

"Potential flaws," include the use of irregular shapes, interior or exterior courts, monumentality, and too much or too little glass. Kaser himself notes the inefficiency of the radial design for Northwestern's Library. This building, visually appealing on the exterior and elegantly finished on the interior, requires its users to traverse considerable distances from entrances to towers. The self-contained towers admit no possibility of expansion; once filled the only alternative will be another free-standing structure. A large plaza that also serves as a roof to the public services and office floor has been a perpetual source of leaks, the result of fissures opening between plaza and independently moving towers. The reasons for citing irregular shape and monumentality as sources of problems are demonstrated in this building.

In a "field theory" building like the Behavioral Sciences Building, Netsch showed that he could manipulate geometric forms generated by rotated squares in a variety of ways to create an aesthetically unified architectural work. However, its negative features include a bewildering
layout, poorly illuminated interiors unrelied by the use of color, and fanciful winding staircases, those on the exterior closed to use during Chicago's harsh winters. In sum, BSB is a maze of confusing, interior corridors and awkwardly shaped offices. Like NU's towers, a lack of windows and a confusing layout offer users few cues by which to orient themselves. BSB's west face is forbidding and unwelcoming to traffic from adjacent parking lots. (See photograph 10.) Its brick and concrete surfaces, alternating gray and brown, both interior and exterior, give it a cold, austere appearance.

Had Netsch applied the rigid geometry characteristic of his other buildings to Northwestern's Science-Engineering Library, the design would have dominated and subordinated the function taking place within it as it does in the other buildings discussed in this paper. That outcome was avoided in SEL because the planning committee decided that recovery of functional space was more important than the creation of a distinctive and aesthetically unified design.

The characteristics of the buildings described in this paper and their impact on users are by no means unique, but thoughtful consideration of the design features exhibited in these building designs suggests other areas of inquiry: What are the costs in user satisfaction and functional utility in buildings where design governs so thoroughly? Does the use of "You-Are-Here Maps" contribute to the aesthetic appreciation of a building as well as its effective use? Must users of complicated buildings develop an understanding of the logic underlying the layout before they begin to find their way in them effectively? Do users conceptually map a building to obtain most effective use of it?

The creation of an academic library building meets more goals than the construction of a structure. These include the goals of architects to create buildings of beauty, to lend distinction to the names of their firms (and that lead to other commissions); the goals of librarians to occupy buildings of function and comfort for

themselves and their users (and that enhance their reputations as professionals of both vision and practicality), and the goals of administrators to complete buildings that satisfy those who sponsor, support, and lend their names to the buildings and campuses on which the buildings are placed.

Librarians who become involved in building planning can prepare themselves for working with architects designing buildings for them by visiting and reviewing layouts for other buildings designed by the architects. In working with prominent architects, librarians will be able to determine whether the architects have written about the aesthetic principles informing their work. They may ask questions like the following: Will those working in and using the building be able to move about in it without excessive reliance on signage, floor plans, or information desks? Will standard furniture and equipment fit in the spaces designed for them? Will users, book trucks, cartons and crates be able to move or be moved easily from one area or one floor to another without encountering columns, balconies, or other impediments? Is there so little glass that users will become confused or disoriented within the building, or so much that valuable collections will be exposed to harmful sunlight?

Librarians need to be alert to the consequences of accepting designs that depart from conventions by which much of the world uses and judges buildings, and they should ask themselves how the design promotes the use to which a building will be put. Finally, they should remember that academic library building planning is very much a group process in which the outcome may change, even late in the project.

REFERENCES

3. Ibid., p. 118.
The Role of the Rare Book Library in Higher Education: An Outsider Surveys the Issue

Rosann M. Auchstetter

This article explores the role of the academic rare book library in terms of its financial justification, and concludes that the primary justification lies in its utility as a research library. Experience suggests that haphazard groupings of "highspots" do not constitute a proper rare book library and that facilities that cannot maintain research-oriented rare book collections would serve their institutions better by developing special collections that may or may not include rare books.

This is an age when university and college rare book collections, rightly and wrongly, have been increasingly criticized by administrators who are keeping a sharp eye on the budgetary bottom line. There have been charges that for many universities and colleges the rare book room or library is an expensive and unnecessary bauble serving, at best, as elegant window-dressing calculated to bolster institutional egos. Such charges are not always without foundation. Nevertheless, a defense of individual academic rare book collections is often possible. Moreover, the best such defense lies in the general perception of the positive role of college and university rare book collecting. It is also apparent that rare book librarians have been less than outspoken in their own defense and have frequently failed to define even generally the role of the collections entrusted to their care. One may conclude that rare book librarians are so deeply involved in the tremendous responsibilities inherent in their day-to-day and fiscal-year-to-fiscal-year tasks that they lack the opportunity to distance themselves sufficiently to take a general overview and engage in self-analysis.

Any extended essay on the role of the rare book library in an academic setting requires several prefatory remarks. These may be gathered into two categories, the first of which includes a general criticism of the literature available. In the second may be found what can be described as working definitions.

A search of the literature indicates that there has been actually very little written on the role, purpose, or function of any rare book library. This is even more the case if the subject is limited to such collections within higher education. Daniel Traister perceives a fundamental gap in the intellectual underpinnings of librarianship in general—and in rare book librarianship in particular. He writes that we know (more or less) what we do, but that our knowledge of why we do it is another matter. This criticism is also apparent in Traister's critique of Roderick Cave's Rare Book Librarianship. He says that the book deals only with processes and teaches nothing on the central intellectual issues of the subject. Cave's book, he maintains, does not explain why we have rare books in libraries or how their presence there makes a contribution to the progress of humanistic learning.

Rosann M. Auchstetter is Assistant Art Librarian at Indiana University, Bloomington, Indiana 47405.
That Traister is nearly alone in the charges he makes serves to strengthen his case. Only William Matheson, of all the writers to be cited in this paper, joins Traister in his approach to this sensitive point. He cites what he views as a valid displeasure with rare book librarians who never address the serious questions that might well be raised about the place of rare books in the academic library, but who, nevertheless, patronize "plain" librarians and talk glibly about "collection strengths" and "highspots."

Even the writers who do touch upon the intellectual underpinnings of rare book libraries often wander far from the crucial topic because they dwell on the history of individual collections or rare book libraries in general. Individual writers too frequently provide excessive information on the rare book libraries with which they are associated or familiar. Much of the literature is characterized by a heavy use of generalities. This last point, however, is not always a negative feature, as discussed below.

There are many definitions of "rare" books. For this reason, very different items may fall into the category of rare books or be properly added to such a collection. Thus the best definitions are general. In addition, it will be seen from the definitions presented below that such useful generalities do possess common elements.

D. Cox suggests that rare books are those books "which replacement both in terms of cost and opportunity for replacement makes it prudent to lock them up."

John Cook Wyllie echoes a portion of the above definition. He defines rare books as "the un expendable parts of a library's collection."

Hellmut Lehmann-Haupt's thought on the nature of rare books holds that such items are "books whose physical depreciation would mean a documentary and artistic as well as financial loss."

Thus rare books are expensive and difficult to replace even if an institution can cover the expense. In addition, they are books whose preservation is of high priority because they represent a portion of the written or even artistic record of humanity. The popular image of a rare book as something from the fifteenth century and bound in leather is, therefore, while not necessarily incorrect, nevertheless, not exclusively correct.

A second elusive term is "special collections." William L. Joyce depicts the term as deliberately ambiguous, but then goes on to dispel the ambiguity with a definition of his own. He declares that "special collections" should designate "a concentration of books, not necessarily rare, on any given subject."

Marjorie Gray Wynne suggests that special collections materials are items that deserve or demand a kind of special treatment that the general stack area is unable to supply. It is important to note that neither writer suggests that rarity is a mandatory criterion for any book's entry into the kingdom of special collections. It is unfortunate, therefore, that so many of those who write about rare books use the two terms interchangeably. Although this writer will make some later mention of special collections, for the purposes of this paper, the two terms are distinctly different concepts.

The need for rare book collections in universities can be defended on at least two levels: the idealistic and the practical. There is perhaps no better way to make known the shortcomings of the idealistic appeals than to include some examples, consisting of quotations covering a twenty-six year span, 1959-1985. Clearly, idealism continues to influence the pleas made on behalf of rare books in libraries. Such pleas, however, lack the nuts and bolts specifics that appeal to increasingly budget-conscious administrators.

Especially worth reading are the books that record man's most significant ideas and actions. Rare book collections preserve these titles and others that for varying reasons are considered special.

The college is humanity conscious. . . . books are the heart of the college, and . . . rare books and materials have vitally to do with ideas, information, and the understanding of the human spirit.

Universities have, however, a peculiar obligation to the human record as they are the primary centres in our culture for the study of man and of nature.
The strength of every university lies in its ability to achieve a just evaluation of mankind's past attainments. Nothing brings such attainments so vividly to mind, or forges such a powerful link with the great figures of the past centuries, as a collection of books which they themselves handled and read, or the letters and other papers which they actually wrote.14

"'Except for a few glamour items its [a rare book library's] holdings are not likely to stir the public's imagination or open an administrator's purse.'"15

Such appeals to humanism may have sufficed in the affluent 1960s to justify a university's indulging in rare book collecting, but today's realities demand something more specific. In the words of John Bidwell, "'Except for a few glamour items its [a rare book library's] holdings are not likely to stir the public's imagination or open an administrator's purse.'"15

The topic of funding raises the issue of the basic processes that take place in a rare book library. These activities create a large-scale financial need that must be justified.

In order to have a properly functioning rare book library, at least four basic requirements must be met. First, there must be provision for the acquisition of new materials as well as for the development and refinement of current collections.16 Second, rare materials must be properly housed in a secure facility which will, nevertheless, guarantee their accessibility to researchers.17 Third, such a facility requires a staff with appropriate training, abilities, and knowledge.18 And finally, there must be a conservation and restoration program.19

The acquisitions of a rare book library may range from the rarest of fine, early printed books to relatively recent items printed on pulp paper. Likewise, such acquisitions may deal with either the exotic or the commonplace. The important point is that, as S. Roberts observes, the rare book collection must never become fossilized.20 No such collection is ever "complete" and final; there must be a provision for adding related materials as they are offered for sale.21 Inherent in this need for growth and development is a large-scale financial commitment.

Not only are rare books expensive to buy; they are also costly to house. Rare holdings must be secure from theft and other types of abuse to which the general holdings of any library fall prey. Because the lack of proper environmental controls can destroy the utility of a rare book as easily as can a careless patron, a rare book facility must also have systems to maintain environmental conditions best for the physical well-being of rare books.22 No university library building is inexpensive, but buildings to house rare books will always be "more expensive."

In order to be most useful, rare books must be described and made accessible, often in uncommon ways. A seventeenth-century illustrated edition of Ovid, besides being of interest to classical scholars and art historians, will also offer scholarly appeal because of its binding, the presence of a fore-edge painting, or the critical apparatus or notes that accompany the Latin, to name only a few possibilities. Such multifaceted insight taxes a library staff without specialized training and expertise.23 Only a staff with the necessary skill is able properly to assemble, arrange, care for, and interpret a rare book collection.24 Such additional skill and expertise translate into additional funding requirements.

The rare book library looks to the future in terms of conservation and preservation as well as in acquisitions. Preservation implies conservation—that is, maintaining the rare object in its original format for as long as possible.25 The corollary to this, of course, is the goal of preserving material for future use. This is no small objective. Indeed, as Richard G. Landon notes, "'When the instability of the materials themselves, particularly for the period after 1870, is taken into account the responsibility to provide research collections for future generations of scholars becomes awesome indeed.'"26 Needless to say, such responsibility also implies over the years an "'awesome' expenditure of funds."
To find the justification for the expenditures described above, one must briefly consider the history of higher education in this country. During the late nineteenth century, American universities and colleges began to feel the influence of the German universities. Thus research began to be a primary university objective. 

The lecture and the seminar slowly took precedence over the textbook and recitation. In short, scholarship was institutionalized and professionalized. With this development it may be said that the library became the center of the academic endeavour. And where in all this is the role of the rare book library? Martha M. Smith writes:

Intellectual sensitivity is a characteristic of the mature scholar, who, through the study of books, produces new ideas or integrates old ones into fresh interpretations for the benefit of present and future generations. Rare book collections play an important role in research because they preserve these books for study.

The primary justification for expending resources on the rare book library is its role in support of research and scholarship. This role is both general and extensive. The world of scholarly research is vast and changing. For example, who would have thought, twenty years ago, the time would come when advanced academic degrees would be granted in a discipline known as "Popular Culture?" Such a justification, though general, is important. Individual institutions, once they accept the premise, add their own institution-specific details to the "rare books for research" concept and, hence, to the collecting patterns.

Rare book collection development can be tied specifically to an institution's academic programs. The teaching and research needs of the faculty and the research needs of the students together create the basis on which an academic library collection is built. In short, for each academic rare book library, the key point is academic relevance. This is especially true if rare book acquisitions are funded by a library's general allocation and when such spending is in direct competition with that for periodical subscriptions, new books, or multiple copies for undergraduates. Awareness of the institutional collection policies and a knowledge of regional resources and cooperative plans is also of use in this area. Such resources and cooperative plans can guide rare book collection development decisions by suggesting where current holdings can support new areas of development or where new areas of development may lead to costly duplication.

F.W. Ratcliffe describes a 1976 purchase made by the John Rylands University of Manchester, details of which provide an excellent example of just how well the acquisitions of a university rare book library can be made to coincide with the teaching and research needs of faculty and students.

The outstanding 1976 purchase for the John Rylands University Library was a late thirteenth/early fourteenth century Anglo-Norman manuscript entitled La Vie Saint Edmund Le Rei. The purchase of this manuscript was important in the long history of Anglo-Norman studies in the university's French department. It complemented other similar primary research materials held by the library, and its acquisition was supported by large research collections in the Anglo-Norman area. As an item of paleography, the manuscript also made a distinctive contribution to the larger university manuscript holdings, all especially relevant because the university had at that time two lecturers in paleography. Indeed, the manuscript was already much in demand among Anglo-Norman scholars both within and outside the University. That the copy purchased was also textually superior to all other known copies was also significant. Ratcliffe draws a moral regarding this purchase and it deserves quoting.

Had the reasoning to [buy the manuscript]... been purely "bibliophilic," or even purely bibliographical, this purchase could not have been justified. As it is, the texts are of immediate relevance to university research as well as to university collections. Both historians and theologians supported strongly these acquisitions in the contexts of their subjects.

Rare book libraries are expensive to create, maintain, and develop. The academic institution that makes the necessary com-
mitment to such an enterprise can, however, expect a return on its investment. That return takes the form of support for the research needs, both current and, in the best of situations, even future, of the faculty, students, and academic programs. Such expenditure is little justified if the result is only an odd assortment of interesting collectibles which, as a group, lack the depth and thematic cohesion necessary to support serious research. When academic rare book collections are assembled to support research, other subjective but positive developments will take place. As William L. Joyce writes:

As such, the acquisition of these [i.e. rare] materials creates an aura of institutional success, participation in the act of scholarship and the creation of new knowledge through possession of valuable artifacts, all of which assist the institution in validating its purposes. 42

It is perhaps the importance of the "aura" described by Joyce that has led some institutions to make very poor decisions regarding the creation of rare book libraries. In many cases status rather than need has been the predominant motive. 43 It is, in such cases, as if an institution's administration had heard that a rare books library is now one of the "maturity symbols" of the American college or university. "The result, as Gordon N. Ray suggests, is often a paneled "treasure room" with locked cases and carpeting on the floor, not to mention scattered collections and star pieces that have been assembled without regard to the special interests of the faculty, and a curator converted from a librarian past his or her prime or the weakest member of the English department. 45 And all of this Ray characterizes as no more than "window dressing" of the most expensive and useless kind.

Just how realistic is it for all colleges and universities to become committed to rare books beyond special collections of local interest or in fields strictly limited by cost? Rare book "highspots" are increasingly more expensive, and seldom can their acquisition be justified in relation to the modest funds that a library can hope to have available for their purchase. 46 What service can a limited number of unrelated "highspots" render scholarly research? 47 When public funds are involved, another question arises. Can it be proper to subsidize with public funds what can only be termed the desire to acquire items simply because they are bibliographical rarities?

"Ratcliffe warns against the proliferation of small caches of rare books or even large ones that have no cohesion as collections."

F.W. Ratcliffe identifies three implications of the above concerns. He first suggests that it is unwise for new academic libraries, in the context, say, of American literature or English history, to attempt to build up primary resources in any depth. 48 He also maintains that it is reasonable for all colleges and universities only to accept certain kinds of gifts, provided that they do not lead to significant expenditures. 49 And, finally, Ratcliffe warns against the proliferation of small caches of rare books, or even large ones that have no cohesion as collections.

In order to illustrate the dangers he perceives, Ratcliffe writes:

A collection of manuscript and printed book "highspots" donated by a local man, Mr. Hart, to Blackburn Public Library . . . demonstrates similar dangers. The collection is a real cause of civic pride, but its role in scholarship is minimal, isolated as it is from any comparable material. 51

Ratcliffe continues:

Ask any Hardy scholar about the dispersal of that author's manuscripts, in accordance with his wishes, around various institutions. It may have guaranteed a Hardy presence in a great number of places, but it has put major obstacles in the way of editors. 52 Clearly "highspots" and piecemeal caches without the support of a proper scholarly and research context will not suffice as an academic rare book library. It may be better to do without the rare books library than to settle for expensive "crumbs" of minimal scholarly value. Moreover, such flawed collections will be
left to languish unless the parent institution exhibits a commitment to academic research on the highest level.  

At this point let us consider reasons for the appearance of so many ill-conceived rare book libraries and collections on the campuses of this nation. The current situation may be traced back to several sources. The first is the example set by the University of California in 1950, when a rare books and special collections department was deliberately planned and brought into existence. From coast to coast this example was emulated on numerous campuses, both large and not so large. In addition, at the turn of the last century, Yale University, in the interest of preservation, began actively to segregate the rarities in its general library holdings. Other institutions soon picked up on this notion and began checking their holdings for "rarities." Thus, few of the institutions that were inspired by the California example doubted that they had already in their possession the beginnings of a collection for the newly conceived rare books department.

Another factor, deeply ingrained in the American psyche, that contributed to the rise of academic rare book collections is the concept that "more is better." In the area of rare books, such a concept, without the proper critical scrutiny, can do more harm than good, especially when large sums of money become available for funding this dangerous endeavor. As we know, the fabulous 1960s were just such a time of bounty for American higher education. And as a result, Richard G. Landon observes, from Alberta to Florida, from Nova Scotia to New Mexico, any university library of any appreciable size and pretension contains a collection of Anglo-Irish literature.

Rare book librarians of the 1970s and 1980s face formidable obstacles to the growth and even the continued existence of some special or rare book collections. Among these are static or declining book budgets, together with increased competition for books, due in part to the limited availability of established rarities. In the wake of these developments, Landon perceives two trends. First, it would appear that large universities have been able to handle their commitment to developing research-level rare book collections. On the other hand, Landon believes that smaller universities and colleges have never really realized their commitment and are currently in even less of a position to continue the struggle. Landon continues:

There are a few instances where small institutions with important collections that they are unable to care for properly have agreed to transfer to a larger institution with better facilities. The arrangement worked out between Trinity College at the University of Toronto and the Thomas Fisher Rare Book Library is an example.

At the most extreme there is some indication that certain rare book libraries . . . will disappear altogether. A substantial part of the Pforzheimer Library is now being offered for sale, Hofstra University has closed its Rare Book and Special Collections Department, and the rare books from the Franklin Institute have come under the auctioneer's hammer. The above measures might strike the reader as drastic. There is, however, at least one moderate solution to the financing dilemma. It is a concept strongly backed by Martha M. Smith and involves cooperative collection development and resource sharing. Smith believes that the concept of self-sufficiency must be modified if research libraries are to meet their responsibilities to higher education. She suggests that the more important goal is not the acquisition of a greater number of books, but rather an improvement in the availability of a greater number of books. "Little used" library materials, Smith holds, present themselves most readily for sharing. In addition, the concept of cooperation among special subject collections and archives has already received much endorsement.

The guidelines Smith offers to small rare book libraries for cooperation in acquisitions are based upon the experience in such an enterprise of the rare book collection at the University of North Carolina at Chapel Hill and the Department of Special Collections at the University of North Carolina at Greensboro. Smith depicts this experience as successful and suggests it
could be an example for others. The first of five guidelines for such a relationship, considered by Smith to be essential, is that the cooperating institutions be within close proximity. A positive attitude on the part of the librarians involved is the second prerequisite. Third, there must be support for the plan from the concerned library administrators. The fourth element in the formula for success is agreement among participating librarians upon the criteria used in collecting books. Fifth, each participant must survey the holdings of his/her collection. Implicit in collective resource development, as outlined by Smith, is resource sharing. In the case of rare books, the concept of resource sharing clearly does not involve sending materials by interlibrary loan. It is the researcher who moves from library to library. Another aspect of resource sharing is the increased use of photocopies and microforms, when such copies will serve the researcher’s purpose. The debate on the relative merits of originals versus copies is outside the scope of this paper. Both arguments have their merits and each type of material can be used in ways the other cannot. It need not always be, as Stanley Pargellis maintains, that “the better the scholar, the more he insists upon seeing the rare book.”

“S. Roberts urges smaller institutions to build any comprehensive research collection around a person, place, or topic.”

At this point it is worthwhile to consider the fate of rare books in the “non-major” academic institution. Is there a useful presence for rare books in such libraries, especially given the problems and limitations presented above? The answer is yes and involves the concept of special collections. As Ratcliffe notes, it is entirely reasonable for newer institutions, for example, to build up collections relating to their collecting strengths. In the course of such collecting, they will acquire some costly, scarce or irreplaceable items. Similarly, S. Roberts urges smaller institutions to build any comprehensive research collection around a person, place or topic. Also of potential use would be a collection of sufficient material to illustrate the history of the book. There is, of course, no reason to believe that the above purposes cannot be served as well by the rare book collection of a major academic institution. In the case of such a collection, however, the question often becomes a matter of patrons. In particular, how many patrons are necessary or desirable? Likewise, what types of patrons should a rare book library seek to attract?

Richard G. Landon observed in 1979 that rare book collections are facing the problem of underutilization, often for the first time. Few people use such collections, relative to other library resources. Even worse, rare book librarians can, with some justification, complain that the last people to be aware of the resources they offer are their own faculty. In such cases it may be concluded that such a collection fails to make any measurable, active contribution to the intellectual life of a campus.

Publicity is the best remedy for the situation described above. Displays and exhibitions are one approach. Rare books on display appeal to curiosity about the old and antique and, often, to aesthetic sensibilities. On such occasions the books are eloquent in their own defense. Exhibitions speak to students, faculty and even on occasion to potential donors. Each exhibition presented by a rare book library ought to be the occasion for publishing a catalogue. Besides enhancing public awareness, such catalogues and similar publications offer the opportunity to interpret rare book holdings. S. Roberts suggested in 1967 that, in the absence of a national survey of rare book collections, it was only such exhibition catalogues that alerted the public to the existence and location of collections. Cross currents that pit the interests of rare book librarians against those of other librarians frequently surface within an ac-
academic library system. The source is a difference in point of view about library services. Stephen Ferguson writes:

Because curators [of rare books] deal mainly with objects as opposed to information, it makes it harder for them to relate to the theory that binds together their other library colleagues, many of whom think of themselves as “information professionals.”

Because the rare book librarian realizes that a well-preserved item has a value beyond its intellectual content, there can often be disagreement with the “information professionals” who do not necessarily believe that the destruction of a book’s physical integrity is a problem, provided the intellectual content survives.

It seems, therefore, that the role of a rare book collection in an academic library may be a very precise balancing act. On the one hand, there is the clear need to justify the collection in terms of its usefulness to scholars and researchers. On the other hand, there is the equally pressing need to preserve as physical objects the items in such a collection. The curator knows, probably far better than others, that use means wear and tear. Because there are perils implicit in erring in favor of either of these extremes, one suspects that there is no definitive answer for the use-versus-preservation dilemma. The issue must be resolved individually by each academic rare book library. The answer lies within the goals and objectives of the institution and the mission statement that governs the activities of its rare book facility.

Defining the patrons an academic rare book library should seek to attract is an equally difficult issue to resolve. Should rare book librarians agree, for example, with Lawrence Clark Powell, who writes the following?

We can dispose of teaching needs by the flat statement that rare books have small place in the undergraduate program. The very nature of rare books and manuscripts—their scarcity and their value—means that they cannot be subjected to steady and heavy use.

Clearly so drastic a proposition need not be the standard for all others. It should be obvious to all that a well-established academic rare book library serving scholars and researchers has, as well, the potential to serve many others. The case has been made for the use of rare materials by undergraduates. There are, in addition, uses to which a rare book library may be put by nonscholarly patrons. The extent to which any one academic rare book library’s basic role may be extended to serve nonresearch needs will depend, ultimately, upon its perception of its service mission.

Certain conclusions can be drawn from the discussion thus far. The concepts of rare book collections and special collections are not interchangeable, even though elements of one may appear in the other. For numerous very good reasons, an academic rare book library is an expensive enterprise simply to maintain, let alone to continue to develop. The proper and useful sort of rare book facility for an academic institution is first and foremost a working resource for research; an odd assortment of “highspots” is of no real value, save perhaps as window dressing. The institution that supports rare books with the necessary levels of funding has every right to expect a high degree of correlation between institutional goals and objectives and those of the rare book library. A properly established rare book library needs to publicize its resources to scholars and others. At the same time, each such library must strive to maintain conditions that will preserve its holdings physically and intellectually.

In addition, it should be apparent that many institutions that quite mistakenly in the past sought to create rare book libraries have, in truth, little or nothing of the sort. Those institutions that are quite unable to support financially a proper rare book collection or whose academic goals do not emphasize original research have two basic options. They might, in some cases, persevere through the establishment of cooperative collection development and resource sharing programs. On the other hand, they might be well advised to discontinue their attempts at rare book collecting per se and seek, instead, to develop special collections that will reflect their particular educational interests and goals.
REFERENCES AND NOTES


2. Ibid.

3. Ibid.


10. The term "rare books" will also be understood here to include manuscripts.


17. Landon, "Rare and Special Collections," p.469.


19. Landon, "Rare and Special Collections," p.469.

20. Roberts, "Relevance of Rare Book Collections," p.110.


23. Traister, "Rare Book Collections," p.115.

24. Landon, "Rare and Special Collections," p.469; Poynton, "The Valuable Book," p.179.


26. Landon, "Rare and Special Collections," p.471.


28. Ibid.

29. Ibid.


33. Powell, "Policy and Administration," p.7; Roberts, "Relevance of Rare Book Collections," p.110.

34. Cox, "Rare Books," p.87.


37. Ibid.
38. Ibid.
39. Ibid.
40. Ibid.
41. Ibid.
42. Joyce, "Evolution of the Concept," p.27.
44. Ibid.
45. Ibid.
46. Roberts, "Relevance of Rare Book Collections," p.113.
47. Ibid, p.114.
49. Ibid.
50. Ibid.
51. Ibid., p.232.
52. Ibid., p.231.
53. Landon, "Rare and Special Collections," p.468.
54. Ibid., p.469.
55. Ibid.
57. Ibid.
58. Landon, "Rare and Special Collections," p.467.
59. Ibid., p.469.
61. Ibid., p.161.
62. Landon, "Rare and Special Collections," p.468.
63. Ibid., p.469.
64. Ibid., p.470.
65. Ibid.
67. Ibid.
68. Ibid.
69. Ibid., p.163.
70. Ibid., p.164.
71. Ibid., p.163.
72. Ibid.
73. Ibid.
74. Ibid., p.161.
78. Ibid., p.227.
79. Roberts, "Relevance of Rare Book Collections," p.114.
81. Landon, "Rare And Special Collections," p.470.
82. Traister, "Rare Book Collections," p.115.
83. Ibid., p.117.
84. Ibid., p.116.
85. Ibid., p.115.
86. Ibid., p.117.
87. Ibid.
88. Ibid.
89. Roberts, "Relevance of Rare Book Collections," p.115.
90. Ferguson, "Rare Books," p.165.
93. See, for example, Randolph G. Adams, "Who Uses a Library of Rare Books?" *English Institute Annual* (1940), p.144-63.
The Humanistic Scholars Project: A Study of Attitudes and Behavior Concerning Collection Storage and Technology

Wendy P. Lougee, Mark Sandler, and Linda L. Parker

An assessment of humanist research behaviors and attitudes toward remote storage of collections and technology was conducted at the University of Michigan Library. In an attempt to attenuate negative attitudes toward remote shelving through enhanced bibliographic access, project participants were given direct access to online systems containing records for stored titles. Results suggested this specific intervention was not successful given negative attitudes toward technology. However, attitudes toward the Library grew more positive and increased use of the remote shelving facility was reported. Findings are interpreted in terms of faculty-librarian interactions and faculty acceptance of library programs.

Remote storage of library collections is both a long-standing issue and a growing phenomenon. Libraries have long pondered the use of remotely housed collections and how best to select materials for those collections. During the halcyon days when new construction projects were prevalent, issues of remote storage were less pressing and libraries focused on expanding collections within open-stack facilities. But as these boom days waned, libraries once again faced the unpopular decision to develop more economical facilities. While permanent, closed-access facilities for books are not in-expensive, cost studies of storage utilizing a closed-access organization show a significant savings over the cost of conventional, open-access shelving.

Several studies conducted in the 1970s pointed to the problems experienced by libraries as they implemented collection storage programs. A 1974 study revealed that of 105 libraries, 37 were storing significant portions of their collection and 13 more said that storage was imminent. The same survey suggested few libraries had guidelines for book storage, and few had developed procedures for complete record keeping. A more recent survey of storage programs of 22 research libraries conducted by the Association for Research Libraries in 1977 reported little uniformity among libraries in terms of criteria for selecting materials for storage, document

Wendy P. Lougee, is Head, Graduate Library and Mark Sandler is Coordinator, Graduate Library Collection, at the University of Michigan, Ann Arbor, Michigan 48109-1205. Linda L. Parker is Chair, Central Reference Services, at the University of Nebraska, Lincoln, Nebraska 68588-0410. The authors wish to thank project consultants Dr. Margaret Taylor and Dr. Elaine Hochman for their assistance in project design and data analysis. Funding for the project was provided by the Council on Library Resources and the Andrew W. Mellon Foundation.
delivery, bibliographic access, or preservation. Another point was the distinct lack of information that could be used by a manager in planning for an optimal storage facility. More specifically, there is an absence of reported efforts to analyze user attitudes toward storage.¹

One common theme precedes the literature on remote storage of collections: remote storage is an unpopular and often-times untenable solution for scholars. Storage in a remote facility leads to disagreements on which books should be stored, time lags for delivery, loss of the opportunity to browse the shelves, problems in accurate bibliographic access, and deterioration of books as a result of inadequate environmental controls in the storage facility. The concept of remote storage of collections has often been most vigorously opposed by scholars in the humanities. Perhaps chief among the complaints raised by humanists is the use of book selection criteria based on age or frequency of use. Because the humanities tend to re-examine the classics with every generation, storage selection models based upon use criteria frequently do not appear relevant to humanities disciplines.²

Given the nature of research strategies in the humanities, it is quite understandable that humanists should resist remote storage of library collections. Studies on the research patterns of humanists indicate that they differ from their colleagues in the sciences or social sciences in their approach to information, age and form of material used, and the extent of immediate contact with other researchers.³ Documentation of research behaviors of humanists also suggests other characteristics that may be antithetical to using remote collections, e.g., an inclination to work alone, a lack of delegation of their literature searching, and a reliance on browsing as a critical strategy in indentifying the materials of research.⁷

THE UNIVERSITY OF MICHIGAN PROGRAM

The remote shelving program of the University of Michigan has attempted to ameliorate many of the negative associations with storage. The Buhr Shelving Facility, opened in 1981, has a closed access, compact shelving arrangement and is environmentally controlled for temperature and humidity. Records are created for stored items in the library's online system. Delivery turnaround has typically been within one day, and reading and photocopy facilities are provided on-site. In addition, the storage collection is considered dynamic and volumes can be returned to open stacks if use patterns change.

"To assess the effectiveness of the Michigan program, the library proposed to investigate the attitudinal factors surrounding humanistic faculty's acceptance of remotely shelved collections."

To assess the effectiveness of the Michigan program, the library proposed to investigate the attitudinal factors surrounding humanistic faculty's acceptance of remotely shelved collections. Further, with funding from the Council on Library Resources and the Andrew W. Mellon Foundation, the library also proposed to assess whether attitudes could be improved by creating machine-readable cataloging records for remotely shelved items in relevant disciplines and by providing enhanced bibliographic access through RLIN, the online system of the Research Libraries Group that is used by Michigan for cataloging. Access to RLIN in the academic departments provided an opportunity to analyze a number of interesting issues surrounding the larger questions of immediate physical availability of collections vs. less proximate forms of access, e.g., remote shelving, interlibrary loan or surrogate microformats.

The Humanistic Scholars Project began in January 1983 and ended in December 1985. The study population was composed of 212 faculty in the departments of English and History and the American Culture program. The study was subsequently extended to include 254 graduate students in the same departments. This
grant funding enabled the library to create approximately 50,000 machine-readable records in RLIN, supporting the effort to measure effects of increased bibliographic access upon attitudes toward remote shelving.

In addition to the information concerning attitudes toward remote shelving, the project accumulated information that may provide direction for future programs in research libraries. Specifically, the following issues were examined:

1. alterations in humanistic research strategies brought about by changes in library programs and services, e.g., preservation, technology, and remotely housed collections;
2. use patterns of humanities materials in remotely shelved collections;
3. general library use patterns that may suggest policies for future selection of titles for remote shelving and for retrospective record conversion projects;
4. the effect of patron access to online systems on research behaviors and attitudes;
5. training strategies for online systems; and
6. characteristics of humanities researchers that suggest strategies for future library programs.

METHODOLOGY

The Humanistic Scholars Project included three major efforts: (1) record conversion activities, (2) creation of an instructional/outreach program and its evaluation, and (3) administration of a survey to faculty and graduate students in participating departments.

Record Conversion

The creation of machine-readable records in RLIN was a significant component of the Humanistic Scholars Project. Concentrating on the subject areas most heavily used by the scholars in our study population, titles from the relevant classifications housed in the Buhr Facility were selected for conversion in RLIN. All titles in storage were also reflected in Geac, the library's online circulation system. As a result, project participants had sophisticated bibliographic access to a select group of relevant titles from storage through RLIN and author/title/call number access to all stored titles via Geac.

Three RLIN terminals were installed in the English and History Departments and in a library classroom for use by project participants. These terminals were available through December 1985.

RLIN Training

The training component of the project called for individual and group sessions with faculty members and graduate students to demonstrate RLIN's general capabilities and its possible applications in the humanities, including online access to materials at Buhr. During the planning phase, a package of instructional materials was designed that was appropriate to this unique audience and consistent with the hypotheses of the grant. Through direct mailings, posted announcements, newsletters, and general user education activities conducted by the Graduate Library Reference staff, faculty and student participation was encouraged. Finally, evaluation forms were devised to monitor the effectiveness of both the trainers and the instructional materials.

The group reflected a wide range of experience with computers. While many of those trained were complete novices, at least ten percent of the faculty who were trained were owners of microcomputers and thus came to RLIN with some understanding of both the advantages and limitations of this technology. The project employed a graduated set of training materials that moved from the very basic to the sophisticated with the explanations and illustrations drawn from the humanities wherever possible.

Comments from the faculty training evaluation forms indicated a generally positive response to the program and to RLIN as a research tool, although the statements also reflected perceptions of RLIN's shortcomings. Sample comments from these evaluations that reflect the range of reactions include the following:

A convenient way to check bibliographic citations and footnotes in proofreading my publications. On the occasions when I do need to find current works in fields outside of my specialty, I
anticipate it will be very useful especially by using combined topic headings—something I couldn't do in a regular catalog.

I found the system useful for confirming things I knew or partly knew, but not useful for discovery.

Useful not only in research but in the organization of new courses.

My lack of use is mainly because I have a fairly good command of the sources I most regularly use. The database has not revealed much that is new to me. Perhaps when the terminals are more ubiquitous and the database is larger, I will have more reason to use it with regularity.

Advanced training sessions were offered to the faculty in Winter 1984. In addition, a newsletter was produced to foster awareness of and continued participation in the project.

Survey Design

During the summer of 1983, the project staff worked simultaneously on the design of the first questionnaire and on the training program, both of which were to be administered in the Fall 1983 academic term. The purpose of the first questionnaire was to measure faculty attitudes and use patterns prior to the intervention of the project.

The questionnaire included three components: a section on current library use, a section to gather demographic information, and a series of attitudinal statements. During the Fall 1983 term, 212 questionnaires were mailed to faculty members in English, History, and American Culture, of which 119 were returned, a response rate of 56 percent. Eighty-eight faculty members subsequently participated in the RLIN training sessions. The project was later expanded to include graduate students in these three academic programs.

When the availability of RLIN ended, the faculty and students were again surveyed. The second questionnaire duplicated the majority of the initial questions but also included questions regarding library services initiated in the intervening years (e.g., public access to the Geac circulation system) that might have affected behavior and attitudes. In December 1985, 195 questionnaires were mailed to the faculty with a response rate of 41 percent.

SURVEY RESULTS

Population

At the outset, a few generalizations about the sample population can be offered based on the data from the completed questionnaires. The faculty respondents to the first questionnaire were predominantly male senior faculty at the rank of full professor, over 40, tenured, and with the University for 10 years or more. Forty-four percent were in the English Department, 31 percent in History and 25 percent in the American Culture program (more detailed information about the samples, reflecting respondents to the first questionnaire, is shown in appendix A). No significant differences in population characteristics were detected in the sample populations responding to the first and second administrations of the questionnaire.

Both the first and second questionnaires included a series of behavioral questions regarding the respondents' use of the library and its materials and services, as well as attitudinal questions about library storage and technology. Unless otherwise noted, the analysis of the research behavior questions reported below is based upon faculty responses to the first questionnaire only, while the attitudinal responses are compared across the two administrations of the questionnaire.

"Humanities scholars involved in the project were heavy library users; the modal response (57.6 percent) was weekly use of the central humanities and social science library."

BEHAVIORAL MEASURES

Library and Computerized Access

The two surveys provided a wealth of information about research behaviors and library use. In general, it was clear that the humanities scholars involved in the project were heavy library users; the modal response (57.6 percent) was weekly use of the central humanities and social science
library. Although no significant difference by rank was found, assistant and associate professors were more likely to report daily use of the library (22.2 percent and 30.8 percent respectively) than their full professor colleagues (14.3 percent). Higher-ranked faculty were more likely to report having checked out large numbers of volumes, yet there was also a negative relationship within the senior ranks between faculty age and the number of items checked out.

Respondents typically reported that they “very often” or “often” work alone (96 percent), gather their own bibliographic citations (78 percent) and retrieve their own materials (87 percent). In general, there was modest use reported by all categories of faculty for library service points (e.g., catalog information, government documents center, reference desk). A majority of respondents indicated that they “never” used online databases or online utilities such as RLIN or OCLC in the library. The data did reveal a significant inverse relationship between age and the use of automation; younger faculty (aged 20 to 40 years) were significantly more likely than their older counterparts to use both online databases \((\chi^2 = 34.67, p < .01)\) and RLIN/OCLC \((\chi^2 = 24.84, p < .05)\).

**Use of Remote Collections**

The survey prompted the faculty to describe their use of remote collections (i.e., interlibrary loan or the Buhr Shelving Facility) as well as reasons for not using these services. For both interlibrary loan and retrieval from the Buhr facility, the majority of respondents indicated that these services were not used because the services were not needed. The questions related to the Buhr facility also give some indication of the perceived effectiveness of the remote shelving program. As noted above, the most common reason given for not using the Buhr facility was that items held there were not needed, followed in order of frequency by “retrieval takes too long,” “too difficult to determine what is in storage,” and “unaware of library storage collection.” A similar response pattern was elicited in the second questionnaire, although significantly fewer respondents indicated that retrieval of Buhr volumes takes too long (5.1 percent in 1985 as compared with 20.2 percent in 1983).

The most extensive use of the Buhr Shelving Facility was concentrated among associate professors. This rank was also the most likely to report that the retrieval process took too long and that it was difficult to determine which items were shelved at Buhr. Although only a few faculty members reported that they were unaware of Buhr (4.3 percent), those choosing this response were concentrated in the more junior ranks.

**Bibliographic Sources and Computer Use**

The survey population was asked how frequently they used particular sources of bibliographic information. The most frequently cited bibliographic sources for which some regular use was indicated (i.e., excluding response “never” and “rarely”) were the card catalog (97 percent) and citations in books and articles (96 percent). Other commonly cited means of identifying relevant materials were indexes and abstracts (74 percent), browsing the open stacks (83 percent), subject bibliographies (86 percent), and book reviews (90 percent). The least used sources were computerized databases and librarians.

Age and rank did not prove to be good predictors of use of particular tools, but those at the lower ranks tended to use a wider array of sources more intensively than their senior colleagues. Another suggestive finding was that female faculty were more likely than males to report reliance upon colleagues, conferences, and librarians as sources of bibliographic information. Gender also proved to be related significantly to computer use; more women (30.6 percent) than men (16.2 percent) reported use of both mainframe and microcomputing systems \((p < .05)\).

**RLIN Use**

Those individuals who responded to the second questionnaire were asked about their use of RLIN following training. Of the 78 individuals responding, 48 indicated that they were trained to use RLIN and 31 respondents actually used RLIN subsequent to training. The two most
commonly cited reasons for nonuse of RLIN were that they "did not believe RLIN would benefit their work" (49 percent) or that they "preferred to use the card catalog" (51 percent).

The forty-eight faculty who did use RLIN were asked what system characteristics they found most desirable. The fact that they could obtain information about collections at other universities (67 percent), the ability to compile a quick bibliography (44 percent), and the ability to search by key words (40 percent) were most frequently cited as desirable attributes. Interestingly, only two individuals indicated that they liked RLIN because of the ability to search the library's serials records, all of which are contained within the database.

The two major reasons checked to indicate why respondents did not like RLIN were that they used it so infrequently that they forgot the commands or that it did not contain sufficient records for items in the Buhr Shelving Facility.

Finally, the 78 faculty respondents to the second questionnaire were asked to select from a list of twelve possible effects those that best indicated how their involvement in the Humanistic Scholars Project had impacted their work. Respondents could select more than one effect. In general, the most frequent response was that there was no impact on work or behavior, although those respondents who had used RLIN were significantly more likely to report that the Humanistic Scholars Program had an impact on their work (F statistic = 33.226, p < .01).

ATTITUDINAL MEASURES

The questionnaire included thirty-one attitudinal statements that formed three distinct scales: attitude toward remote shelving (storage), attitude toward technology, and attitude toward the Library. For each attitudinal statement, respondents were asked to indicate the extent of their agreement along a five-point continuum ranging from "strongly disagree" to "strongly agree." Items were randomly distributed in the attitude portion of the questionnaire and their directionality was varied to minimize response bias. Factor analysis was performed to ensure the reliability of the three scales and the results showed acceptable levels of correlation among the scaled items. The three scales and the individual statements are listed in appendix B.

Analysis of the attitudinal portion of the questionnaire focused on the relationship of the responses to the demographic and behavioral factors described above (except where noted the following analysis focuses on responses to the first administration of the questionnaire). Means were calculated based upon the assumption that respondents viewed the five points on the scales as equidistant and distributed about a neutral point of 3.0. The analysis showed that overall the most positive attitudes were recorded on the "Library" scale (3.86), followed respectively by the scales for "technology" (3.76), and "remote shelving" (3.19). The mean score for each of the scales was above the neutral point, indicating overall favorable attitudes toward each of the three factors.

Remote Shelving

Thirteen attitudinal questions were combined to form a single scale measuring degrees of acceptance or rejection of remote shelving (storage). Age and rank did not prove to be related significantly to storage attitudes, but there was a tendency for older and more senior faculty to hold more positive attitudes toward the concept of remote shelving (t-value = 2.0754, p < .05). Not surprisingly, there was a significant inverse relationship (r = -.39) between stated preference for browsing at the shelves and attitudes toward storage.

Those stating in the behavioral section of the questionnaire that retrieval from Buhr was either "too hard" or "too slow" scored significantly lower on the remote shelving attitude scale than those choosing other responses (p < .01). Those not needing Buhr items were likely to have more positive attitudes toward remote shelving.

The introduction of library technology (RLIN) does not appear to have had an effect upon either reported use of or attitudes toward remote shelving—that is,
"The introduction of library technology (RLIN) does not appear to have had an effect upon either reported use of or attitudes toward remote shelving."

the availability of this enhanced access tool did not significantly alter faculty attitudes toward storage.

Interestingly, there did not appear to be a relationship between those faculty who indicated two or more reasons for infrequent use of the Buhr storage collection and their attitude toward storage. More specifically, the assumption that those with a larger number of negative perceptions of the Buhr service (as reflected in two or three reasons for nonuse of the Buhr storage collection) might evidence more negative attitudes toward remote shelving in general was not substantiated. A significant negative relationship (t-value = -2.9357, p < .01) was found, however, between those listing two or more reasons for not using Buhr and their overall attitude toward the library. One possible interpretation is that those with a number of reasons for not using Buhr tended to generalize their concern toward the library rather than restricting their negative attitudes toward remote shelving alone.

Technology Attitudes
Technology attitudes were related to the use of computing resources. There was a significant positive relationship between use of more than one computing resource and positive attitude toward technology in general (t-value = 3.0873, p < .01). Rank and age also proved to be significantly related to technology attitude. Older and more senior ranked faculty were more likely to express negative attitudes toward technology. Other suggestive findings include the fact that faculty with overall positive feelings about technology were more likely than others to work collaboratively and to rely upon peers for information. Not surprisingly, it is this group of faculty who reported higher use of RLIN.

Library Attitudes
Faculty giving overall positive responses on library attitude statements were significantly more likely to be older and more advanced in rank (t-value = 3.2940, p < .01). This group indicated they were likely to have others gather citations for them, but subsequently came to retrieve their own materials from the library. These faculty members with positive attitudes toward the library also showed low use of technology, suggesting an inverse relationship between these two factors (t-value = 3.7604, p < .01).

Attitude Change
Responses were analyzed for those faculty completing both the first and second questionnaires (N=55) to measure attitudinal change in the two intervening years. Little change was noted in attitudes toward remote shelving or technology. A significant positive change, however, was noted in attitude toward the library (p < .01). While logically one might assume this change was an outgrowth of a positive experience with RLIN, subsequent analysis showed that RLIN users scored lower than nonusers on the library attitude scale. A more likely explanation for the overall improved attitude toward the library is that faculty members appreciated the initiatives taken by staff regardless of whether they took advantage of the opportunity to use RLIN.

DISCUSSION AND CONCLUSIONS
What conclusions can be drawn from these complex findings? First, the characteristics of the population suggest some changes in research behavior that are likely to emerge in the coming decade as a significant number of senior faculty become less active or retire. The cohort of associate professors (or those roughly 31-40 years of age) uses the library most intensively and draws upon remotely housed collections most frequently. It is also this group that seems more inclined to try new methods of accessing bibliographic information such as library automation might afford.

A second generalization suggested by the project results is that a technological
intervention for attenuating attitudes toward remote shelving may have been ineffective given generally low levels of familiarity with computerized systems and the prevailing bias against technology at the time. As one faculty member commented, behaviors may change when terminals are more ubiquitous. At the time of the survey, however, interactions with computers were infrequent and some humanist faculty were wary. Further, because positive attitudes toward the library were associated with negative attitudes toward technology, we may have been trying to improve perceptions of library services such as remote shelving using an unattractive medium. Interestingly, those who were RLIN users actually had more negative attitudes toward storage than their nonuser colleagues.

One confounding aspect of the RLIN system that occurred during the project was the reconfiguration of the RLIN database, no longer allowing a user to isolate easily the records of a single institution. One could argue that the lack of the desired impact of RLIN on remote shelving attitudes was related to the inability to search readily (and browse) University of Michigan records. It was also clear from faculty responses that RLIN was perceived to be less than user friendly and this could have had an effect on participant attitudes. Yet during the project the Library also brought up a publicly accessible and easy-to-use local circulation system, Geac, and input into that database records for all items housed at Buhr. The second questionnaire included questions about use of Geac, yet no change in attitudes toward remote shelving was associated with Geac use.

Our findings suggest that Michigan’s remote shelving facility, although not universally accepted by faculty, has been successful. Overall attitude scores were above the neutral point, and responses to individual statements about the preservation role of remote shelving reflected a basic understanding of the rationale and imperative of remotely shelved collections. Perceptions of retrieval time noticeably improved between the two surveys as well. Although RLIN may not have ameliorated negative attitudes, an increased use of Buhr was reported on the second questionnaire without attitudes becoming more negative. If nothing else, the program may have increased awareness of the Buhr Facility and methods of access.

An indirect outcome of the Humanistic Scholars Project was an increase in attention to and interaction with faculty. Not surprisingly, attitudes toward the library improved during the course of the project. Also, those who had others gather citations and perform other front-end library work for them were more positive about the library. These findings reflect two principles libraries might consider in developing programs for faculty. First, meaningful interactions and efforts to become involved in research strategies may have a halo effect on overall faculty support of libraries. Secondly, efforts to remove obstacles from library use or streamline faculty-library interactions may also be advantageous.

There are interesting questions that are yet unresolved concerning the immediate availability of materials. During 1986, the library implemented a document delivery program for faculty. Humanities scholars have proved to be among the heaviest users. Will this service and its potential for making a remote location transparent for the user have an impact on acceptance of remote shelving? As libraries develop more extensive shared resources programs, what will be the faculty reaction? Our findings suggest that faculty may reject such alternatives in principle but still become heavier and more effective users of remotely held resources. In the long run this outcome of making faculty more effective researchers may result in improving attitudes. In the short run, however, it is perhaps too much to ask that faculty not only use a remotely housed collection but profess to like it as well.

Library technology will increase dramatically in the coming years—online catalogs, expert systems, textual datafiles. It is as yet unclear how various segments of the faculty will respond to these developments. Our experiences during this program have provided no definitive answers to what the future holds. Yet, our finding that involvement with this program improved overall attitudes toward the li-
library, despite specific concerns about such issues as remote shelving and convenience of access, suggests a need for greater interaction between faculty and library staff. It would appear that creating avenues for involvement and dialogue fosters a generally positive climate conducive to finding mutually acceptable solutions to library/research problems. Both librarians and faculty involved with the Humanistic Scholars Project claimed to gain a greater awareness and appreciation of the problems facing their counterparts. It is anticipated that this enhanced understanding will result in the provision of better library service offered to a more supportive campus community.

REFERENCES AND NOTES


8. Additional monographic titles in English language and literature were converted on other grant funds relevant to the Humanistic Scholars Project. Nearly all of the Library’s serials records were converted using Title IIC funds. Of the 2,050,000 titles in the University Library collections, 275,000 titles (13 percent of the collection) were retrospectively converted. A total of 850,000 titles, or 40 percent of the collection’s bibliographic records were in machine-readable form and thus available via RLINE at the initiation of the project. In addition, RLINE records were available through the Library’s publicly accessible circulation system, Geac, as were all Buhr titles.

APPENDIX A. PROFILE OF SAMPLE POPULATION

SAMPLE DISTRIBUTION BY SEX

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
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<tr>
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SAMPLE DISTRIBUTION BY RANK

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<td>Assistant Prof.</td>
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<td>15.1</td>
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<tr>
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<tr>
<td>Prof.</td>
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<td>58.8</td>
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SAMPLE DISTRIBUTION BY AGE

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<td>100.0</td>
</tr>
</tbody>
</table>

APPENDIX B: ATTITUDE STATEMENTS CLUSTERED BY SCALE

Storage

1. Microforms are an acceptable medium, given the necessity of preserving deteriorating books.
2. Library books in poor condition should be protected in a restricted area.
3. Finding relevant materials for research is hindered by the inability to browse shelves in library storage collections.
4. Lack of current use is a reasonable criterion for storing library materials.
5. The age of library materials is a reasonable criterion for removing materials to a restricted-access location.
6. Library materials should be immediately accessible to be useful for research.
7. Storage of portions of the library’s collections is a realistic solution to constraints of available space.
8. Borrowing books from non-UM libraries (i.e., interlibrary loan) is an acceptable method of obtaining materials for scholarly activities.
9. Storage of the library’s collections undermines scholarship and research.
10. Microforms are a better solution to space constraints than storing library materials in closed-access stacks.
11. Placing library materials in storage does not significantly reduce a researcher’s use of these items.
12. Microformats are an acceptable substitute for printed materials.
13. Geographic dispersion of library materials on campus presents obstacles for users.

The Library

1. Library staff are a helpful source of information about library services and policies.
2. Card catalog entries provide too little information about library materials.
3. Library staff are an essential source of bibliographic information.
4. The Library presents obstacles for research and scholarship.
5. The Library provides critical support for research on campus.
6. Card catalogs are frustrating to use because of their complexity.

Technology

1. Scholarly use of computers will have a positive effect on the academic environment.
2. Computers are too impersonal to be effective.
3. The emphasis on computers in universities will have a negative effect on the quality of education.
5. The use of computers to share information with others will benefit scholarly communication.
6. Computers can significantly improve the efficiency of libraries.
7. Word processors reduce creativity in scholarly writing.
8. Computers will help scholars use libraries more effectively.
9. The need for complex technical skills makes effective use of computers by scholars problematic.
10. Library computer systems cannot accommodate individual strategies for conducting research.
11. Computers will have a positive effect on patterns of scholarly communication.
12. Electronic publishing (e.g., the creation, distribution and access of publications by computer) will diminish the quality of scholarly publications.

NOTE: Response choices for all statements were provided on a five point scale ranging from “strongly disagree” to “strongly agree.”
Electronic Information and Research Library Technical Services

Peter S. Graham

The relation of libraries to the electronic information explosion has been a focus of discussion for several years, but the impact of this explosion on the technical services function within libraries has not been adequately explored. In what follows, my contention is that technical services are not solely dependent on decisions their libraries make regarding electronic information. They should be a driving agent as well.

I. ISSUES AND CONTEXTS

Some of the new contexts in which our research libraries technical services departments operate include the following:

1. First, the electronic library is coming into being within the context of the university: information in electronic form is increasing in importance. For a full development of this context, see the excellent article by David Lewis, "Inventing the Electronic University." ¹

Larger and larger quantities of information are appearing electronically, although they are still small in proportion to the quantities we expect in a few years. Online databases are now numbered in the thousands with hundreds more appearing each year. Local academic files of electronic information are being created at a rate that no one can guess; and CD-ROMs versions of over two hundred databases have been published. ² Most CD-ROMs are indexes such as Current Contents, InfoTrac, PsycLit, and Medline, but textual and statistical data are also being published in this form; for example census data, the Oxford English Dictionary, the Medieval and Early Modern Data Bank, and the Thesaurus Linguae Graecae.

2. There is broad OPAC availability. There is, however, wide variation in how these are made available to patrons: in-building only, library star networks, dial-up access, limited LAN availability, and campus-wide network access. Wide campus OPAC availability is generally viewed as a desideratum.

3. The automation of technical services has largely been accomplished and related issues are fully understood. There are few then there is e-mail: Bitnet, Arpanet, Internet, NSFnet, NYSErnnet, ALAnet, AppleLink, Compuserve and The Source are all in heavy use among scholars and many other groups. It is hard to know how much data goes over these lines in addition to correspondence. We do know that Kermit, the communications program developed at Columbia University, is enormously popular among academics, and one of its virtues is its file-transfer capability. ³

There is greatly increased use of electronic information at some of our universities. This is especially true at campuses where the computing services have facilitated its availability by providing communication networks, e.g., Michigan, Stanford, Carnegie-Mellon.

Peter S. Graham is Associate Vice President for Information Services and Associate University Librarian for Technical and Automated Services, Rutgers University Libraries, New Brunswick, New Jersey 08903.

²
libraries in the country that have not been automated to some extent. Meanwhile, it is also evident that the present level of automation cannot keep up with traditional tasks. One example is the British Library’s recent announcement that it would cut by one half the fullness of much of its cataloging in order to process the remainder more promptly.

"Our traditional staffing definitions are more and more open to question."

4. Our traditional staffing definitions are more and more open to question. There is difficulty now in finding technical services staff, especially catalogers, who have the bibliographic skills, the judgment, and the managerial skills we need. We also need staff who have skills and experience with electronic technology or have the self-starting ability to obtain them quickly. When we do find good staff they are often very good indeed; but the supply is limited.

5. Friendly interfaces: The concept of the integrated information system is fading. Historically, our goal in technical services has been to provide the user with a single place to search and a single tool. But just as we began to want an integrated monographic acquisitions, cataloging and circulation system, the idea of linking abstract-and-index databases to serials holdings raised our expectations. We now know that we will never have all necessary information accessible through a single file. We need to turn our attention to user-friendly interfaces.

6. MRDFs, or computer files: Most research libraries are cataloging machine-readable data files. Some have only cataloged a few. Some libraries are providing bibliographic access to large quantities of commercial and private databases, both for those owned by the library and for those not owned, with very considerable implications for change in what libraries are and how we do things.

7. Electronic publishing: There isn’t much yet but it will grow. Libraries will presumably have to provide access.

8. On-site commercial databases: Many campuses are now mounting major commercial databases locally to provide on-site searching. The universities include Carnegie-Mellon, University of Pennsylvania, Columbia, Georgia Tech, Stanford, and Rutgers. These databases are often linked to other types of library information. Access to these databases can be through the OPAC and other library offerings.

9. Local information files: Job files, fellowship announcements, campus events, news, advice sources, research in progress, housing files, community information, vertical file-like files are increasingly being made electronically available on campus, often through the library system or one adjacent to it. These may be linked to the OPAC.

10. Full-text in electronic form is becoming more common. Special libraries have long sought to provide full-text information. It is technically possible to have library information systems that provide full electronic texts. Facsimile transmission is an early manifestation of this possibility; so is the development of broadband image transmission from media centers. The libraries at Rutgers and Princeton have been funded by the National Endowment for the Humanities, (NEH) to plan a Center for Machine-Readable Texts in the Humanities. Various forms of optical disk (CD-Rom, WORM) and high-density magnetic storage, and high-bandwidth transmission systems will increase the technological attractiveness of full-text provision.

11. Information immediacy is increasing: Libraries must provide more timely access to information. The timeliness of access can be arrayed on a continuum from the immediate to the archival. (On the one hand we have provided quick access to recent data, and on the other we have provided slower access to historical knowledge.) Typically, our bibliographic access tools have been effective in inverse proportion to the timeliness requirement of the information. Electronic information places a premium on immediacy of access.
to information, but our techniques for creating bibliographic tools are best equipped for the archival. This must change if libraries are to be properly effective.

II. TECHNICAL SERVICES DEFINITIONS

Technical services of libraries are primarily responsible for the acquisition of materials and their organization. For pragmatic reasons both circulation systems and preservation activities have sometimes been included in the technical services responsibility. But in general the purview of technical services has been recognized as the buying and receiving of selected materials, and their organization for use: acquisitions, gifts and exchange, serials control, cataloging: from selection to shelf, mark it and park it. Up until very recently, technology has not changed that mission.

There are three distinctive but implicit assumptions in the traditional technical services role that can no longer be taken for granted.

Prediction of use: The traditional role calls for information provision predictive of use. The great bulk of the information provided by libraries has been acquired in advance of expected need on behalf of users who did not yet know of their need. Prediction of use has been both the pride and the bane of collection development policies—one need only mention the Pittsburgh study—and it is the driving force behind cooperative programs at all levels. The best interests of our users require us to predict their needs as best we can; however, provision of information on demand can be expected to rise with the availability of electronic information, requiring much more responsive acquisition and delivery systems.

Ownership: The traditional technical services role assumes library ownership of information. A library acquires information, then organizes it, makes it available, and preserves it. However, we increasingly recognize that there is information not owned by the library that we must make available to our users. We have done this in the past for serials we haven’t owned, through our printed journal indexes; we are increasingly making this happen through what we call our catalogs. This includes catalog information about the full range of GPO documents, the databases in the computer center, or the holdings of the Center for Research Libraries.

Hard copy: Our traditional technical service role has assumed hard copy. We have traditionally bought and cataloged books, journals, films, tapes, records, floppy disks and CD-ROMs. We now must confront library and user needs for access to machine-readable files that have extremely itinerant lives. At Rutgers, for example, is being cataloged in the library instructional software owned by the computer center. Kinko’s and IBM issue these programs on individual floppy disks; but in the Rutgers pilot program, the computer center is maintaining them all on hard disks for examination, and is issuing loan copies to faculty who wish to evaluate them. Immediately thrown out was any idea of added copy cataloging; but that was the easy decision. What happens with software upgrades? What happens now that Kinko is no longer cooperating with Apple? Where is this stuff going to be located next year, or next week? And with other materials—which copy of the ICPSR survey research data should we be cataloging? What kind of access record do we provide to the Medieval Data Bank information?

Mark it and park it? Mark what, and park it where?

III. NEW TASKS FOR TECHNICAL SERVICES

New contexts and the changing of traditional assumptions imply a wide range of new understandings and activities for technical services. Most of us recognize this, and discussion and change has been widespread in research libraries. Information interfacing and intellectual preservation are two of the most interesting issues being discussed in research libraries.

1. Linking access systems. The goal of the integrated bibliographic system, that seamless database allowing access to all resources is fading. We cannot provide “one-stop shopping” (and it should be remembered that the term’s usage is from
stores that wish to persuade us that what they happen to have is all we need). It is increasingly necessary to envision linked information systems rather than integrated ones.\(^4\)

Consider the multiplicity of information sources we must provide to patrons: the OPAC itself, acquisitions files, serials control systems; government document files, technical reports, vertical files, media centers; remote search services, OCLC, special databases in RLIN, local databases; CD-ROMs, ICPSR files at computer centers, and campus information systems. Research libraries are the institutions to provide patron access to all this information, and we can never seamlessly present it all.

We will have to determine the principles by which we intelligently present this array of information to users, and then we must find ways to implement them. To do this we will require librarians equipped with both technological expertise and bibliographic understanding. These librarians will continue to embody the service goals our profession has always held high.

They will find challenge in knotty technical problems (the kind that used to be found in formulating and implementing cataloging codes and the MARC record), and they will find satisfaction through the resolution of these problems in favor of patron service. For these librarians, the technical problems will simply have different characteristics. In this future will be found our response to the reported dearth of librarians interested in cataloging and technical services.\(^5\)

An example of a knotty problem for linked information systems is authority control. One of the most important intellectual contributions librarians have made to information access is the concept of the controlled thesaurus, or authorized vocabulary. Providing syndetic structures and authority files for great catalogs of millions of entries require enormous effort, and we are just getting the issues under control in our automated cataloging systems and OPACs.

Consider now the problems facing a patron who is moving his or her search from the government documents catalog to the OPAC, and perhaps to the ERIC database or to Chemical Abstracts. The search movement should be immediate and the interfaces should assist rather than assault the user. But is it also possible to address the shifts in controlled vocabularies as the patron moves from one database to another? The challenge for serious and technically minded librarians is great.

2. Intellectual Preservation. The second new task for technical services is intellectual preservation. Intellectual preservation is different from preservation of a physical artifact. Intellectual preservation addresses the transience, the evanescence, the fundamental ephemerality of electronic information. The Bodleian Library at Oxford maintains the John Johnson Collection of Printed Ephemera, but this is for materials explicitly intended for short lives. All our research libraries are about to include collections of electronic ephemera: material intended to live, but in a form conducive to destruction.

Ed Brownrigg, Gordon Neavill, and others have commented on the intellectual risks involved in committing our discourse to the fragile yet fertile medium of electronic recording.\(^6\,7\) It is obvious to all of us from personal experience that electronic information can be easily lost. The proliferation of versions of texts is another problem. Even in print form, it has long troubled scholars, bibliographers, and librarians. Ithiel de Sola Pool has commented on the new possibilities in an electronic age, as easily reproducible texts and versions of texts are transmitted back and forth across academe.\(^8\) The concept of a canonical text—already in trouble in printed forms—could cease to exist altogether. At the personal level, many of us have already had the experience of distributing memos in draft form over e-mail to various colleagues for response, with variations in the drafts following hard upon one another as the comments come in.

De Sola Pool is concerned about this issue in terms of redactions of literary forms, both for texts of the past (consider for example the current scandal over the text of Joyce’s \textit{Ulysses})\(^9\) and also for those
Electronic Information—Malleability and Responsibility

The malleability of information that is one of the major advantages of computer-based electronic systems has as its corollary the potential transience of information. . . . Proponents of computer-based electronic systems have not addressed the issue of the long-term survival of information. . . . The survival of information in an electronic environment becomes an intellectual and technological problem in its own right. . . . So long as intellectual works are recorded in tangible form, the primary responsibility for defining and shaping a society’s stock of knowledge rests with its librarians.


[They] keep talking up IBM’s . . . still unannounced document-management software. Running on the mainframe, the RMS software automatically rids an OfficeVision system of documents no one wants anymore. Users can designate individual documents to be held indefinitely, but otherwise, the system relies upon user-defined time frames or the system’s own default values to regularly prune documents. Not only does RMS reduce the need to buy additional storage as the years roll by . . . it also helps make possible the elusive paperless office! Don’t tell the printer people.

—Spencer F. Katt, ‘’Rumor Central,’’ PC Week July 24, 1989, p.112.

I thought it important to note that whereas the advent of the printing press had once stabilized our texts by removing the pitfalls inherent in manual copying, the computer now renders the modification of electronic materials by the ordinary user almost child’s play. I thought it important also to stress that unless continuous efforts are made to control the integrity of TLG materials now in circulation, a multiplicity of electronic text versions will soon be inundating the field, and before long an apparatus criticus to electronic texts will become a necessity. . . . Most electronic data users . . . do not wish to deal with such issues and problems; in fact, many of them do not understand (or—worse yet—do not care about) them. Someone must, lest recent progress in Classics be stifled, or even reversed.


In her inaugural address . . . Berger talked about information access leading the pack of issues identified as critical to ALA members. . . . ‘’In a democracy, information access requires an information base secure from intrusion, distortion, and destruction; one protected from both physical and technological deterioration. . . .’’ She talked about preserving the printed word, but also census tapes, Presidential tapes and other non-print information, and above all, computer security.

—‘’Patricia Wilson Berger Inaugurated as ALA’s President,’’ Library Hotline V.18 No.27, p.1 (July 10, 1989).
of the future. I have heard otherwise responsible scholars speak of the desirability of changing established texts to suit immediate needs or to 'improve' them for specific purposes. De Sola Pool speaks of such textual proliferation as overwhelming a true identification of what is, in fact, the world's literature.

Will this be the case? Will scholarship stand for it? Will libraries? Libraries and librarians should help to see that it not happen. And we should do more than just stick a finger in the dyke. Someone must provide mechanisms to establish and maintain firm electronic texts. Librarians are in fact well placed, for historical and functional reasons, to assure that a body of knowledge can be identified, and to provide the means to assure that society's intellectual growth is not based on shifting sands.

The great asset of information in electronic form is also its great liability. Gordon Neavill speaks of the "malleability" of electronic information; that is, its ability to be easily transformed and manipulated. Electronic manipulation, while desirable, is a two-edged sword: information that is easily changed is easily lost.

Neavill identifies three ways in which information can be endangered through its existence in electronic form:

1. First, formal contributions to scholarly literature that are apparently in low demand may intentionally be purged. Gerald Salton of Cornell, among others, has written in favor of this for less interesting items and those less wanted. There are cost-effectiveness issues at play here; in a print collection, purging unused materials is an expensive proposition to identify, physically remove, and delete from the various records. The same is true for electronic information. The space to store print materials doesn't cost much in today's library accounting schemes, but is a very specific and budgeted cost for electronic systems.

2. Second, unpublished electronic writings that could have secondary, later historical use are more likely than paper to be purged as of no further primary use. These are the kinds of ephemeral writings that in the past have eventually found their way into archives or special collections: drafts of novels, pre-contractual negotiation papers, and even certain classes of White House memoranda.

3. The third way in which information can be intentionally endangered is through the updating of noncurrent information. Examples include publisher lists, annual data handbooks, short-term economic data, and outdated versions of computer software (especially where it is only distributed electronically, as for example Kermit). As we reach pure electronic publishing, where hard-copy is not produced, such cases will become more and more frequent. (A recent bellwether example is the difficulty the Museum of the Moving Image has just found in locating video games less than ten years old.)

So far these examples only address the "keep or lose" possibility: either we keep the particular data set or we lose it in its entirety. There is a more insidious danger, and that is the danger of data modification. Such modification may be legitimate and public, or it may be illicit and fraudulent. Both cases present libraries with problems. A legitimate modification of data might exist, for example, as Books in Print is updated to reflect changing inventories. If—when—the database exists only electronically, what is the possibility of maintaining an archival record of the publishing industry? And whose responsibility will it be?

For scholars, lawyers, business people, and bureaucrats we have until now had confidence that in a printed work my text will be the same as your text, and that my page reference will guide me to the same information as yours. Now, however, the transience of data prevents the assumption that my copy is the same as your copy. This will present one set of problems for business and government, and a
similar but more long-range set of problems for scholarship.

The case will also exist of fraudulent and opportunistic modification of data. Consider an electronic publication as a result of which the author is sued for libel; and consider the possibility of the author then modifying the offending text. What happens to the lawsuit? What happens to the intellectual integrity of the text and its distributed copies?

We know that integrity has been wanting recently at almost every level of government and in many business institutions, so we know we can anticipate conscious manipulation of data from these sources. Academia is not pure either, as the pressures of ambition and tenure have already led to the falsification of experimental data and reports.

We need tools to assure the integrity of electronic information; not only to preserve versions of texts, but to preserve them in unmodified form. (Let me sketchily suggest the exploration of document checksums, calculated using letter and spacing values and maintained as part of every document, according to a standard adhered to by major word-processing vendors that would manage to ignore the effect of purely formatting information.)

If such tools are not provided, although librarians are well placed to provide them, then scholarship and intellectual life will be damaged in two ways. Scholars and students will become cynical and skeptical; and as a consequence society’s scientific and intellectual growth will be slowed.

As Neavill says, electronic publishing proponents so far “have not addressed the issue of the long-term survival of information. . . . The survival of information in an electronic environment becomes an intellectual and technological problem in its own right.” If we want to assure permanence of the intellectual record that is published electronically, he urges, then it will be necessary consciously to design and build mechanisms within electronic systems in order to do so. 15

Physical preservation of media is one thing. Intellectual preservation is another. In electronic publishing, how will revisions be made (and how will libraries record them)? 16 Who in research libraries should be responsible for monitoring the volatility of electronic information? In “circulation” of electronic information, for what safeguards is the library responsible?

Is data manipulation and electronic fraud a library concern? If so, is it a technical services concern? If not, whose is it?

IV. OPTIONS FOR RESEARCH LIBRARIES IN AN ERA OF ELECTRONIC INFORMATION

There are four potential models for technical service operations in large libraries in a technological era:

1. Do nothing, or little: In this model, a library continues traditional acquisition and information provision patterns. Virtually all research libraries will do more than this. For a library that follows this path, however, the consequence for technical services will be stagnation. Patrons will go elsewhere for much of their information. Technical services will remain highly significant within a less significant institution.

2. Expand access to electronic materials: Continue to purchase hard copy, but also acquire electronic data and provide expanded access to off-site information. Most research libraries are taking on this task. Some regard it as the end, not the beginning, of what they do, at least for technical services. Y.T. Feng’s prediction of its limited role is that “technical services will continue to keep somewhat its traditional bibliographic orientation, but with more and more dependence on electronic technology to improve efficiency and to facilitate cooperation.” 17

In this option, the hard-copy acquisition and cataloging activities will become proportionally smaller than at present, information access is considered an issue primarily left to the public service librarians, and the importance of traditional technical services functions will proportionally decrease.

If the traditional functions are all that are maintained, technical services will become a kind of personnel backwater as it
"If the traditional functions are all that are maintained, technical services will become a kind of personnel backwater as it congeals into a rule-driven decadence."

congeals into a rule-driven decadence. Traditional technical services will never disappear, for hard-copy needs are foreseeable indefinitely; and certain standard technological requirements will continue, as for example the provision of OPACs. But as is already happening, technical functions are becoming routinized as they become better understood and automated.

3. Develop interfaces: If technical services take on the task of providing intelligent interfaces between access systems, then this necessary patron service will provide a natural growth pattern for our trained and future staffs. The skills we regard highly now will be supplemented by further technological skills. By their nature these new skills will require effective communication and transmission throughout the library, reinforcing and enhancing the traditional role of technical services at the center of information provision to librarians and patrons. As John Sack has suggested, "the role of the integrator of such systems may be the professional high ground."

There is a danger that a caste system will develop: a few professional experts could become counterposed to journeyman catalogers. (We see something like this now where separate library systems offices exist.) It is up to all our professionals and to management to see that this does not occur; not only would it be unnecessarily divisive, but it would inhibit the provision of the most effective access to information.

4. Assert institutional responsibility for the preservation of knowledge: This is the most difficult model of the four, and the most speculative.

For libraries to take on the preservation of knowledge, and not just of artifacts, may seem simply to be an extension of our existing role in the classic paradigm (acquire, organize, make available, and preserve). I believe however that it will be different and more difficult. The obstacles include the financial, the technological, and the social. Because in preserving electronic information we may be attempting to go upstream against the current of technologically and socially established throw-away patterns, the task may be impossible.

Archiving of information solely in electronic form is a recent development, but will grow. Much U.S. census information will be preserved only in this way. The director of corporate technology of Xerox says "Paper is portable, disposable, comfortable to use, and cheap. It will, however, lose its role as an archiving medium. The 'truth', the up-to-date information, will not be on paper but in electronic form." An Educom task force has initiated discussion of serious aspects of the intellectual property issue with the intent of expanding the concepts both of authorship and of intellectual access beyond the constraints imposed by the history of print. In these developments the preservation of electronic information from taint is not addressed, though some scholars and librarians are beginning to call attention to the problem (see sidebar).

Librarians' acts of preservation have always been upon objects we have owned. To protect information we will continue to require some title over it. We need to approach the intellectual property issue with the following understanding: society must grant libraries some form of trusteeship over knowledge if society wishes knowledge to be preserved.

Libraries—and our parent institutions—must be prepared to pay in part for this privilege and responsibility. It will not be easy to confront the information industry with this concept; it will be desirable rather to work out a common understanding of rights and responsibilities if libraries are to take over a preservative function while the return on investment for information creators remains appropriately in their hands. It will require the intelligent political action of libraries, universities, civic groups and public bodies, and vendors to work out an acceptable form of knowledge trusteeship.
Another way to preserve information and to maintain trusteeship over it is, of course, to create it in the first place. For example, libraries could actively become publishers, or at least distributors, of electronic forms of certain data. The Research Libraries Group is in some respects taking on this role with the Eighteenth Century Short Title Catalog, the Avery Index, and the MEMDB. The National Library of Medicine has long done so with Medline. Universities and other public agencies responsible for libraries need to take seriously the idea of information ownership. There is a confluence of interests on this issue and the serials pricing crisis. For cost reasons this has also led to proposals for universities to assert trusteeship over the information they create.

The Association of Research Libraries has suggested that university presses should again consider taking over publication of journals. Academic libraries might well begin considering the publication of electronic journals, thereby actively becoming part of the electronic information distribution process. Aside from the advantage of directly maintaining trusteeship over the information, this would allow libraries to learn the pitfalls and the opportunities of the process, and to be part of the dialogue that is changing the face of information transfer. Libraries are in a good position to provide the technical facilities that are necessary for electronic publication: we have ready to hand the information itself, the computing services, and the literate and numerate editors, information compilers and database managers. As James Thompson has suggested in an acute article on serials pricing, it may be time for "the idea of the academy retaking control of the bulk of scholarly publishing."21

V. SUMMARY AND CONCLUSION

I have suggested several possibilities for technical services roles in the coming period, broadly comprising stagnation, expansion, and innovation. In the latter two models, the role of technical services is to become more technologically adept. There is a need for a congruence of systems and of bibliographic skills and organization within libraries. This is happening in many larger libraries, as the same people have become responsible for both sets of skills.

Understanding and implementing the preservation of electronic data will lead to increasing sophistication within library staffs about systems, hardware and software, copying techniques, backup mechanisms, optical technology, networking, and data transfer. But it will also lead to increasing sophistication about legal issues, technology transfer, intellectual property, and information provision. These knotty problems will actually aid us in attracting the staff we need who will want to rise to these challenges. For technical services, the medium becomes the message as never before.

If libraries are to become active agents in the electronic revolution, once again asserting curatorial responsibility over information in all its forms, then the technical service function must transform itself. Electronic information is going to thrust change upon technical services. As a consequence, technical services units will either stagnate or transform themselves along with their libraries; they are unlikely to remain similar to what they have been in the past decade.

REFERENCES AND NOTES


3. A harbinger for the future of Kermit and similar programs is attested to by plans to include it in the read-only memory of 250,000 personal computers to be "manufactured and delivered to Soviet secondary schools as part of the current five-year plan..." Info-Kermit Digest 9 (13 June 1989), s.v. Kermit Conference Report (this reference is to an electronically distributed journal which, as it happens, lacks pagination).

4. I'm talking here about a public access system, not about an integrated processing system, still a desideratum for handling traditional acquisitions, cataloging, serials, and circulation functions.

5. For a discussion both of the scholars' need and the kind of activity that will satisfy it, see Donald Langenberg, "Supporting the Global Scholar," Academic Computing 3:12-16, esp. p.15.


10. Neavill, p.77. Professor Harvey Wheeler, of the University of Southern California, in a keynote speech at the October 1988 LITA conference, spoke of the "fungibility" of information. I think this is an incorrect use of the term, as it implies that one piece of information is just as good as another; and I think its use reflects Wheeler's lack of concern for firm texts, and explicit enthusiasm for the riot of change that becomes possible.


15. Neavill, p.78.


ARL Libraries and Staff Development: A Suggested Model for Success

Pat Weaver-Meyers

An education model of staff development, the Readiness, Planning, Training, Implementation, and Maintenance Model (RPTIM) is described. Concepts in the model are related to a broad overview of current staff development and continuing education efforts in academic libraries. Results of a survey of staff developers in ARL libraries suggest that 80 percent of the model describes practices appropriate to the academic/research library setting. In addition, respondents indicated that existing staff development programs generally did not meet the criteria staff developers agreed should be part of their libraries’ program.

Effective continuing education and staff development programs in libraries are becoming more pressing needs as fast-paced change remains with us. Sheila Creth identifies continuing education as a priority and exhorts academic librarians to assess critically the degree of support continuing education receives from library administrators.¹ This study examines RPTIM, the Readiness, Planning, Training, Implementation and Maintenance model.² Devised for use with staff development programs for education professionals, RPTIM is a potentially valuable tool for improving staff development efforts in the field of academic librarianship as well. This study, which surveyed Association of Research Libraries (ARL) staff development and personnel officers, is offered in support of the RPTIM model’s applicability to the academic library environment. The survey assesses the status of current ARL staff development library programs in relation to the ideal practices embedded in the model. The following review of library staff development and continuing education programs is provided as background to the survey results.

CURRENT EFFORTS IN CONTINUING EDUCATION

Continuing education (CE) and staff development (SD) are important components of librarianship in these days of rapid technological change and intensified career concerns. Elizabeth Stone, in her thorough analysis of continued learning in our profession, draws a distinction between CE and SD programs. Specifically, she defines staff development as continued learning that fulfills the needs or goals of the institution and continuing education as any kind of learning experience that will introduce new skills or concepts, fulfilling the needs of the individual for career advancement and improved personal competency.³ Although such

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Pat Weaver-Meyers is Access Services Department Head at the University of Oklahoma Libraries, Norman, Oklahoma 73019-0528. Much of the interpretation of the RPTIM model is taken primarily from a series of lectures presented by Fred H. Wood. Assistance with the statistical analysis was provided by Robert Shull, University of Oklahoma Statistical Computing Laboratory.
distinctions are important, particularly to this study, staff development and continuing education remain closely intertwined. In this paper, the focus will be on staff development as Stone defines it, but CE efforts will be reviewed due to their close relationship to staff development.

Several organizations provide CE opportunities to librarians. According to Brooke Sheldon, continuing education programs are being provided by numerous associations: American Society of Information Science, Special Library Association, the Continuing Library Education Network and Exchange of the American Library Association, International Federation of Library Associations, and others. However, extensive efforts by such organizations to provide "quantity and accessibility" have not been particularly successful. For example, Marion Paris and Herbert White indicate that continuing education in the area of special librarianship lacks a unified core of coursework related to special library issues. Brooke Sheldon points out that only a small percent of librarians participate regularly in CE offerings.

A discussion of the quality assurance concerns of the associations and some analysis of their offerings are provided by Peggy O'Donnell, who concludes that association offerings are especially important since they represent "the concerns and voluntary professional involvement of the individual librarian." Sheldon's summary analyses of CE and SD in the most recent volumes of the ALA Yearbook demonstrate a high level of activity on the part of associations in developing programs and in analyzing the most effective organizational stance towards these efforts. Recently, a study sponsored by the Ontario Library Association analyzed various existing CE models with the intent of proposing an organizational coordinating body and defining its responsibilities. This is one example of how library organizations are reassessing their commitment to CE.

Regional and state library agencies are alternative providers of CE. William Asp and Suzanne Mahmoodi describe existing programs nationwide. Learning in Progress by Joan Wright and Douglas Zweizig focuses on existing state programs and the coordination of all types of providers including library schools and associations. James Nelson points to coordinating, planning, financing, linking (to national and regional programs), licensing, providing, consuming and advocating as the major roles in CE and SD that should be assumed by state agencies. In many cases public, although not necessarily academic, libraries benefit from the efforts of state agencies. Further, state agencies do much toward providing more staff development-type programming for nonprofessionals, rather than just CE for professionals.

Another logical provider of continuing education and staff development opportunities is the library school. Marilyn Miller provides a comprehensive analysis of the state of library schools in the continuing education effort. She cites certificates of advanced study and sixth-year programs as examples of CE programming. In addition, she analyzes the number of CE courses provided by schools. From this analysis, Miller concludes that library schools have lost the initiative and failed to seize the opportunity to assume a dynamic leadership role in this arena. However, she maintains that they continue to have a place in the continuing education system. One example of a healthy library school CE program is offered at the University of Wisconsin–Extension. This program involves teleconferencing of CE units in such subjects as management and automation. In brief, library schools, like associations and state agencies, appear to play one part in the overall continuing education effort. The other players in this effort are the individual and the employer.

CURRENT EFFORTS IN STAFF DEVELOPMENT IN ACADEMIC LIBRARIES

The preceding review has concentrated on continuing education, because it seems that CE offerings in the form of workshops, CEU training programs, and pre-conferences often constitute all the staff development some librarians encounter. This lack of in-house staff development is
disturbing, since personal experience suggests that these CE programs, attended with enthusiasm and interest, can be quickly forgotten. What is taught is not always implemented in the workplace. This may be because it is not seen as relevant to the attendee’s current duties, because of lack of interest, or because of lack of follow-up by the supervisor. This does not mean that such coursework for the expansion of an individual’s skills is a waste. It is a necessary part of career development. The problem lies in the assumption by the institution that such programming represents an adequate staff development program.

Although staff development in some libraries may be limited to CE coursework, some academic institutions are recognizing that staff development requires a more complex response. In a recent article describing a residency training program at the University of Michigan Library, Richard Dougherty convincingly states that “the intellectual demands are too diverse, and time too short for library schools to assume the entire responsibility for training practicing librarians.” Although training new library graduates in practical applications is not new to library managers, Dougherty is emphasizing the responsibility of the library administrator to formalize strategies for such efforts. Ronald Powell’s recent study suggests that ARL librarians would prefer to acquire more of their professional knowledge through continuing education and staff development activities. What is the current trend in academic libraries? The following section examines current staff development and training programs in academic libraries with the intention of laying a framework for the use of the RPTIM model in a systematic staff development effort.

On-the-job training has been employed by libraries. The Office of Management Services/Association of Research Libraries has recognized the need to improve training and has developed a new course that focuses on the learning process. It is directed toward personnel officers and staff involved in coordinating training activities. This is one of many institutes and programs offered by OMS. According to their 1987 annual report, OMS has trained over 7,000 librarians since 1973. The emphasis of OMS has been on self-study programs and the use of institute and retreat formats in training programs is consistent with current research in the most effective adult training techniques.

The Association of College and Research Libraries (ACRL) is another provider of CE opportunities for academic librarians. Through local state chapters, their coursework is accessible to many unable to participate in national preconferences. Although these organizations, particularly OMS with its onsite applied approach toward training, provide important development opportunities, the consistent application of this training within the library remains a responsibility of the individual and the institution.

In addition to institutes, OMS has a spec kit program that pulls together in-house documents from different libraries. These kits serve as resources for self-training in academic libraries and provide a simple yet effective form of peer exchange. Several other recent publications provide a compendium of effective training techniques in all types of libraries. Although their coverage is not limited to paraprofessionals, most of these works emphasize practical training approaches to clerical tasks. The British seem to excel in developing such programming, but paraprofessional training is also present in American academic libraries. Jacquelyn Gavryck describes a program developed at the SUNY Albany Libraries. What is particularly noteworthy about this program to train clerical staff is that an existing cadre of trainers was used to provide training within the organization rather than bringing trainers in from the outside. The assignment of personnel charged with the coordination of staff training efforts has occurred in larger academic libraries and a movement in this direction is gaining momentum in smaller academic libraries as well.

Evidence of an increased emphasis on in-house training is demonstrated in the Resource Notebook on Staff Development by Jane Rosenberg and Maureen Sullivan.
This volume contains examples of current efforts in staff development at various academic libraries. The inclusion of program statements used at various institutions is also useful. These authors stress that changes in library organization increase the need for a dynamic process of staff development. Defining career ladders and job exchange are two ideas suggested. The concept of diversifying staff and promoting flexibility fits with a new emphasis in the quality of work life, cited by Rosenberg and Sullivan as an important trend forwarded by Charles Martell. Importantly, these authors conclude that the formal acknowledgement of staff development programming is a necessary prerequisite to formal budgetary commitment.

Jana Varlejs addresses budgetary commitment on the part of library administrators through modeling of costs. In one example, she compares in-service training to off-site training. Varlejs further raises the question of how much should be spent for adequate staff development and suggests that modeling may be used to arrive at a possible recommendation. Once a budgetary commitment is made, a closer examination of effective programs is necessary to insure value for each dollar spent. Examination of proven models of staff development is one method of arriving at a successful strategy.

"Research by Jana Varlejs suggests that learning styles should be taken into consideration in the formulation of continuing education and staff development work."

Such an examination of models in continuing education has been done in the formulation of much of our present-day library continuing education. Model comparison and formulation in staff development practice are now being done. Margaret Trask describes several presuppositions in Australian libraries' staff development, which can serve as a base model and Christian Vink suggests some practical guidelines as well. Malcolm Knowles has put forth a model based on adult learning theory, which in may ways parallels the RPTIM model this paper will examine. Furthermore, research by Jana Varlejs suggests that learning styles should be taken into consideration in the formulation of continuing education and staff development work. The RPTIM model does this. Finally, the RPTIM model has been applied to higher education personnel, not the group for which it was originally formulated, and found to be an appropriate guide for staff development.

THE RPTIM MODEL

The RPTIM model has five major subdivisions from which the acronym is formed: readiness, planning, training, implementation, and maintenance. Within these broad categories are thirty-eight specific practices that are stressed as important ingredients in an effective staff development program. In their original presentation of the model, Fred Wood, Steven Thompson, and Sister Francis Russell forward these categories as essential to a "coherent paradigm for constructing (staff development) programs." In addition to the 38 practices, the authors based their model on a series of assumptions or beliefs. The model was supported by practitioners in teacher/staff development. The following is a brief description of these categories as they relate to the academic library environment.

Readiness, the first step in the model, refers to the establishment of a positive work climate for staff development. This climate is characterized by the development of trust among colleagues, support, and open communication between administrators and staff. A clear vision of the organization's goals are put forth by the library director, and the administration and staff work together to formulate goals that will achieve the vision.

Why is readiness a necessary component of the staff development process? One reason is that change is a high-risk venture for an individual and activities such as team-building exercises foster a sense of support and gain the trust of
those involved. In addition, readiness is a time when loyalty for the chosen goals is established and participation gives everyone the sense of ownership necessary for successful change. Also, readiness activities refocus the attention of the group away from present concerns toward a new agenda. The Management Review and Analysis Program used by the Office of Management Studies, Association of Research Libraries and other OMS self-study programs include some of these concepts. Readiness is not then a totally new concept in library management, but seems to be infrequently applied in any systematic manner in staff development programming.

Some of the existing programs in academic libraries detailed in Resource Notebook on Staff Development indicate a climate that provides opportunities for staff development, but little mention is made of team building or actual staff input into defining beneficial staff development opportunities. The Texas A&M staff exchange/sharing program is a positive exception. This program allows departments to plan, outline and train participants in an employee exchange program. However, in goal formulation and analysis of options, the participation of staff in libraries still seems limited. Systematic connection between organization goals and staff development is also rare. Planning, the second component of the RPTIM model, generally occurs in most organizations, and academic libraries are no exception. Most academic libraries can produce a plan or policy for staff development when asked. However, how was that plan devised? Was information on weaknesses and strengths in work practices gathered from the staff? Did the plan include assessment of participants learning styles or was it based on research findings about adult learners? Did the planners determine how the program related to a long-term plan for improvement and did they include a list of in-service resources such as videotapes, university personnel staff development offerings, money for trainers, release time available, or in-house experts? Who did the planning—personnel officers, directors, or everyone? These questions exemplify the focus of this stage in the model.

Needs assessment, a part of planning, is being done in academic libraries. Rosenberg and Sullivan include some good examples of survey forms designed to ascertain staff needs. In addition, their suggestions for information gathering include many of the steps in this model. Training steps in the RPTIM model might best be understood by asking the following questions. Did the training program divide the group into teams to discuss and share experiences? Were the training program objectives chosen by group consensus? Who selected the program and was attendance required? Did the training program include practice sessions in which all the participants could try out the new behaviors presented during training? Was the training program presented by colleagues? Did the library director or a supervisor attend the session? Were group leaders experts in the subject presented, or were they department heads or divisional leaders? As the training session progressed, did the trainer expect the participants to rely more on themselves to generate activities? Did the participants emerge from the training session more confident?

Sue Courson's and Kenna Forsyth's public library program, in which librarians were given training in adult learning theory, learning objectives, needs assessment, training styles, transfer of learning and evaluation, and the new OMS course on training trainers, is evidence of increased awareness of these questions in library staff development. Stone also discusses quality control issues that relate to the concerns in this step of the model. The implementation criteria in the RPTIM model seem to be ignored most when libraries rely on continuing education opportunities to fulfill staff development needs. Most continuing education programs stop at an evaluation survey passed out during the last fifteen minutes of the session. Libraries could maximize CE offerings by sending more than one participant. When they returned to the workplace, they could observe one another using the new work practices, thereby en-
hancing implementation. Following up with resource support would also assist. Such follow-up activities are not common in CE coursework, but are sometimes emphasized in on-the-job training. On-site institutes such as those provided by OMS improve the chances of implementation through the use of applied techniques.

**Maintenance** is a method of assuring that the new work practices are stabilized and continued. The level of success with maintenance is usually reflected in performance evaluations. Some self-evaluation techniques are also used to maintain new work behaviors. However, self-evaluation is underutilized. Most maintenance is closely tied to personnel office procedures that address performance evaluation. There is no problem with this approach, as long as it does not lead to a consistently negative view, lack of positive feedback, and an inadequate period of time to implement the change before evaluation takes place. What seems to be missing is the use of measures that reflect improvement in overall quality with regard to the change in work practice.

Measuring increased efficiency in cataloging is merely one use of quantitative techniques for determining the effects of change in work procedure. They are quite rightly used. Qualitative changes are harder to measure, and perhaps for that reason seem to remain unrelated to staff development efforts. The debate about effective performance measures will continue for many years to come. Once these measures become more refined, they should be included in the evaluation of staff development programs. It should be emphasized that staff development ultimately rests on the assumption that improvement and change in job practice benefits the organization and the individual. Furthermore, organizational improvement should be measurable in terms of the patron’s rate of success in filling information needs.

**METHOD**

In April of 1988, a questionnaire surveying RPTIM model practices was mailed to the staff development and personnel librarians in all ARL member libraries. Appendix A reproduces the survey form. The form is adapted from the survey form originated by Steven Thompson and used by Ana Albino to assess perceptions of faculty development practices in higher education personnel. Wording was altered as little as possible and most changes related to position titles e.g., librarian = teacher or director = principal. One additional question was added, belief ten. The first section of the survey lists ten beliefs or assumptions that underlie the model and asks respondents to rate whether they agree or disagree with the statements.

The second section of the survey lists the thirty-eight practices that comprise the model. In this section, respondents are asked to rate the degree to which they think these practices should be part of library staff development efforts and the degree to which they think the practices now exist in staff development efforts in their library. The survey closed with a query about who is responsible for staff development and the number of staff in the library. The question of size was used later as a control, because earlier research shows that size is highly correlated with change and the adoption of new technology, the end result of many staff development programs. One hundred and sixteen surveys were mailed with a response rate of 47 percent.

The objective of the survey was twofold. First, a confirmation of the model as appropriate to the academic and research library setting was sought. Second, a measurement of the current state of staff development in these libraries in comparison to the model’s criteria was reviewed to determine how current staff development efforts might be improved.

**FINDINGS**

General descriptive analysis of respondents shows that 26 libraries qualified as small with fewer than 200 staff members. Large libraries, with staff greater than 200, accounted for 24 respondents. One respondent failed to complete the question. Fourteen libraries indicted they had staff development offices. When asked who was responsible for staff development programming, the responses varied con-
considerably. Two libraries indicated no one had that responsibility while one library indicated that university personnel training services performed this role. Several libraries indicated individual supervisors and administrative officers were responsible. Most frequently, personnel managers, staff development officers, or personnel managers in conjunction with professional development committees were responsible.

"Staff should be closely involved in the planning and selection of a program."

The use of a committee made up of paraprofessionals and professionals charged with establishing training priorities closely follows the planning techniques stressed in the RPTIM model. The model suggests that staff should be closely involved in the planning and selection of a program. A professional development committee was listed by seventeen of the responding libraries as the party responsible for staff development. One library indicated it had such a committee, but it was a committee for paraprofessional training. Professionals were held responsible for their own continuing education.

Although the questionnaire was mailed to the "personnel/staff development librarian" the title of the respondents confirmed that not all libraries have such a person. Directors, personnel librarians, assistant directors, and chairs of professional development committees completed the forms. General commentary indicated that several libraries were newly involved in staff development programs and had hopes of increasing their commitment. One library emphasized the importance of shared responsibility between the organization and the individual. Another indicated that evaluation was important but was underemphasized in the RPTIM model. Three respondents mentioned that they were unclear about the difference between continuing education, in-service, on-the-job training and staff development and therefore had trouble answering some parts of the survey.

Quantitative analysis of the data focused on the two objectives of the study. The mean of each question was examined to determine if respondents agreed with the beliefs and practices the model listed. If the mean response was less than 3.0, the questions were considered unimportant by respondents and excluded from analysis. The remaining responses were deemed important to the survey group. Beliefs 6,8 and practices 16,21-25, and 32 were excluded. This left a total of eight beliefs and thirty-one practices that were supported by respondents. Table 1 is a list of the means for the eight questions concerning beliefs.

Table 2 is a list of all the practices with a mean greater than 3.0 in the "should" categories. In addition, the table lists the F and p values for the repeated measures MANOVA (multivariate analysis of variance) compiled for the difference between "should" and "exists" (statistics compiled by the SAS General Linear Models Procedure). The table shows significant values for all the questions.

**TABLE 1**

<table>
<thead>
<tr>
<th>Questions</th>
<th>n</th>
<th>( \bar{x} )</th>
<th>STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Library personnel need inservice</td>
<td>54</td>
<td>3.53</td>
<td>.63</td>
</tr>
<tr>
<td>2. Significant improvement takes time</td>
<td>54</td>
<td>3.01</td>
<td>.71</td>
</tr>
<tr>
<td>3. Inservice education focus on improving</td>
<td>54</td>
<td>3.12</td>
<td>.58</td>
</tr>
<tr>
<td>4. Staff motivated to learn new things</td>
<td>53</td>
<td>3.35</td>
<td>.48</td>
</tr>
<tr>
<td>5. Staff varies in competencies and readiness</td>
<td>54</td>
<td>3.37</td>
<td>.55</td>
</tr>
<tr>
<td>7. The working climate influences success</td>
<td>53</td>
<td>3.52</td>
<td>.54</td>
</tr>
<tr>
<td>9. The library has responsibility for providing resources</td>
<td>52</td>
<td>3.05</td>
<td>.60</td>
</tr>
<tr>
<td>10. The library should provide inservice activities</td>
<td>52</td>
<td>3.11</td>
<td>.58</td>
</tr>
</tbody>
</table>
TABLE 2
DIFFERENCE BETWEEN SHOULD AND EXISTS
FOR THOSE QUESTIONS WITH A MEAN > 3.00

<table>
<thead>
<tr>
<th>Question</th>
<th>should</th>
<th>exists</th>
<th>difference</th>
<th>F*</th>
</tr>
</thead>
<tbody>
<tr>
<td>A positive work climate is developed</td>
<td>52</td>
<td>3.34</td>
<td>2.59</td>
<td>.75</td>
</tr>
<tr>
<td>Library goals written collaboratively</td>
<td>52</td>
<td>3.41</td>
<td>2.56</td>
<td>.85</td>
</tr>
<tr>
<td>Improvement goals for three to five years</td>
<td>53</td>
<td>3.60</td>
<td>2.73</td>
<td>.87</td>
</tr>
<tr>
<td>The library staff adopts goals</td>
<td>52</td>
<td>3.51</td>
<td>2.66</td>
<td>.85</td>
</tr>
<tr>
<td>Current library practices are examined</td>
<td>48</td>
<td>3.39</td>
<td>2.50</td>
<td>.89</td>
</tr>
<tr>
<td>Current work practices are examined</td>
<td>51</td>
<td>3.09</td>
<td>2.25</td>
<td>.84</td>
</tr>
<tr>
<td>Staff identifies plans to achieve goals</td>
<td>53</td>
<td>3.24</td>
<td>2.56</td>
<td>.68</td>
</tr>
<tr>
<td>Leadership responsibility of library</td>
<td>52</td>
<td>3.51</td>
<td>2.96</td>
<td>.55</td>
</tr>
<tr>
<td>(a) director/dean</td>
<td>52</td>
<td>3.51</td>
<td>3.08</td>
<td>.43</td>
</tr>
<tr>
<td>(b) associate directors/deans</td>
<td>49</td>
<td>3.77</td>
<td>3.32</td>
<td>.45</td>
</tr>
<tr>
<td>(c) staff development officer</td>
<td>54</td>
<td>3.33</td>
<td>2.44</td>
<td>.89</td>
</tr>
<tr>
<td>Differences of desired and actual practices are examined</td>
<td>54</td>
<td>3.42</td>
<td>2.94</td>
<td>.48</td>
</tr>
<tr>
<td>Planning of staff activities relies on information</td>
<td>54</td>
<td>3.14</td>
<td>2.03</td>
<td>.84</td>
</tr>
<tr>
<td>Inservice planners use information</td>
<td>54</td>
<td>3.00</td>
<td>1.71</td>
<td>1.29</td>
</tr>
<tr>
<td>Staff development include inservice activities</td>
<td>53</td>
<td>3.50</td>
<td>2.98</td>
<td>.52</td>
</tr>
<tr>
<td>Resources are identified prior to planning activities</td>
<td>54</td>
<td>3.45</td>
<td>2.36</td>
<td>1.09</td>
</tr>
<tr>
<td>Staff development activities for three to five years</td>
<td>53</td>
<td>3.09</td>
<td>1.73</td>
<td>1.36</td>
</tr>
<tr>
<td>Specific objectives are written</td>
<td>53</td>
<td>3.45</td>
<td>2.36</td>
<td>1.09</td>
</tr>
<tr>
<td>Staff development objectives include knowledge</td>
<td>53</td>
<td>3.45</td>
<td>2.96</td>
<td>.85</td>
</tr>
<tr>
<td>Staff development objectives include skill development</td>
<td>53</td>
<td>3.37</td>
<td>2.86</td>
<td>.51</td>
</tr>
<tr>
<td>Leadership is shared among librarians</td>
<td>53</td>
<td>3.28</td>
<td>2.55</td>
<td>.73</td>
</tr>
<tr>
<td>Leaders selected according to expertise</td>
<td>53</td>
<td>3.45</td>
<td>3.11</td>
<td>.34</td>
</tr>
<tr>
<td>Leadership behavior becomes less directive</td>
<td>48</td>
<td>3.04</td>
<td>2.61</td>
<td>.43</td>
</tr>
<tr>
<td>Leader transfers responsibility</td>
<td>49</td>
<td>3.32</td>
<td>2.54</td>
<td>.78</td>
</tr>
<tr>
<td>Participants have access to support services</td>
<td>50</td>
<td>3.38</td>
<td>2.12</td>
<td>1.26</td>
</tr>
<tr>
<td>Library staff members are recognized</td>
<td>52</td>
<td>3.46</td>
<td>2.35</td>
<td>1.11</td>
</tr>
<tr>
<td>Resources are allocated to support new practices</td>
<td>53</td>
<td>3.37</td>
<td>2.86</td>
<td>.51</td>
</tr>
<tr>
<td>The library director support changes</td>
<td>51</td>
<td>3.62</td>
<td>3.02</td>
<td>.60</td>
</tr>
<tr>
<td>Systematic program is used</td>
<td>53</td>
<td>3.09</td>
<td>2.07</td>
<td>1.02</td>
</tr>
<tr>
<td>Library staff use systematic techniques</td>
<td>52</td>
<td>3.07</td>
<td>1.84</td>
<td>1.23</td>
</tr>
<tr>
<td>Performance used to monitor new practices</td>
<td>52</td>
<td>3.01</td>
<td>1.98</td>
<td>1.03</td>
</tr>
<tr>
<td>Responsibility for maintenance is shared</td>
<td>52</td>
<td>3.42</td>
<td>2.39</td>
<td>1.03</td>
</tr>
</tbody>
</table>

*Wilks Lambda values
† p < .05 for all questions, df = 1
btw

This suggests that the staff development programs in ARL libraries fall short of what experts in the field agree should exist. As shown in table 2, all but four of the practices that should be part of staff development according to respondents fell below the 3.0 level when respondents rated the programs in their libraries.

As mentioned earlier, libraries were grouped in small and large categories to determine if size had any significant effect on responses. No significant difference was found in a repeated measures MANOVA (multivariate analysis of variance) of the two-by-two interaction between should—exists and small—large. In addition, ANOVA (analysis of variance) results of tests between small and large libraries show no significant difference with the exception of readiness one, a question concerning the importance of positive work climate. This question had an F value of 4.48 with p = .0394. The mean values were greater for small libraries indi-
eating the smaller library respondents supported the importance of positive work climate and felt it existed to a greater degree in their libraries.

**DISCUSSION**

The survey results suggest that academic and research library staff developers feel that 80 percent of the RPTIM model practices should be part of staff development efforts in their libraries. In addition, there is a significant difference between existing conditions and what these same developers feel should be part of their library's programs. Although the RPTIM model is not comprehensive, it may be an appropriate beginning checklist for academic and research libraries interested in improving their staff development programming.

Most of the practices in the RPTIM model that were not confirmed by the survey fall in the training category. Further research is needed to discover why experiential activities, peer teaching, self-determination and participation by administrators are not important concepts to library staff developers. Perhaps few librarians have personal experience with staff development that includes these practices. Also learning theory-based techniques may be more familiar to educators, the groups surveyed in earlier studies.

An important trend can be seen in the difference column in table 2. Those questions with the greatest difference between what should be and what exists in staff development programs occurred in planning, implementation, and maintenance.

This suggests that academic libraries interested in improving their programs might concentrate limited resources in these areas. In addition, those organizations involved with continuing education programming that is fulfilling staff development needs should place some emphasis on the use of training after participants return to their offices.

There are some important limitations to this study. As mentioned earlier, a few respondents were confused about the general definitions of in-service, staff development, continuing education, and on-the-job training. No effort was made to define the concepts in a survey introduction, so it must be presumed that respondents answered based on their own interpretation of staff development. Four respondents expressed difficulty in interpreting questions or felt some of the wording was ambiguous. Also, comments suggested that evaluation of the quality of staff development programs should be a part of the model. One respondent questioned the need to formalize staff development to such a degree.

Further research using parallel models should be done to confirm these findings. Additional refinement of the RPTIM model by including a section on evaluation and by revising the section on training should be part of any further testing. This study serves as an initial focus in the review of appropriate practice in academic and research library staff development and can be used by personnel officers and administrators as a guide in planning the most effective programs possible.

**REFERENCES AND NOTES**

7. The ALA Yearbook of Library and Information Services: A Review of Library Events contain summaries of current offerings and trends in CE and staff development annually.
12. Marilyn L. Miller, "'Library Schools and Continuing Education,'" in *Continuing Education for the Library Information Professions* p.213-75.
23. Margaret Trask, "'Interconnections in the Library and Information Science Career Development Process,'" in *Continuing Education: Issues and Challenges* p.142-55; Christian M. Vink, "'In-Service Training By the Employer As a Continuing Education System,'" in *Continuing Education: Issues and Challenges* p.189-97.
27. Fred H. Wood, Steven R. Thompson, and Sister Frances Russell, "'Designing Effective Staff Development Programs,'" p.59.
28. Ibid., p.61-63.


32. Ibid., p.182.

33. Ibid., p.9-50.


---

**APPENDIX A. RPTIM QUESTIONNAIRE SURVEY FORM**

**STAFF DEVELOPMENT SURVEY**

Below you will find a list of beliefs that could shape practices for staff development. Next to each statement there is a column of numbers. Please indicate the degree to which you agree with the statement by circling the number beneath the appropriate descriptor.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All library personnel need inservice throughout their careers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Significant improvement in library programs and services takes considerable time and long-term inservice programs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Inservice education should focus on improving the quality of library programs and services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Library staff are motivated to learn new things when they have some control over their learning and are free from threat.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Library staff vary widely in their competencies and readiness to learn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Professional growth requires commitment to new performance norms.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. The working climate of the library, including such factors as social climate, trust, confidence, open communication, and support from colleagues for changes in practices, influences the success of professional development.

8. The library is the most appropriate target of change in work practice, not the university or the individual.

9. The library has the primary responsibility for providing the resources and training necessary for library staff to establish new programs and improve efficiency.

10. The library should provide inservice activities to insure the application of continuing education training.

Listed below you will find statements that could be used to describe several practices in library staff development programs. Next to each statement there are two columns.

In the first column, please indicate, placing a circle round the number below the appropriate descriptor, the degree to which you believe each practice describes what should be in your library to guide the design of staff development programs. In the second column, indicate the degree to which you believe the practice describes what exists in your library.

<table>
<thead>
<tr>
<th>READINESS</th>
<th>SHOULD BE</th>
<th>EXISTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A positive work climate in the library is developed before other staff development efforts are attempted (a positive climate is characterized by open communication, confidence, trust and supportive relationships).</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>2. Goals for library improvement are written collaboratively by staff, librarians, library administrators, and personnel office staff.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>3. The library has a written list of goals for the Improvement of library programs during the next three to five years.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>4. The library staff adopts and supports goals for the Improvement of library programs and services.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>5. Current library practices are examined to determine which ones are congruent with the library's goals for improvement before staff development activities are planned.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>6. Current work practices recommended in the literature and found in best practice are examined to determine which ones are congruent with the library's goals for improvement before staff development activities are planned.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
7. The library staff identifies specific plans to achieve the library's goals for improvement.

8. Leadership and support during the initial stage of staff development activity are the responsibility of the library

   a) director/dean
   b) associate directors/deans
   c) staff development officer

**PLANNING**

9. Differences between desired and actual practices in the library are examined to identify the inservice needs of the staff.

10. Planning of staff development activities relies, in part, on information gathered directly from library staff members.

11. Inservice planners use information about the learning styles of participants when planning staff development activities.

12. Staff development programs include objectives for inservice activities covering three to five years.

13. The resources available for use in staff development are identified prior to planning inservice activities.

14. Staff development programs include plans for activities to be conducted during the following three to five years.

15. Specific objectives are written for staff development activities.

16. Staff development objectives include objectives for attitude development (new outlooks and feelings).

17. Staff development objectives include objectives for increased knowledge (new information and understanding).

18. Staff development objectives include objectives for skill development (new work behaviors).

19. Leadership during the planning of inservice programs is shared among librarians, staff and administrators.

**TRAINING**

20. Staff development activities include the use of learning teams in which two to seven participants share and discuss learning experiences.

21. Individual library staff members choose the staff development objectives for their own professional learning.

22. Individual library staff members choose the staff development activities in which they participate.
23. Staff development activities include experiential activities in which participants try out new behaviors and techniques.

24. Peers help to teach one another by serving as inservice leaders.

25. Library directors and associate directors participate in staff development activities with their staffs.

26. Leaders of staff development activities are selected according to their expertise rather than their position.

27. As participants in staff development activities become increasingly competent, leadership behavior becomes less directive or task-oriented.

28. As participants in staff development activities become increasingly confident in their abilities, the leader transfers increasing responsibility to the participants.

IMPLEMENTATION
29. After participating in inservice activities, participants have access to support services to help implement new behaviors as part of their regular work.

30. Library staff members who attempt to implement new learning are recognized for their efforts.

31. The leaders of staff development activities visit the job setting, when needed, to help the inservice participants refine or review previous learning.

32. Library staff members use peer supervision to assist one another in implementing new work behaviors.

33. Resources are allocated to support the implementation of new practices following staff development activities (funds to purchase new materials or technologies, time for planning, and so forth).

34. The library director and associate directors actively support efforts to implement changes in professional behavior.

MAINTENANCE
35. A systematic program of supervision is used to monitor new work behavior.

36. Library staff members utilized systematic techniques of self-monitoring to maintain new work behaviors.

37. Library performance measures are used to monitor new practices.

38. Responsibility for the maintenance of new practices is shared by the librarians, staff, and administrators.
Please state the position title of the person completing this form ________________________.

Is there an office of staff development in your library? ______yes ______no.

If not, describe who is responsible for such efforts.

____________________________________

Approximately how large is your library system?
(please circle the correct answer)

a) 150-200 total staff
b) 200-250 total staff
c) 250-300 total staff
d) 300-350 total staff
e) 350-400 total staff
f) more than 400 total staff

Thank you for taking the time to complete this survey.

Any comments?

____________________________________

____________________________________

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Research Notes

Hard Copy versus Online Services: Results of a Survey

Celia Wall, Roger Haney, and John Griffin

A survey was conducted of academic libraries at institutions with enrollments of 10,000 or fewer students to determine if the availability of abstracting and indexing services online has resulted in the cancellation of the equivalent print subscriptions. While survey findings did suggest that subscriptions to print abstracting and indexing services are being cancelled at a significant rate, the availability of online equivalents to those services was not found to be the primary reason for the cancellations.

The availability of bibliographic databases online and, more recently, of such databases in CD-ROM format has brought into increased focus the question of whether print versions of abstracting and indexing services might or should be cancelled when the online or the CD-ROM version is available. The particular question addressed by this study was the effect of the availability of online databases upon the continuation of subscriptions for the print equivalents to these databases.

The phenomenon of "migration," cancelling subscriptions to print abstracts and indexes in favor of their online database equivalents, has been well documented in the library literature over the past decade. This literature can be roughly divided into two categories: (1) articles evaluating the economic impact of migration on the database producers and index publishers, and (2) articles concerned with libraries' reasons for cancelling print indexes and the effects of such cancellations on library users. It was with this second category of literature that the project was concerned.

Several studies have been concerned with a specific database, a particular institution, or one type of institution. Esther Baldinger, Jennifer Nakeef-Plaat, and Margaret Cummings examined whether Chemical Abstracts online could be substituted for the print copy at a medical library. Even with free searches, a high percentage of users still chose to refer to the printed abstracts, thus deflating the authors' hypothesis. Ann Pfaffenberger and Sandy Echt, on the other hand, substituted the online versions of Science Citation Index and Social Sciences Citation Index at Texas Christian University and discovered that users of these databases were extremely satisfied with the results. In addition, the online charges for searches during the test period were significantly

Celia Wall is Head of the Circulation Department, Waterfield Library, Roger Haney is Associate Professor in the Dept. of Journalism and Radio-Television and John Griffin is Head, Reference Department, Waterfield Library at Murray State University, Murray, KY 42071. This research was made possible by a Faculty/Librarian Cooperative Research grant provided by the Council on Library Resources.
less than the subscription costs for both indexes.

Dennis Elchesen did a cost comparison of manual versus online searching at the Lawrence Livermore Laboratory, University of California. Every aspect involved in both methods was measured and relative component costs calculated. The study's conclusion was that "online searching is generally faster, less costly, and more effective than manual searching." Yet for "precision and turn-around time" manual searching was preferred.

Mark Y. Herring described the decision process of migrating from print to online at King Colepe in Bristol, Tennessee. John A. Timour's article surveyed biomedical libraries serving 120 accredited medical schools. His survey findings reported that a slight majority of the respondents were in favor of increased online access.

Close to 100 special libraries in New York State responded to a survey done by Pamela Kobelski and Betty Miller. Their results showed that although online searching was widely used by these libraries, there was no evidence of widespread migration from print to online.

The major study in this category was done by Frederick Lancaster and Herbert Goldhor who surveyed a variety of types of libraries using a diversified list of databases. While Lancaster and Goldhor predicted an acceleration from print to online, most research did not support such a contention. Certainly online availability was listed as a contributing factor in some decisions to cancel print subscriptions, but it was by no means the main reason, nor the second most-cited reason, for such decisions.

We believed, however, that previous studies had examined the wrong population. We hypothesized that a survey of libraries at small liberal arts colleges—\ldots institutions with enrollments of fewer than 10,000 students—would find a greater incidence of migration than had been reported by larger institutions. Our suspicion was that the poor economy of recent years had affected small liberal arts colleges more than larger institutions.

METHODOLOGY

A mail survey, funded by a grant from the Council on Library Resources, was conducted. Library directors at four-year colleges and universities with enrollments of fewer than 10,000 students were sent a three-page, eleven-question survey (see appendix A).

To generate a mailing list of such institutions a search was conducted in Peterson's College Database (Dialog File 214), a comprehensive file of degree-granting, post-secondary colleges and universities in the United States and Canada.

Peterson's listed 1,516 small college libraries from which 1,167 were selected for the study. The 349 eliminated from the original list did not fit the criterion of "liberal arts colleges and universities." Those eliminated were special libraries, e.g., medical libraries, law libraries, Bible school libraries.

Respondents were asked to indicate the enrollment of their institutions in terms of one of nine categories. For purposes of analysis the institutions were recoded into the three categories used in Peterson's College Database (see table 1). The five respondents that did not indicate enrollment were deleted from analyses using enrollment as a variable.

The total return rate of 63.4% represented an excellent response using mail

<table>
<thead>
<tr>
<th>Enrollment Category</th>
<th>Enrollment Range</th>
<th>Respondents Sent</th>
<th>Respondents Returned</th>
<th>Percentage Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I</td>
<td>Under 1,000</td>
<td>367</td>
<td>219</td>
<td>59.7</td>
</tr>
<tr>
<td>Category II</td>
<td>1,000-4,999</td>
<td>622</td>
<td>404</td>
<td>65.0</td>
</tr>
<tr>
<td>Category III</td>
<td>5,000-9,999</td>
<td>178</td>
<td>113</td>
<td>63.5</td>
</tr>
<tr>
<td>Total</td>
<td>Unreported</td>
<td>1,167</td>
<td>741</td>
<td>63.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>% of Total Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I</td>
<td>29.6</td>
</tr>
<tr>
<td>Category II</td>
<td>54.5</td>
</tr>
<tr>
<td>Category III</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>99.3</td>
</tr>
</tbody>
</table>
questionnaires, and the returns in each category indicated good representation across enrollment categories. Because of this it was decided that a second mailing, originally planned and budgeted, was unnecessary.

Responses were coded on computer data sheets by two student workers and then submitted for analysis to the Murray State University Computer Center. The analysis was done using Statistical Package for the Social Sciences (SPSSx). Frequency counts were determined for each question and enrollment size was recoded to reflect Peterson’s College Database categories. Chi-square was used for testing the significance of cross-tabulation results.

SURVEY FINDINGS

A/I Services Owned

The survey began by asking respondents to review a list of commonly held print abstracting and indexing services and to indicate which of the titles were currently held, recently cancelled, or never subscribed to. For titles currently held, respondents were asked to indicate whether consideration was being given to cancellation.

The list of thirty-six titles used by Lancaster and Goldhor (1981) served as the basis for this list. Several titles were deleted from the original list since they were titles held by more specialized libraries than this survey targeted, e.g. World Textile Abstracts. Two titles—MLA Bibliography and America: History and Life—were added to the original list. Each title did have an equivalent online database accessible through one of the major online vendors.

Table 2 shows the list of twenty-six print abstracting and indexing services and the number of libraries currently owning or having owned the titles and those libraries who had never owned the titles. Table 3 shows the number of libraries planning to keep each title and those planning to cancel or who had already cancelled each title.

In reviewing the data reported by those

<table>
<thead>
<tr>
<th>TITLE</th>
<th>CURRENTLY OWN</th>
<th>NEVER OWNED</th>
<th>NO RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLA Bibliography</td>
<td>644 86.9</td>
<td>82 11.1</td>
<td>15 2.0</td>
</tr>
<tr>
<td>Psychological Abstracts</td>
<td>641 86.5</td>
<td>86 11.6</td>
<td>14 1.9</td>
</tr>
<tr>
<td>PAIS</td>
<td>595 80.3</td>
<td>126 17.0</td>
<td>20 2.7</td>
</tr>
<tr>
<td>Congressional Record</td>
<td>578 78.0</td>
<td>140 18.9</td>
<td>23 3.1</td>
</tr>
<tr>
<td>Chemical Abstracts</td>
<td>549 74.0</td>
<td>169 22.8</td>
<td>23 3.1</td>
</tr>
<tr>
<td>Resources in Education</td>
<td>540 72.8</td>
<td>181 24.4</td>
<td>20 2.7</td>
</tr>
<tr>
<td>Biological Abstracts</td>
<td>521 70.3</td>
<td>196 26.5</td>
<td>24 3.2</td>
</tr>
<tr>
<td>CJJE</td>
<td>500 67.4</td>
<td>222 30.0</td>
<td>19 2.6</td>
</tr>
<tr>
<td>America: History &amp; Life</td>
<td>463 62.4</td>
<td>239 32.3</td>
<td>39 5.3</td>
</tr>
<tr>
<td>Historical Abstracts</td>
<td>436 58.8</td>
<td>273 36.8</td>
<td>32 4.3</td>
</tr>
<tr>
<td>Dissertation Abstracts</td>
<td>416 56.1</td>
<td>292 39.4</td>
<td>33 4.5</td>
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<tr>
<td>Physics Abstracts</td>
<td>268 36.1</td>
<td>433 58.4</td>
<td>40 5.4</td>
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<td>American Doctoral Dissertations</td>
<td>210 28.3</td>
<td>486 65.6</td>
<td>45 6.1</td>
</tr>
<tr>
<td>Pollution Abstracts</td>
<td>185 24.9</td>
<td>512 69.1</td>
<td>44 5.9</td>
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<tr>
<td>Bibliography &amp; Index of Geology</td>
<td>150 20.2</td>
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<td>Environmental Abstracts</td>
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<td>Government Reports Announcements</td>
<td>134 18.1</td>
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<tr>
<td>LISA</td>
<td>117 15.8</td>
<td>585 78.9</td>
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<td>Engineering Index</td>
<td>97 13.1</td>
<td>603 81.4</td>
<td>41 5.5</td>
</tr>
<tr>
<td>Bibliography of Agriculture</td>
<td>95 12.8</td>
<td>600 81.0</td>
<td>46 6.2</td>
</tr>
<tr>
<td>Electrical &amp; Electronic Abstracts</td>
<td>66 8.9</td>
<td>628 84.8</td>
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<td>Metals Abstracts</td>
<td>32 4.3</td>
<td>660 89.1</td>
<td>49 6.6</td>
</tr>
<tr>
<td>Weekly Governmental Abstracts</td>
<td>27 3.6</td>
<td>661 89.2</td>
<td>53 7.2</td>
</tr>
</tbody>
</table>
libraries who planned to cancel or who had already cancelled services, ten titles stood out. Over 50% of the libraries currently holding Chemical Abstracts, Physics Abstracts, Pollution Abstracts, and Bibliography of Agriculture planned to cancel or had already cancelled the titles. Over 40% planned to cancel Biological Abstracts, Historical Abstracts, American Doctoral Dissertations, Environmental Abstracts, LISA, and Electrical and Electronics Abstracts. These figures are particularly significant for Chemical Abstracts, Biological Abstracts, and Historical Abstracts because of the larger number of libraries subscribing to these services in the first place.

Over 70% of the libraries in each enrollment category reported having cancelled one or more subscriptions to abstracting and indexing services.

**Reasons for Cancelling A/I Services**

For each title a library had cancelled or was about to cancel, the respondent was asked to indicate the "Single Most Important Reason" for cancelling. Four possible reasons were provided along with an "other" line for additional reasons.

Although most respondents did follow instructions and listed only one reason, many gave a combination of reasons for cancellation. Several respondents noted that rarely could one reason be singled out as the most important reason, indicating that usually a combination of reasons more accurately represented the true situation. One respondent indicated, "It is never as simple as one reason." Another noted, "It is usually a combination of nearly equal reasons (cost, use, online)."

In Table 4 the cancelled titles are listed with a breakdown of the reasons given for cancelling the titles. The incidence of multiple responses mentioned earlier caused the numbers in the columns for reasons to exceed the total number of cancellations reported for any given title.

For nine of these titles cost was given as a primary reason for cancellation. Fourteen titles were cancelled primarily due to...
<table>
<thead>
<tr>
<th>Title</th>
<th>Cancelled or Plan to Cancel</th>
<th>Cost</th>
<th>Lack of Use</th>
<th>Available Online</th>
<th>Available Nearby</th>
<th>Other</th>
<th>Total No. of Responses</th>
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<tr>
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<td>26.9</td>
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<td>1</td>
<td>20.0</td>
<td>1</td>
<td>20.0</td>
</tr>
</tbody>
</table>

*Although the survey asked for only the single most important reason for cancellation, many libraries gave a combination of reasons; others did not provide a reason. Therefore, for any given title the sum of the five reasons will not equal the total cancellations reported. Percentages are based on the total number of responses given, not the total number of cancellations.
lack of use. In two instances—America: History and Life and Computer Abstracts—cost and lack of use were of equal importance. These data show that, while subscriptions are being cancelled for a number of reasons, cost and lack of use outweigh other considerations.

Of particular significance for the purposes of this project was the indication that, while online availability was a definite factor in cancellation decisions, in most cases, it appeared to be far less significant a factor than cost and/or lack of use. However, one noteworthy sidelight to the question came from respondents who had chosen not to start a subscription to certain titles because of their availability online. "Online availability of several databases has allowed us not to begin subscribing to some needed indexes which we would have trouble affording," one respondent noted. Another indicated, "Online is considered when evaluating potential purchases." "We can resist demand for SCI and SSCI in print because of online," yet another commented.

When size of institution based on enrollment was factored into the cancellation process, it was clear that libraries at institutions in all three categories were cancelling at roughly equal rates for each of the reasons (see table 5).

**Results of Cancellations**

Of equal importance for the purposes of the project was the extent to which cancellation of abstracting and indexing services had increased online searching, how well users had accepted this "migration," and whether savings from abstracting and indexing titles had been reallocated to subsidize computer searching.

When asked if their libraries had cancelled any subscriptions to printed abstracting and indexing services because of their availability online, 256 (34.5%) of the respondents indicated that online availability had been a factor in their decision to cancel. Of that number, 164 (64.1%) were libraries at institutions with 1,000–4,999 students. Forty-five (17.6%) were at institutions with fewer than 1,000 students. The remaining 47 (18.4%) were at institutions with 5,000–9,999 students.

At first glance these figures appear to disagree with those shown in table 4 that lists reasons given by libraries for cancelling abstracting and indexing services. We believe this discrepancy to be due to two factors. First, table 4 represents the "single most important reason" for cancelling abstracting and indexing services. Second, libraries may well have cancelled titles not included in the survey's list of abstracting and indexing services. In fact, many of the less-frequently held, more esoteric titles that were excluded from the list might well be prime targets for cancelling due to their availability online.

**Paying for Online Searches**

Two questions concerning how users paid for online searches were included in the survey. First, the 568 respondents whose libraries offered online search services were asked how searches were normally paid for. One hundred eighty-one (31.9%) of these respondents indicated their libraries subsidized 100% of the search costs and another 203 (35.7%) partially subsidized searches. In the remaining 184 (32.4%) libraries, searches were not subsidized.

In this last group respondents reported

<table>
<thead>
<tr>
<th>TABLE 5</th>
</tr>
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<tbody>
<tr>
<td><strong>REASONS FOR CANCELLATION BY ENROLLMENT CATEGORIES</strong>*</td>
</tr>
<tr>
<td><strong>Total Surveys Returned</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Category I</strong></td>
</tr>
<tr>
<td><strong>Category II</strong></td>
</tr>
<tr>
<td><strong>Category III</strong></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
</tr>
</tbody>
</table>

*As in Table 4, libraries giving a combination of reasons cause the sum of the reasons to exceed the total number of surveys returned per enrollment category. Percentages are based on the total number of reasons given, not the number of surveys returned.
three ways in which the searches were being paid for: (1) individual requesting a search paid the entire costs of the search in 31 (5.4%) of the libraries; (2) searches were paid for entirely by department/grant accounts in 6 (1.0%) of the libraries; and (3) a combination of these two methods was used in 147 (25.8%) of the libraries.

Respondents indicating their libraries had cancelled abstracting and indexing services because of online availability were next asked how searches were paid for in the online equivalents of these abstracting and indexing services. One hundred seventy libraries (65.6%) reported that the library subsidized 100% of the search costs for the cancelled services; another 49 (18.9%) partially subsidized searches in the databases. In 5 (1.9%) the individual paid the entire cost of the search; in 4 (1.5%) department/grant accounts paid the entire costs. At 31 (11.9%) of the libraries the searches were paid for by a combination of department/grant accounts and the individual.

A look at library subsidies generally and after cancellations were made indicated an interesting trend (see table 6). The percentages given "For all searches" in table 6 were based upon the total number of libraries reporting that they had online search services. The percentages given "For cancelled A/I services" were based only on those libraries that indicated they had cancelled subscriptions due to online availability of an abstracting and indexing service.

These statistics indicate that those libraries cancelling abstracting and indexing services tend to subsidize searching in the database equivalents of those services more than they do for normal searching.

As one respondent put it, "It would not be fair to take away these services and then make undergraduates pay for accessing their online equivalents."

Of the 181 respondents who indicated that they subsidized 100% of the cost of searching, 170 (93.9%) of them had also cancelled print subscriptions to abstracting and indexing services.

**Cancellations and Increase in Searching**

One concern of some libraries contemplating cancellation of print abstracting and indexing services in favor of online is that the result will be a marked increase in searching in the equivalent databases. Survey results did not find that to be the case. Of the 242 libraries responding to a question on this issue, only 86 (35.5%) reported that they had experienced an increase in the number of searches performed in the database equivalents after the subscriptions had been cancelled.

**User Satisfaction with Online Substitutes**

A second concern of libraries is user acceptance of online substitution. Results of the survey indicated that users appeared to be quite satisfied with the substitution of online searching for the print abstracting and indexing services. Of the 250 respondents, 100 (40%) believed users were "strongly satisfied" with the change; another 62 (24.8%) believed users were "somewhat satisfied." One respondent at a library that had cancelled titles and subsidized online searching stated that they, "have had tremendous success with faculty free searches."

Seventy-six (30.4%) indicated users were "neither satisfied nor dissatisfied." While only 12 (4.2%) of the respondents

<table>
<thead>
<tr>
<th>Method of Payment</th>
<th>For Cancelled A/I Services</th>
<th>For All Searches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library subsidizes 100 percent</td>
<td>170 (65.6)</td>
<td>181 (31.9)</td>
</tr>
<tr>
<td>Library subsidized partially</td>
<td>49 (19.0)</td>
<td>203 (35.7)</td>
</tr>
<tr>
<td>Individual pays entirely</td>
<td>5 (1.9)</td>
<td>31 (5.5)</td>
</tr>
<tr>
<td>Department/Grant pays entirely</td>
<td>4 (1.5)</td>
<td>6 (1.0)</td>
</tr>
<tr>
<td>Combination of Department/Grant and Individual</td>
<td>31 (12.0)</td>
<td>147 (25.9)</td>
</tr>
<tr>
<td>Total</td>
<td>259 (100.0)</td>
<td>568 (100.0)</td>
</tr>
</tbody>
</table>
believed the users were dissatisfied to some degree. Even this perceived dissatisfaction on the part of users was tempered by one respondent with the comment, "Faculty think they are missing something but they have not yet tried the substitute online service."

CONCLUSIONS
The hypothesis upon which the study was based was that libraries at small liberal arts colleges—institutions with enrollments of fewer than 10,000 students—would have a greater incidence of migration than had been reported in the literature for larger institutions. Analysis of the data collected by the survey did not support this hypothesis.

While the results of the survey did suggest that libraries are cancelling subscriptions to printed abstracting and indexing services at a significant rate, the availability of online equivalents to those services was not given as the primary reason for cancellation. Rather findings indicated that the cost of the subscriptions was the primary concern in the decision to cancel; lack of use was the second most cited concern. Online availability ranked third in the list of reasons given for cancelling the print subscriptions to abstracting and indexing services. Only 256 (34.5%) of the libraries surveyed indicated they had actually cancelled any subscriptions to print abstracting and indexing services because of their availability online. These findings are consistent with earlier research reported in the literature.

Comments made by several respondents, however, suggest that recent technological advances in the information industry, notably CD-ROM, may have a more substantial impact upon printed abstracting and indexing services than has online searching. Approximately two dozen respondents listed CD-ROM as the primary reason for cancelling abstracting and indexing titles, e.g., most notably Psychological Abstracts and the ERIC indexes. One respondent indicated he "would cancel frequently used abstracts for CD-ROM but not for online." Another concluded, "CD-ROM will redefine the directions of online vs. print."

The authors agree with this prediction and believe there is a need for further research that would take into account the increasing availability and use of CD-ROM products. The current research was begun just as these products were being introduced into libraries and therefore could not fully explore this aspect of computer-based indexing and abstracting systems.

One problem that future researchers should anticipate is the difficulty of studying a technology that is evolving as rapidly as the online industry is. A mail survey is, by its very nature, a slow process. From the time the research is begun until it is complete, the technology can make tremendous advances. This is a problem that needs to be recognized in advance.

REFERENCES
APPENDIX A

Hard Copy versus Online Services Survey

1. Below is a list of commonly held print indexing and abstracting services. In the blank to the left of each title, please place the LETTER which best describes your library's situation regarding each title.

A—currently held, plan to keep
B—currently held, plan to drop
C—cancelled since 1980
D—cancelled prior to 1980
E—never owned

1. America: History and Life
2. American Doctoral Dissertations
3. Bibliography of Agriculture
4. Bibliography and Index of Geology
5. Biological Abstracts
6. Chemical Abstracts
7. Computer and Control Abstracts
8. Congressional Record
9. Current Index to Journals in Education
10. Dissertation Abstracts International
11. Electrical and Electronics Abstracts
12. Engineering Index
13. Environmental Abstracts
14. Government Reports Abstracts
15. Historical Abstracts
16. Library and Information Science Abstracts
17. Metals Abstracts
18. MLA Bibliography
19. PAIS Bulletin
20. Physics Abstracts
21. Pollution Abstracts
22. Psychological Abstracts
23. Resources in Education
24. Science Citation Index
25. Social Sciences Citation Index

2. We are interested in determining the reasons why indexing and abstracting services are cancelled. For each title you have listed above as cancelled or about to be cancelled, indicate below the SINGLE MOST IMPORTANT REASON for cancelling that title by placing the NUMBER 1–26) of the title after the appropriate reason.

Cost:

Lack of use:
Available at nearby library:
Online availability:
Other (please specify):

3. Does your library offer online bibliographic search services?
   ______ Yes IF YES, for how long? ______
   ______ No IF NO, SKIP TO QUESTION 10.

4. Below is a list of the online databases equivalent to the titles of indexing and abstracting services in Question 1. In the blank to the left of each title, please place the LETTER which best describes your library's current situation regarding each database.

A—frequently searched
B—occasionally searched
C—rarely, if ever, searched
D—unavailable through library's vendor

   ______ America: History and Life
   ______ AGRICOLA
   ______ BIOSIS
   ______ CA Search
   ______ COMPENDEX
5. In general, how are searches paid for?
   ___ 100% subsidized by library
   ___ partially subsidized by library
   ___ library does not subsidize (Circle A, B or C below)
       A—paid for by individual
       B—paid for by department/grant account
       C—both A and B

6. Has your library cancelled any subscriptions to printed indexes/abstracts because of their availability online?
   ___ Yes  IF YES, please go on to Question 7.
   ___ No  IF NO, SKIP TO QUESTION 10.

7. Specifically for those print indexes/abstracts which you have cancelled because of online availability, how are searches paid for?
   ___ 100% subsidized by library
   ___ partially subsidized by library
   ___ library does not subsidize (Circle A, B or C below)
       A—paid for by individual
       B—paid for by department/grant account
       C—both A and B

8. Has there been an increase in the number of searches performed in those databases equivalent to the cancelled indexes/abstracts?
   ___ Yes  ___ No

9. How satisfied would you say users have been with this new situation?
   ___ Strongly satisfied
   ___ Somewhat satisfied
   ___ Neither satisfied nor dissatisfied
   ___ Somewhat dissatisfied
   ___ Strongly dissatisfied

10. What is the approximate enrollment of your institution?
    ____ Under 500  ____ 2,500–2,999
        ____ 500–999  ____ 3,000–4,999
        ____ 1,000–1,499 ____ 5,000–6,999
        ____ 1,500–1,999 ____ 7,000–10,000
        ____ 2,000–2,499

11. Is your institution primarily:
    ____ Liberal arts  ____ Specialized  ____ Religious

Thank you for your cooperation in completing this survey. We welcome any comments which you believe relevant to the purpose of this survey. Please make these on the back of this page.
We plan to begin coding and compiling survey results on May 30 and would greatly appreciate having your completed survey returned by that date to: CLR Grant Survey, Waterfield Library, Murray State University, Murray, KY 42071.

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Think about the future now. Unless you can count on unlimited funds, you need to think about these things before you make your initial investment. This doesn’t mean you should overbuy; it only means you should invest your money on a system that is flexible. Because it pays to choose a supplier who can address your present needs and adapt when those needs change.

A flexible system. Be sure your automation company shows flexibility in software and hardware. It should offer an “open systems” architecture. This will let you start off within your budget, then extend services incrementally over time. So you won’t have to scrap one system and replace it later with something totally different and much more costly, requiring you to go back again for major funding.

Ideally, you’ll choose a system and a company that can adapt to your changing needs. Because a company whose attitude is geared toward flexibility is geared toward success. Yours.

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Susan Stearns
Vice President Marketing
To the Editor:

It is time for the research community to establish a university-based electronic publishing network. Such an arrangement would facilitate and speed access to research publications, bringing order to the now informal and inexorably growing online publication process taking place through the Internet. Scholars do not read journals, they read articles. The paper journal has been a logical and practical medium for delivering articles to scholars. Online electronic publication should be superior in meeting scholarly needs. A university-based publishing network would extend to other interested research audiences the communications now taking place within scholarly disciplines.

The electronic publishing network would link scholars and researchers to refereed papers stored in computer facilities on participating campuses. The papers might be prepared and reviewed entirely online as described by Rogers and Hurt in their Guest Editorial "How Scholarly Communication Should Work in the 21st Century," C&RL, January 1990. In addition, papers published in hard copy or electronically by commercial and not-for-profit publishers would be entered into the network and stored online.

Governance of the network would rest with the participating universities in the way that university presses are managed. However, each campus publishing node should be loosely related to publishing nodes on other campuses through an administrative structure somewhat resembling television broadcasting network affiliations. This would strengthen the electronic publishing network financially and administratively to better support operations, negotiations with other publishers, and marketing. The result would be a network of autonomous units publishing original papers and independently or jointly contracting for commercial and not-for-profit publications. Several networks of such autonomous units might be formed if there were administrative or financial reasons for doing so, in much the way that there are several broadcasting networks.

As economics and use patterns dictate, a campus publishing node might store publications that are also held by a publishing node at another campus. This might reduce telecommunications costs for distant users, or relieve the traffic and system load in heavily used disciplines. Also, similar editorial interests might reside in publishing nodes on different campuses. That is, there might be editors and their respective editorial boards in the same disciplines in different nodes. This would retain in the electronic publishing network the diversity of control and perspective evident in traditional journal publishing.

Further, according to the economics and use patterns, some campus network nodes might exist only to distribute publications from their computer facilities by making the publications accessible online. These nodes would resemble traditional libraries by serving as repositories of publications created and issued elsewhere. These distributing nodes would not offer editorial software for creating and reviewing papers. They would replicate the holdings of publishing nodes by downloading publications created elsewhere, and making them available to researchers. Hence, it can be seen that although publishing nodes are "libraries" because their holdings are accessible, there would be nodes in the network that would adhere more closely to the conventional role of the library.

By negotiated contractual payments to commercial and not-for-profit publishers for their contributions to the network or by royalty payments to publishers and authors, those providing publications to the network would be compensated. The Copyright Clearinghouse
might play a role in these transactions, but new agencies might emerge analogous to ASCAP and BMI in the music industry.

Index access to the network would be provided by the network itself, but also by other electronic literature indexes. Pointers might lead to several publishing or distributing nodes according to where and in how many places a publication is stored.

Revenue opportunities to support the network might be available through payments for each publication selected by users for reading, downloading or printing. Institutions will need to decide whether to pass charges along to users or whether to absorb charges in the way that library costs are now absorbed by institutional budgets. Further revenue might come from advertising included with items selected for use. Policies with regard to advertising must be carefully developed and applied with discretion.

The era of the electronic journal has arrived. To be sure, there is still a great deal of research, development, engineering, and institutional and managerial planning to be done before a model such as the one I have described might be realized. However, universities and other research organizations have the choice of controlling electronic publishing, to their economic and intellectual advantage, or surrendering the initiative, and the future of scholarly communications, to others.

JEROME YAVARKOVSKY
Director, New York State Library

To the Editor:

I note that the reigning powers of academic librarydom are sufficiently enthralled with the Rogers/Hurt vision of the future as expressed last fall in The Chronicle of Higher Education to have reprinted it in the January 1990 C&RL as the Guest Editorial. This is reasonable enough, given that so much of what passes for research in the intensely self-referential (reverential) world of library science has within it an implicit yearning for just such system of universal neatness and efficiency. However, I would have preferred that C&RL balance this paean to the power of centralized technology with the letters of doubt and opposition that it inspired. Perhaps it would have been too much to expect that handful of letters published on November 15 by CHE to appear with the Rogers/Hurt piece, and perhaps you’d prefer to generate a new set of responses (library science also has a strong tradition of reinventing the wheel), but just in case, you certainly have permission to reprint my letter—and I strongly suspect the other writers (not a Luddite in the bunch, by the way) would say the same.

JOHN SWAN
Head Librarian, Bennington College, Vermont

To the Editor:

Fremont Rider’s The Scholar and the Future of the Research Library is not “a book published in 1940,” as Susan Awe reports, nor just a book, as she implies. Instead, Ms. Awe has confused Rider’s 1944 book with his 1940 article on the same subject and has shown no awareness of the significance of either. Her review of Research Library Trends, 1951-1980 and Beyond: An Update of Purdue’s “Past and Likely Future of 58 Research Libraries” (C&RL, Nov. 1989) also misstates the title of the (nine) Purdue reports, somehow overlooking that title’s presence in the subtitle of the volume she reviews—and overlooking as well the complete listing of the nine that comprises appendix A, p.131-32.

She questions the usefulness of the study findings, saying that “even 1986 statistics are of limited use in 1989” because “current [trends] are changing more quickly than ever before due to automation, proliferation of information, funding or the lack of it, and so on.” This myth of modern metamorphic discontinuity is contradicted by the evidence, particularly by the 35 year record of spending and collection growth that . . . Trends . . . provides and that Ms. Awe mysteriously misses (see e.g., table 5 and figures 1-5).

Ms. Awe wishes that . . . Trends . . . had an index and she tells us that the “correlational analyses . . . are difficult to locate and understand.” In fact, results of those analyses
are in a conventional triangular matrix on p.108, exactly where the List of Tables (p.vi) reports them to be. She had more trouble finding evidence of the average trend for the crucial "volumes added" statistic, except for the summary that's included in the Abstract. For the record, these data are in the "VA" column of table 5; they are displayed in figure 2; they are discussed on p.111 and 114–16; similar but differently defined versions of VA’s trend are included in tables 6–12; and they comprise the entire contents of figures 7, 12, 15, 18, 21, 24, and 27, which are appropriately titled and listed on p.vii–viii.

WARREN F. SEIBERT
Department of Health & Human Services, Bethesda, Maryland

References and Notes
1. The report is based on annual statistics from 1951 through 1985, not through 1986 (see p.23).
2. Untroubled by a need for consistency, Ms. Awe elsewhere states that "library statistics are always useful for forecasting trends and planning future needs . . ." [emphasis added].

To the Editor:
In her July 1989 article ("The Effectiveness of an Information Desk Staffed by Graduate Students and NonProfessionals"), Beth S. Woodard suggests that ACRL or RASD establish a discussion group on the topic. RASD has a number of units that consider just such topics as this, and they would be very interested in hearing from her:
Management of Reference Committee
Performance Standards for Reference/Information Librarians discussion group
Reference Services in Large Research Libraries discussion group
Reference Services in Medium-sized Research Libraries discussion group

I would encourage her to contact the chairs through RASD/ALA, 50 E. Huron St. Chicago, IL 60611.

In addition, ACRL members may be interested in knowing that RASD is reviewing its structure and responsibilities. As the chair of RASD's Ad Hoc Committee to Restructure the Division, I invite ACRL members and College & Research Libraries readers to participate in this process by suggesting new ways in which RASD can work alongside ACRL in support of academic libraries and librarians. Please contact me at the following address or through the ALA/RASD office.

REBECCA WATSON-BOONE
2101 Marigold #8, Pocatello, Idaho 83201

To the Editor:
As advocates for the effective use of nonprofessional staff at reference desks, we were disturbed by the practices described in "An Evaluation of Reference Desk Service" by John O. Christensen et al. (College & Research Libraries, July 1989, p.468–83).

As the authors note, the literature indicates that nonprofessionals and students are being used to answer many types of questions asked at the reference desk. It is critical, however, that the levels of questions asked at the desk be identified and defined so that basic-level questions, such as directional and known-item questions, are the only ones handled directly by support staff. In-depth reference and search strategy questions should then be referred directly to a librarian. However, in "Appendix A: Representative Selection of the Questions Used for Unobtrusive Testing," only a few of the questions listed are appropriate for nonprofessionals to answer. Most of the questions, in particular the "Escalator Questions," are beyond the scope of what nonprofessionals should be expected to handle in terms of training and subject expertise and should be referred to a librarian.

The lack of a referral relationship is our second concern. The authors describe a case in which "over half the student reference assistants commented on the lack of subject specialist availability when they needed to make referrals." The rationale for using two levels of staffing is to provide better service by siphoning off the more difficult questions to the librarians who should be immediately available to assist the patron. Referral should be a
required step in the process when a question does not fall into one of the categories in which the nonprofessional has been trained. In the situation described in the article, however, this process wasn’t followed. Rather, it appears that the goal was to remove the librarians from the reference desk altogether so that they could spend more time on collection development and faculty contact.

A third critical element is training. The authors describe an evaluation of the effectiveness of training provided for nonprofessionals, but do not provide a description of the training program. The article implies, however, that training consisted primarily of “show-and-tell” between student and librarian. While this may be an effective means of supplementing a training program or addressing an individual trainee’s need, it is a scattershot effort that does not provide a consistent, planned approach which places the information being provided into the context of service goals.

Any program of using nonprofessionals at reference desks should have as its foundation the intent of improving reference service. Nonprofessionals can be trained to answer the more routine questions, freeing the librarian to spend more time with patrons who need in-depth assistance. We found this goal lacking in the program described.

Overall, we are puzzled about the motivation behind the writing of this article: Was it to describe a program that didn’t work as a lesson to library management?

MARTIN P. COURTOIS and LORI A. GOETSCH
Michigan State University Libraries, East Lansing

To the Editor:

The July 1989 issue of College & Research Libraries included two articles which dealt either largely or partly with the role of support staff and reference desk service. The articles were “The Effectiveness of an Information Desk Staffed by Graduate Students and Non-Professionals” by Beth S. Woodward and “An Evaluation of Reference Desk Service” by John O. Christensen, et al.

In both of the articles of College & Research Libraries there has been a tone or implication that “non-professionals” or “para-professionals” are the problem. The role of support staff in an academic library is a very complicated issue. I think it is simplistic and insulting to label the support staff (which incidently is the term they prefer to be known by) as the problem.

In the interest of fairness and in the hope of stimulating an intelligent and lively debate, I urge you as editor to seek a manuscript written by a library support staff worker at an academic library. I think you would find the views of academy library support staff very interesting, intelligent and provocative. I suggest contacting the support staff interest group of the Academic Library Association of Ohio or a similar association to help you solicit a manuscript.

DENISE GREEN
Coordinator of Reference, Ohio Wesleyan, Delaware, Ohio
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The 150th anniversary of photography has seen the publication of numerous books celebrating the medium and its technical and artistic progress. It is fitting that a guide to a large and important group of still photograph collections at the National Museum of American History, themselves portions of one of the world's largest photographic collections housed at the Smithsonian Institution, joins this body of celebratory books, adding not only to our understanding of these collections, but facilitating access to them for a wide variety of researchers.

In itself, the task of adequately describing the photographic collections of the National Museum of American History (NMAH) would seem a daunting one. The photographic collections of this single major museum of the Smithsonian Institution comprise by themselves more than one million images in a wide variety of formats and photographic processes. These images are spread across some 473 individually identified collections, located in twenty-four custodial divisions or offices, and multiple physical locations in this one museum of a still-larger institution. Further, photonegatives are not held in the physical custody of these divisions within NMAH, but are kept by the Smithsonian's central Office of Printing and Photographic Services, which also provides photoduplication services.

Understanding and gaining access to such enormous and broadly based collections could seem a formidable task to any researcher, even in a less complex institutional context. Happily, Diane Vogt O'Connor and the talented team who assisted her have greatly facilitated these tasks in a guide that is a model of organizational clarity, and proper and useful description. Success on these counts alone would be notable enough. But this book also offers helpful cross-indexes that illuminate relationships within the collections, and attractive and clear typography and layout that make use a genuine pleasure. A forty-nine page illustration section exhibits a well-selected sampling of images from various collections.

The author has wisely grouped the descriptions of each collection under the NMAH division responsible for the collection, such as the Division of Engineering and Industry. At the start of each division's listing are the division's address, telephone, hours of service, contact person and title; general statements of its collections' scope and focus; the photographic processes and formats represented; access, usage, and publication policies; as well as a brief but helpful listing of other nonphotographic materials held by that division.

Each photographic collection within the division is then listed in order by a unique alphanumeric coding system that parallels the alphabetical order of the collections' full titles. For each collection, the inclusive
dates of the photographs, origin of the collection, physical description, subjects, arrangement, caption data availability, finding aid availability, and restrictions are all briefly and clearly described. The book’s introduction further outlines the content of these fields, and gives general information on access and photoduplication services.

Given the broad scope and sheer size of these collections, the data in these fields is necessarily concise. Yet neither clarity nor informativeness suffers, for the author describes each collection with a consistent style, and uses a carefully controlled vocabulary effectively. This provides a comfortable consistency of descriptive form that makes usage of the guide easy, and immediately highlights features of each collection, rather than obscuring them.

A particularly successful use of controlled vocabulary is in the description of photographic processes. Various processes both commonplace and contemporary, and exotic and historic, are described with precision, using terminology that has increasingly become standard, in part through the development of the MARC-VM format, which was used as the basis for the surveys conducted within NMAH for the development of the guide.

The book concludes with three indexes: a creators index, which lists the photographers or entities that produced or assembled the images in each collection; a forms and processes index, which locates examples of physically distinct types of photographs (such as albumen photoprints, or collodion wet plate photonegatives); and a subject index, created using Library of Congress topical terms for graphical materials. The subject index is useful, since images related to certain subjects may reside in various collections located in separate NMAH divisions. The forms and processes index will be especially appreciated by anyone having an interest in the development of photographic technique. The more exotic variant processes (such as the bromoil process variant of the ubiquitous silver gelatin photoprint) are clearly noted. Widely used processes are not used as index terms except for general headings, or to establish headings for the variant processes. Indexing is keyed in all three indexes to collection number, not page. This only slightly impairs the usefulness of the indexes.

This book will lead a researcher into an acquaintance with a splendid array of photographic treasures. From the images created by noted photographers such as Matthew Brady, Eugene Atget, Andre Kertesz, and Richard Avedon in the Division of Photographic History; to the 11,300 images in the Warshaw Collection of Business Americana in NMAH’s Archives Center; to the Pullman Company Negative Collection in the Division of Transportation, the researcher becomes acquainted with a vast and heretofore virtually unknown resource of great artistic, technical, and informational value. This first volume of a planned five-part set admirably succeeds as a guide to this photographic treasure trove. Researchers can look forward to the other four volumes to do the same for the photographic collections housed in the Smithsonian Institution’s other museums and facilities.—Mark J. Cedeck, John W. Barriger III National Railroad Library, St. Louis Mercantile Library Association.


Wayne Wiegand’s “An Active Instrument of Propaganda’’: The American Public Library During World War I marks the beginning of the Beta Phi Mu’s (the International Library Science Honor Society) new series of monographs. In his wisdom combined with thorough research, Wiegand demonstrates in this study the involvement of American public library community during World War I. His detailed introduction covers an overview of the history of the public library prior to World War I. Also covered in the introduction, without going in broader detail, are topics such as the founding of the American Library Association (ALA) in 1876, the public libraries’ adoption of the Dewey Decimal Classification, the publication of the
periodical indexes such as the Poole's Guide to Periodical Literature in 1848 that yielded to the publishing of the Reader's Guide to Periodical Literature in 1900.

Wiegand postulates that public libraries shared in an ideology of reading, as he puts it, "good reading begets good social behavior and bad reading begets bad social behavior" but as an emerging social class, libraries worried about stability and order of a society "sorely tested by the effects of industrialization, urbanization, and immigration." Wiegand recognizes two problems unique to the library profession during this period: one was that libraries owned no monopoly on reading matters. They were unable to force the American public to use their libraries. Second was that new forces in the cultural, intellectual, and literary worlds pressed for changes in the traditional canons and consequently, as he posed, "librarians found the footings upon which they based their professional power shifting under their feet." Wiegand carefully shows in his study how both large and small public libraries in America played various roles during World War I. They solicited, acquired, and disseminated whatever information governmental agencies wanted to get to the American people.

Chapter one deals with how the war broke out in Europe in August 1914 and recounts President Woodrow Wilson's initial proclamation of American neutrality and caution to remain "impartial in thought as well as in action." It also recounts the general drift in attitude for the Allies in 1917. Chapters two and three extensively treat the shift in attitude of the American public library community, that is, how they supported the rest of their compatriots when the United States declared war on Germany on April 6, 1917. Also covered is how local and national public library chapters initiated various actions of support for the US government. Chapters four and five deal with the censorship role played by the public library during war time. Chapter six covers the public library between 1917-18 and the education of immigrants, including the americanization movement. Chapter seven summarizes the entire book.

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Wiegand concludes, “For the American public library community, World War I represented an exhilarating experience that constituted a capstone to the public library movement in progressive America.” This book, “An Active Instrument for Propaganda”: The American Public Library

During World War I is the “mecca” of all recorded public library history that I can think of. Considering its scholarly content and depth of research, Wiegand deserves to be congratulated for his efforts.—Felix Emu Uaeeze, New Mexico State University Library, Las Cruces.

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