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The More Things Change, the More They Stay the Same: East-West Exchanges 1960-1993

Margaret S. Olsen

Exchanges between Western and East European libraries have always been popular, and even as more East European publications become commercially available, exchanges remain important. Interestingly, Western librarians' perceptions of exchanges remain notably constant, despite sweeping changes in their operating conditions. Data for this article were gathered from three studies that represent three eras of East European politics and government. These studies show that the problems and advantages inherent in using East European exchanges remain much the same, even though the conditions that surround them can change dramatically. Similarly, while Western librarians' opinions of the economic advantages of exchanges have also remained constant, those opinions are not supported by objective evidence. These data suggest that exchanges will probably continue to be important sources in the future, no matter what changes the host countries might undergo. And given the instability of the political situation in Eastern Europe, Western librarians would be wise to keep all options open, exchanges included.

INTRODUCTION

Libraries in the West have had exchange programs with Soviet-bloc libraries since the late 1950s or early 1960s. For many Western libraries, these exchanges have become a major acquisitions source. In recent years, however, political and economic upheavals in Eastern Europe have caused some libraries in those countries to cut back or even eliminate their exchanges. Can these popular agreements weather the storm and remain viable in the difficult times that lie ahead? While nothing can be predicted with certainty, a look at the history of East-West exchanges indicates that they probably can.

In theory, international library exchange agreements should operate to the benefit of all concerned and should cause few problems. The mechanism is simple. For example, a library in America sends American publications to a library in Russia (previously the Soviet Union), which sends Russian publications to the American library in return. This way, both libraries are spared the bother and expense of dealing with international vendors. Ideally, both libraries supply the requested materials either from their stocks of duplicates or through free or inexpensive publications issued by the university or other institution with which the library is associated. Such arrangements can often be

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handled entirely by a library's central gift and exchange department without involving the librarian for the Slavic collection (covering all of Eastern Europe and the former Soviet Union) at all.

But exchanges are not as simple in practice as they are in theory. If the American library cannot supply the needs of the Russian library through these channels, it must either terminate the exchange or purchase the Russian library's desiderata through domestic vendors and ship them to Russia. It is in this way that exchanges often become considerably more complicated than the simple ideal described above. Some libraries have many such complex exchanges, and have special funds to make the necessary purchases. Even this arrangement ought to be beneficial for all concerned, as prices offered by domestic vendors are expected to be lower than those offered by international vendors, and more titles are available domestically than internationally. As long as the value of what one library purchases for its partner library equals the value of what the partner purchases in return, such arrangements are fair to all and should be worthwhile.

PRACTICAL PROBLEMS WITH SLAVIC EXCHANGES

Balancing

Obviously, an important aspect of exchanges is balancing. Where free or low-cost publications are exclusively involved, balancing is easy and can be done on a title-for-title basis. If all exchanges were balanced in this way they would not be a problem for anyone. Once money becomes involved, however, balancing becomes far more complicated. A simple title-for-title match-up could still be easy enough to do—that is, in a given fiscal year (FY) the American library purchases 42 monographs and 12 serial subscriptions for the Russian library, which does the same in return. But what if the American library's purchases cost significantly more than the purchases of the Russian library? When dealing not only with different currencies but with completely different economic systems, as happens

when Western libraries exchange with East European libraries, such discrepancies often arise, making balancing a complex and challenging procedure.

While Western libraries have always paid full market prices plus full postage costs for all purchased materials, East European libraries generally have supplied exchange desiderata from their enormous stockpiles of duplicates; or if they had to purchase the books, they paid much lower prices than did their Western counterparts. This was partly because of the lower intrinsic value of East European publications, which are often made with cheap materials, such as highly acidic paper, and partly because the Communist governments heavily subsidized their publishing industries and the postage costs for libraries. Thus, while costs for Western libraries were being driven ever higher by the pressures of a free market, East European costs were kept artificially low by the economic policies of the Communist governments. By the early 1990s some Western libraries were exchanging subscriptions that cost an average of more than \$100 per year with East European subscriptions that cost anywhere from \$1 to \$20 annually, depending on the rate of currency exchange. This contrast inexorably led to disagreements between partners over how to balance exchanges.

East Europeans have always preferred balancing on a title-for-title or page-for-page basis, which is highly beneficial to them. Western libraries are at a tremendous disadvantage under such arrangements, which is why they have generally preferred dollar-for-dollar balancing. From the Eastern point of view, dollar-for-dollar balancing is overwhelmingly disadvantageous because they have to supply Western libraries with multiple publications for each one sent to them. Obviously, some kind of compromise is in order. The "compromise" that most Western libraries have come up with is to allow the exchanges to run as they always have, with the East European libraries setting the currency-exchange rates (often with little input from Western libraries). The resulting financial "balancing" is weighted heavily in their favor, which means that

Western libraries have, in some cases, been subsidizing East European libraries, just as the East European governments have. In economic boom times this was not a problem; the extra expense seemed compensated for by the service given by our East European partners, who supplied many books and serials that were unavailable through other channels. Also, the prices charged by international vendors were comparatively so high that exchanges did not seem financially disadvantageous. As long as the economy in the West was strong, and as long as many Eastern publications were not available through commercial vendors, the general lack of balance seemed like a cost worth paying. This lopsided arrangement could not be expected to last indefinitely; the slightest pressure would send it spinning out of control. The political and economic transformations taking place in Eastern Europe in the 1990s constitute more than just a slight pressure.

Inadequate Supply

In addition to the difficulties described above, some East European partners have not been sending as many materials as they did in the past. For example, in FY1992, the year following the break-up of the Soviet Union, exchange receipts at the University of Illinois at Urbana-Champaign, a major Slavic collection, were down more than 50% from FY1991; anecdotal evidence from other Slavic librarians, given at the annual Slavic Librarians' Workshops held since 1991 at Urbana, Illinois, indicates that Illinois's experience was typical. Fiscal year 1993 showed a significant rebound, but it seems premature to say that exchanges are now stabilized. Furthermore, over the past two years Slavic collections in the West have received letters from some of their partners saying that they can no longer maintain exchange relations, and that if Western libraries want to receive their publications they now have to subscribe to them. In extreme cases, reliable, long-standing East European exchange operations are being terminated altogether. How serious the lack of materials received has become is illustrated by a

survey of Illinois' serials, both purchased and exchange, that was conducted in June 1993. It was discovered that the continuations averaged 3.9 issues (i.e., more than a year) behind, while the periodicals were 13.6 issues behind; other Slavic collections report similar delays. There are several reasons for this, such as the general decrease in East European publishing and the acute shortage of paper, which delays printing. But whatever the reason for the slow down, it is clear that Slavic exchanges have not been as productive as they once were.

ANALYSIS

These observations raise the question of the value of exchanges, both across the country and over the years. Are Western libraries in general experiencing the same shortages as Illinois and other libraries are? And if so, how are they coping with them? How have exchanges changed through time? Are these problems really new, or have they been experienced before? The first question was addressed through a questionnaire circulated among a group of Slavic librarians at Western libraries. The second and third were addressed by examining two similar studies conducted in earlier years. These studies are Ruggles and Mostecky's survey of Slavic collections, published in 1960, and Nadia Zilper's survey of Slavic acquisitions, published in 1986 (*Proceedings*). The three studies were compared and contrasted to determine the advantages and disadvantages of using exchanges as reported by the respondents to the three different studies. Concrete examples and statistical data are used as the basis for comparison whenever possible, and generalities are occasionally illustrated with individual examples or with comments (of a more subjective nature) gathered from various Slavic librarians working at Western libraries. Although the three studies involved were widely differentiated by time, content, format, and particularly by presentation of results, every effort has been made to ensure consistency of analysis. The comparison shows that East-West exchanges have remained consistent, in

both the problems and the advantages they offer, despite sweeping changes in the economic and political systems that determine their operation. It also shows that Western librarians remain equally consistent in their attitudes toward exchanges in that today's librarians, like their predecessors, show the same willingness to reap similar benefits, while putting up with similar difficulties.

1960

THE CONTEXT

Easing of Restrictions

The late 1950s and early 1960s were exciting times for Slavic collections in Western libraries. The Soviet Union was at the scientific forefront, having stunned the world in 1957 with the launch of Sputnik, the first human-made satellite. With that one action the Soviets became the technological standard-setter for the world. Other advanced nations, including the United States (U.S.), suddenly felt the need to re-evaluate themselves, to avoid being left behind. In the U.S. both scholarly and popular interest in the Soviet Union had been building since World War II. Ruggles noted (1958, 111), "American resources of publications of a given country are in direct proportion to the involvement of the foreign policies of the two nations with each other, whether in friendship or enmity," suggesting that increased interest in the U.S.S.R. was an expected side effect of the escalating pressures of the Cold War. For more than ten years, however, that interest was undermined by distrust between the two governments. The Stalinist government was unwilling to exchange information freely with the West, and McCarthyism had a similarly depressive influence in the U.S. Three decades passed before the Soviet Union was truly open to the West, but the mid-1950s, when Stalin died and Senator Joseph McCarthy was discredited, were a major turning point that led to the proliferation of cultural exchanges in 1958. After that, the book and serial market expanded considerably and publications began moving in both directions with more freedom than before because of the

easing of both Soviet export restrictions and American restrictions on imports from Communist countries. Before then, U.S. libraries had difficulties importing Soviet publications because they were classified as Communist propaganda.

Another factor contributing to the change was the easing of travel restrictions. Librarians have always known that visiting exchange partners for face-to-face conversations is essential to good exchange relations. Before the Soviets allowed Westerners to travel in their country with relative freedom, such personal contact was all but impossible.

RAPID EXPANSION OF EXCHANGES

The dramatic changes taking place at this time are illustrated by the fact that from 1946-52 only about 200 Soviet periodicals were available on subscription outside the U.S.S.R., while in 1958 the number soared to 748 (Ruggles and Mostecky 1960, 86). Although the situation was improving, book export was still subject to myriad restrictions, which American librarians were anxious to circumvent. This was especially true of provincial publications (i.e., those published outside the major metropolitan areas of Moscow and Leningrad). Book export was still tightly controlled by the official Soviet book-exporting agency *Mezhdunarodnaia Kniga* (International Book). Its high prices and restrictions amounted to de facto censorship. In the late 1950s, newly expanded exchange opportunities created ways around those restrictions so Soviet libraries eagerly began to offer exchange agreements and American libraries reciprocated with equal eagerness.

The Soviets were enthusiastic about exchanges because they had (1) stocks of duplicate materials estimated by Western observers to be anywhere from 500,000 to 5 million volumes (Ruggles and Mostecky 1960, 69) with which to fulfill orders from exchange partners and (2) very low reserves of hard currency with which to purchase American publications. Unlike the Soviets, American libraries generally did not have large stocks of duplicates and had to purchase the requested items; but in

the late 1950s the U.S. was experiencing an economic boom and, presumably, this did not then seem like a hardship.

1957 Study Begun

It was during this time of growth, in the autumn of 1957, that Ruggles and Mostecky conducted their study of Slavic librarianship in the U.S., sending 1,403 questionnaires to 1,203 college, university, public and special libraries, or divisions of such libraries, of significant size. Completed questionnaires were received from nearly 75% of those polled; of these, 39% "reported some holdings of East European publications or at least plans to start such collections." The remaining 61% reported having no relevant holdings and no plans to start building such a collection (Ruggles and Mostecky 1960, 5). The timing of this survey coincides with the opening of the cultural exchanges mentioned above; in many cases the full effects of the changes brought about by the easing of restrictions had probably not yet been felt by the responding institutions.

Just how restrictive the pre-Sputnik environment was is illustrated by the acquisitions difficulties and rather haphazard approach to Slavic collection-building noted by Ruggles and Mostecky. They report that some respondents could not even make an estimate of the size of their collections, and that few kept statistics differentiated by country of origin or by language. Furthermore, they observed that selection policies for Slavic collections were nonexistent and that fully 80% of the respondents reported having major problems with acquisitions (Ruggles and Mostecky 1960, 9–15). Prior to the changes of the late 1950s, nearly all Soviet exchanges were operated through Lenin Library (now Russian State Library) in Moscow, which resulted in slow, heavily censored service. By 1958 this situation had radically changed. To illustrate this point, Ruggles and Mostecky (1960, 59) report that in 1955 the Library of Congress had four exchange partners in the Soviet Union, but by January 1958 the Library was receiving 63% of all its Slavic materials through 200 different Soviet exchange partners.

Unfortunately, Ruggles and Mostecky give no formal, or even semi-formal statistical analyses of the data they gathered on exchanges. Instead, in their summaries and discussions they use terms such as "most," "several larger libraries," "more frequent," "a large number of," and so on. It would be more informative if there were precise figures or percentages to compare to the figures given in later studies, but that is simply not the case.

ADVANTAGES OF EXCHANGES IN 1960

To Ruggles and Mostecky's respondents, exchanges were valuable ways to build their collections while circumventing the many remaining restrictions on Soviet book exports (1960, 72). No other advantages were discussed.

DISADVANTAGES

The main disadvantage chronicled in Ruggles and Mostecky's study was that exchanges were not economical. As the authors note, exchanges cost the East Europeans little or nothing because they had such large stocks of duplicates with which to supply the needs of their partners, while American libraries had to purchase nearly all East European exchange requests (Ruggles and Mostecky 1960, 59, 70). This meant that exchanges were very difficult, or impossible, to balance. The balance was heavily weighted in favor of the East European partners, and many Western librarians were displeased with that situation. Western libraries thus found themselves in a less than desirable position, buying expensive scientific and technical literature, which, as Ruggles and Mostecky note (1960, 70) is what the East European exchange partners wanted most, and receiving low-quality, low-cost East European publications in return, which contributed to the balancing difficulties.

Ruggles and Mostecky report (1960, 71) that "with only one exception" all of their respondents observed that exchanges were also not economical because of the large amounts of time necessary to deal with them. A further

contributing factor to the expense was the necessity for travel to Eastern Europe to meet partners, which consumes large amounts of both time and money.

SUMMARY OF THE FIRST PHASE

Ruggles and Mostecky, in a rather lukewarm assessment of exchanges, concluded that the true value of an exchange could not be stated in solely economic terms. They advised (1960, 72) that exchanges be used as supplements to other forms of acquisition and only for acquiring items not available through other channels. They also recommended (1960, 74) a substantial transformation of the system whereby Western libraries would purchase the East European duplicates thereby supplying them with the hard currency they need to purchase Western publications.

This was a time of tremendous growth for Slavic collections in the West when new acquisition possibilities of all sorts were being pursued. Exchange relations were new and exciting, but many Western librarians were already concluding that the advantages of exchanges were practical, in that they allowed the acquisition of materials that otherwise would not be available, but not cost-effective, neither in the actual bottom-line economic sense nor in the amount of time necessary to manage them. As Ruggles and Mostecky noted, many exchange agreements were entered into with much enthusiasm but without much knowledge, with the result that many Western librarians were soon disillusioned. The authors clearly imply that some Western librarians were rather naive in their approach to exchanges while the East European librarians showed themselves to be "astute traders and hard bargainers" (Ruggles and Mostecky 1960, 70). To combat this problem, Ruggles and Mostecky advise (1960, 71) that in establishing exchange relations Western librarians should consider Western research libraries as a whole, because if one library sets up an exchange that is heavily advantageous to the East Europeans, then the East Europeans will expect that sort of agreement with all others.

1986

THE CONTEXT

Between 1960 and 1986, the West and the East had both undergone many changes. The Soviet Union was no longer the stunning technological leader it had been in 1960; the main threat to America's economic and technological dominance was now Japan. But the Soviet Union was still the main political and ideological opponent, still the "Evil Empire," and for these reasons interest in all things Soviet was still making Slavic acquisitions a priority at many Western libraries.

At the time Zilper conducted her study of Slavic acquisitions (1984), the Soviet government had undergone two rapid transfers of power, and another year would see the rise of Mikhail Gorbachev and his policy of *glasnost*, which would lead to many other sweeping changes. Timing is important to note when considering Zilper's study. Her data were gathered in 1984, on the eve of those changes, and thus reflect the situation as it existed after three decades of post-Stalinist, but still hard-line and firmly Communist, Soviet policy.

Conditions changed in several ways for Western librarians since 1960, most importantly in the areas of acquisitions and finances. The 1950s and 1960s saw booming economic growth for the U.S. in general and for library funding in particular; but by the 1980s the economy was no longer enjoying the robust health it had known in the fifties, and library funding was being cut back or slashed.

In 1984 the major Slavic collections in the West were well established, as were their primary acquisitions procedures, some of which were new since Ruggles and Mostecky published their study. The most important of the new procedures were blanket orders, which were instituted in the early 1960s by several major book dealers, such as Les Livres Étrangers, of Paris, and Kubon & Sagner, of Munich. By 1984 their impact was notable: up to 75% of Zilper's respondents purchased a significant portion of their monographs through several different blanket order vendors (*Proceedings*, 479-82). These

vendors were also listed as important sources for current serials (*Proceedings*, 483-86). It was in this environment that Zilper distributed her questionnaires to the 60 university libraries listed in the 1984 Directory of the Slavic Librarians' Conference of the American Association for the Advancement of Slavic Studies (*Proceedings*, 470). She received complete questionnaires from 34 libraries, or 56.6% of those polled (*Proceedings*, 470).

In the same volume that contains Zilper's article are a number of short reports on exchanges from several Slavic collections in both the East and the West. Information from these reports is interspersed with information from Zilper's study throughout the following discussion.

Zilper found (*Proceedings*, 470-86) that, despite the increased options noted above, 70.6% of her sample still had exchange programs with the Soviet Union and other East European nations. Of these, 56% had separate budgets for Slavic exchanges. The emphasis on Soviet exchanges, as opposed to East European exchanges in general, is illustrated by the fact that only 17.6% had exchange budgets that included coverage for Eastern Europe as well as the U.S.S.R. Current monographs were received through exchanges by 67.6% of Zilper's respondents; of these, most received less than 50% of their total monographs in this way. Similarly, 64.7% of the respondents reported receiving anywhere from 5% to 80% of their Soviet periodicals through exchanges. Obviously, in the mid-1980s exchanges remained important, even though commercial sources had increased since 1960.

ADVANTAGES OF EXCHANGES IN 1986

Economy

Many librarians of the mid-1980s claimed that the main advantage of using exchanges was economic. Representing this position is one librarian who reported (*Proceedings*, 405) having paid \$500.00 on exchange for materials that cost \$1500.00 from a popular commercial vendor. Another notes (*Proceedings*, 432) "there is no doubt that cost is still an overwhelming

factor in favor of exchange"; still another (*Proceedings*, 389) refers to his exchanges as "efficient, cost effective," and a "crucial" source for all Slavic-language materials. This is an interesting contrast to the evaluations of the librarians surveyed by Ruggles and Mostecky in 1960, who, with only one exception, said that exchanges were not economical.

Idealism

In another contrast to Ruggles and Mostecky's study, the 1980s librarians justify exchanges as important aspects of cultural exchange and international communication by saying, (*Proceedings*, 406, 466, 457) "exchanges are our opportunity to send American culture, thought, and scholarship to Eastern Europe with the enormous dividend of adding [Eastern European] culture to our libraries"; "exchanges . . . could be some of the most important vehicles in the process of disseminating information and fostering greater understanding among peoples"; and "[exchanges] will always be a means of keeping peace and friendship in the world." The last comment came from a Czech librarian, which indicates that this altruistic attitude was not uniquely Western. Another major reason listed for maintaining exchanges is appreciation for the East European partners' willingness to provide microfilms of antiquarian materials and back issues of out-of-print serials. The major advantage noted by Zilper (*Proceedings*, 465-66) and by Ruggles and Mostecky is the acquisition of materials not available through other channels.

Discussion

As can be seen, the reasons for the popularity of exchanges in 1986 were both the same and different from those noted in 1960. The most striking difference is the new idea that there were financial reasons for these arrangements in addition to the practical advantages that had been noted since the beginning of the exchange explosion in the late 1950s.

Also interesting is the new ideological component of the respondents' comments, which removes the emphasis from the bottom line in evaluating exchanges

and tacitly suggests that the performance of such a valuable service is worth a little financial sacrifice. Such idealism seems rather unexpected in light of the financial difficulties so many libraries were experiencing at the time. One would expect that at such times librarians would be concerned with getting as much value for their money as they could, but the data clearly show that this is not the case.

DISADVANTAGES

As with Ruggles and Mostecky's study, the disadvantages of exchanges in 1986 centered around two themes, which were the amounts of work involved in running them and the difficulties of maintaining balances. These two problems are interrelated, as it is primarily the difficulty of maintaining balance that causes exchanges to involve so much work.

Heavy Work Load

As an example of the labor-intensiveness of exchanges, the same librarian who praised the great savings achieved by using exchanges rather than commercial vendors (see above) went on (*Proceedings*, 405) to say that even such substantial financial savings as these may not compensate for the tremendous amounts of time and energy necessary to run exchanges. The 1986 respondents reported that much of that time and energy was taken up with establishing currency-exchange rates—a topic that was hardly mentioned by Ruggles and Mostecky.

Currency-Exchange Rates

This problem arises only with value-for-value balancing, which is the method preferred by "the majority" of Zilper's respondents, although other methods, such as title-for-title or volume-for-volume, were also used (*Proceedings*, 473–74), and were as simple to operate as ever. In order to make sense of value-for-value balancing, the currencies used must be equated, and the rate used in the equations is what causes the problems. How is that rate determined? While Zilper gives no figures, she notes that "some" libraries used the

New York Times, others used the rates advocated by some prominent vendors, and still others used a rate calculated through some other, more complicated, method. But most, as Zilper noted, "do not give much thought" to the matter; furthermore, "the majority" accept without question the exchange rates dictated by their East European partners. Zilper further noted that although most indicated that they were satisfied with this method, many wrote "hostile remarks" on the questionnaire about the unfair exchange rates, which were dictated by the partners, and which did not "reflect the value of the ruble on the Western market" (*Proceedings*, 474). This dissatisfaction with currency-exchange rates was echoed by a Yugoslav librarian (*Proceedings*, 410), who noted that this problem led Western exchange partners to undervalue Yugoslav books. This gives an interesting perspective on the problem from the other side of the Atlantic.

Discussion

In light of all these complaints about currency rates and balancing, the common assertion that exchanges are economical is hard to fathom, and is in strong contrast to Ruggles and Mostecky's data. There were a few 1986 librarians who agreed with the 1960 librarians on this topic, however. Representative of these is one librarian (*Proceedings*, 432–33) who estimated that administrative costs added "perhaps 25% to the cost of each item" received on exchange. He went on to say that although exchanges were still important to his library, he expected them to be less so in the future, and that their preeminent position would be taken over by book dealers. Also, while a few of the 1986 librarians said that their exchanges were expanding, most said they were cutting back on exchanges because of "galloping inflation" (*Proceedings*, 445) or "the substantially higher cost of providing publications on exchange" (*Proceedings*, 430). If exchanges were so economical, why were they not being expanded with the same alacrity as they were in earlier years?

The mystifying nature of the claims of the financial advantages of exchanges was

further underscored by Zilper's discovery that bookkeeping for exchanges was rather spotty among those who responded to her questionnaire. She noted that despite the recognized importance of keeping exchanges in balance, only 50% of her respondents answered questions about bookkeeping at all, and of that group only one librarian reported (*Proceedings*, 475) using a computer for this purpose (thus representing a major commitment to record keeping), while "most" of the others kept a manual ledger. One librarian candidly wrote (*Proceedings*, 452) that his exchange accounting was "one-sided," with no attempt made to record the amounts quoted by the partners. These data suggest that for the other respondents, i.e., the 50% who did not answer this question and those who did not claim to use a computer or keep a ledger, bookkeeping was either haphazard or nonexistent. Although, as Zilper notes (*Proceedings*, 475), it is neither necessary nor possible to keep all exchanges balanced at all times, it is unavoidable to wonder how authoritative the claims of financial benefits can be. Upon what evidence is that opinion based?

The claimed financial benefits of exchanges could be the product of insufficient data or inefficient bookkeeping, or, perhaps, born of an altruistic desire to be helpful to our less fortunate Eastern partners. Zilper similarly concludes (*Proceedings*, 487) that claims that exchanges are economical are "highly questionable," easily disproven, and that exchanges are, in actuality, "laborious, time-consuming operations," whose total cost must include not only the value of the books but also the cost of labor.

SUMMARY OF THE SECOND PHASE

In the thirty-plus years since the publication of Ruggles and Mostecky's study, political and economic conditions had changed in both the West and the East, but collecting Slavic-language materials was still a priority for those libraries that had a commitment to this area, and the conditions under which West-East exchanges operated were still very much the

same as they were in 1960. Despite expanded commercial opportunities for acquiring Slavic materials, exchanges were appreciated in the mid-1980s, as they were in 1960, for their capacity to supply materials that were difficult or impossible to access. Exchanges were resented for the disproportionate amounts of time needed to keep them going. In contrast to the 1960 study, there is a common perception, easily disproven, that exchanges were economical. There was also a strong ideological commitment to exchanges, that perhaps made them seem more valuable than objective data would indicate.

Despite these two changes, however, the attitudes toward exchanges expressed by the librarians in the mid-1980s on the whole closely resembled those of the librarians in the late 1950s. As was the case then, although there were acknowledged difficulties, the 1980s respondents were willing to keep exchanges going. After more than twenty years of operation arrangements were well established and the importance of inertia in keeping exchanges going must not be overlooked. The early, rather naive enthusiasm of the late 1950s was replaced in the mid-1980s by an idealism that might have been equally naive. While that idealism might have come from a different source than the enthusiasm of the 1960s, it was nonetheless much the same in its effect: it heightened Western librarians' opinions of exchanges in the face of plain evidence that the West was subsidizing East European libraries by participating in such unbalanced arrangements. This impression is reinforced by the often expressed opinion that book exchanges were a type of cultural exchange. It would seem that Western librarians wanted to keep their exchanges going for reasons that had at least as much to do with international good will as with efficient library operations.

1993

THE CONTEXT

Between 1984, when Zilper conducted her study, and 1993, when another study was conducted, the political situation in

Eastern Europe had changed dramatically. Gorbachev came to power in 1985, the Berlin Wall was demolished in 1989, and in August 1991 a military coup resulted in the ouster of Gorbachev and the breakup of the Soviet Union, which led to significant economic liberalizations in the countries of the former U.S.S.R., and in its former satellites. Since then, Westerners no longer deal with the Soviet Union, but with Russia, Ukraine, and other independent republics. Through the news media, we are inundated with graphic accounts of economic privation in all the formerly Communist countries, not to mention the horrifying conditions under which people are suffering in the war-torn former Yugoslavia. Seemingly constant rebellions in former Soviet republics and the recent resurgence there of ultraconservative, ultranationalist sentiments, not to mention an armed revolt in Moscow itself, have Westerners wondering who will be in power from one day to the next. This uncertainty has Western librarians speaking wistfully (and not altogether facetiously) of the days of Brezhnev, when Slavic books and serials, both purchase and exchange, arrived with Communist regularity.

CHANGES SINCE 1990

As might be expected, all this political turmoil has had a marked effect on Western libraries and their Slavic collections. For example, many titles have ceased or suspended publication; many others have changed their titles, often to something less politically connotative. These changes entailed much extra work in recataloging, re-marking, and cross-referencing records.

Fewer Items Received by Western Libraries

Illinois' experiences with materials from the former Yugoslavia illustrate vividly the effects of war and economic privation on book and serial production and distribution. Over the last two years, Illinois received from just one vendor 43 "ceased (or suspended) publication" notices for

serials from the former Yugoslavia. Similarly, in September 1993 when the 1994 subscription-renewal invoices were received from the same vendor, 103 invoices for journals that had not been arriving were sent back; of these, 57 (or 55%) were for serials from the former Yugoslavia. Furthermore, Illinois' records indicate that no shipments from exchange partners in some of the former Yugoslav countries have been received since the war began there. Also, a major book dealer, Les Livres Étrangers, upon whom many Western libraries relied for blanket orders and current serials, went out of business early in 1992, leaving many Western librarians scrambling for alternative vendors. This loss of production is reflected in lower book receipts for Western libraries. For example, the Slavic Library at Illinois received a total of 6,364 volumes, through both blanket orders and exchanges, in FY1990, but in FY1993 only 4,802 volumes were received, a decrease of 25%. These figures are similar to those reported by other Slavic librarians at the annual Slavic Librarians' Workshops.

Changes in Publication and Distribution

One of the reasons for the overall drop in volume is the change in publication policies that came in the wake of the breakup of the Soviet Union and the economic changes in Eastern Europe. First, publication in general is down. In 1992 only 27,915 titles were published in Russia—13,000 less than in 1990, the level of the 1930s (Maisuradze 1993). Second, the number of books available for export was reduced fourfold in 1992 (COSEELIS, 2). Third, the publishers were not printing the same sorts of materials as before, and "serious literature was suffering" in Russia (COSEELIS, 2). This is because publishers no longer have government subsidies to keep them afloat; instead, they must give the public what it wants in order to stay in business just as any Western publisher must do. Consequently, scholarly publications, which are what libraries most want (but which the average consumer does not), are no longer being

printed in large runs, if they are published at all. A glance through a well-known Russian book-trade newspaper, *Knizhnoe Obozrenie* (Book Review), shows that all too often valuable reference materials, for example, are being printed in runs of as few as 150, and occasionally even fewer, a situation described by some Russian librarians (COSEELIS, 3) as “catastrophic” for academic publishing. It is clear that such limited stocks are insufficient to supply Russia’s own libraries, leaving precious few copies (if any) for export. Scholarly and reference publications are, in general, not big sellers anywhere, so Russian publishers currently are catering to the tastes of a Russian public that is more hungry than ever before for all things Western, and whose tastes in literature are apparently no more elevated than those of the American public. As a result, cheap, hastily translated versions of romance, spy, erotic, and western novels are being turned out by the thousands. Books such as these are of little or no interest to Western libraries. The vendors and exchange partners realize this and they do not send what they know is not in demand. Thus, the main reasons they are sending less is that there are relatively few titles to choose from, and even fewer available copies of appropriate titles. This scarcity has also resulted in inconsistent distribution, with one library receiving issues of a particular journal while another library does not.

In sum, important East European publications are now sometimes difficult to obtain. The reasons for the difficulties have changed since the 1950s, but the effects are the same. In Stalinist times these difficulties were the results of restrictions that were politically imposed, from the top down. In post-Soviet Russia, the problems are caused by economy and productivity, which affect the process from the bottom up. The small print-runs and inconsistent distribution have Western librarians bewildered, trying to understand what is available and what is not. The immediate aftermath of the Soviet breakup was the worst time, when an undetermined number of journals either

skipped an issue or two, or ceased publishing altogether.

1993 SURVEY OF EAST-WEST EXCHANGES

It was in this atmosphere of uncertainty that another survey of Slavic acquisitions was conducted, in the spring of 1993. This survey was designed and administered by myself, with input from Bob Burger and Larry Miller and research assistance from Scott Gillies. The purpose of this survey was to ascertain the extent of the damage inflicted on Slavic collections in Western libraries by the political developments in Eastern Europe. It covered purchased acquisitions as well as exchanges, but only the results of the section on exchanges will be discussed here.

The questionnaire was circulated in March 1993 through electronic mail to the North American and European participants of a Slavic librarians’ e-mail forum. Complete questionnaires were received from 17 (32%) of 53 possible respondents. Although there were over 160 participants in the forum at the time, due to multiple enrollments the number of institutions represented was only 72, and it would be unreasonable to expect more than one reply per library. Of these, those institutions whose only representatives in the forum were graduate students or self-described cataloging or reference specialists, all of whom could not be expected to have information to share on Slavic acquisitions, were eliminated from consideration as possible respondents. This brought the number of possibilities down to 53, a number that corresponds closely to the number of libraries listed as institutional members in the 1993–1996 membership directory of the American Association for the Advancement of Slavic Studies, and to the number of American Slavic collections in the Social Science Research Council’s *International Directory of Librarians and Library Specialists in the Slavic and East European Field*. Thus, the population size of 53 was considered accurate. See table 1 for a list of the responding libraries.

TABLE 1
LIBRARIES THAT RESPONDED
TO THE 1993 STUDY

Arizona State University
University of California at Berkeley
University of California at Los Angeles
University of Chicago
Emory University
Essex University (England)
University of Hawaii
University of Illinois at Urbana-Champaign
University of Iowa
University of Kansas
McGill University
University of Michigan
Michigan State University
Oxford University
University of Pittsburgh
Radio-Free Europe/Radio Liberty
University of Virginia

Responses were tabulated and informally presented at the Slavic Librarians' Workshop held at Urbana, Illinois, in June 1993. Of the 17 respondents, 12 reported having one or more exchanges, on which they spent an average of 47% of their total budgets. The numbers of agreements ranged from twenty or fewer to more than 400, with a strong direct correlation between the size of the collection and the number of partners. These findings clearly show that in the 1990s exchanges still are a major commitment for Slavic collections at Western libraries. While all the respondents reported using firm orders in selecting monographs, 5 of the 12 also had blanket-order arrangements with their partners, where the partners select titles for them according to a predefined subject profile.

ADVANTAGES OF EXCHANGES IN 1993

Although the 1993 librarians were generally not as enthusiastic on this point as the 1986 librarians, nonetheless by far the most commonly cited reason for perpetu-

ating exchanges was economy—7 of 12 (58%) indicated this reason as number one. A comment by one respondent typifies the 1993 attitude, "[exchanges are] still marginally cheaper than most commercial suppliers." Evidently, the belief that exchanges are economical was still prevalent.

As before, there was a strong appreciation for exchanges' capacity to supply hard-to-find materials. Two librarians claimed that exchanges were more reliable than vendors. This theme was not mentioned by respondents to either of the two earlier studies; although in a time of uncertain delivery such as the 1990s, concern with reliability is not surprising. The theme of idealism noted in the 1986 responses was also strongly represented here, with two librarians mentioning that exchanges were a way of "maintaining relationships" with libraries in other countries. One respondent went further than mere idealism and said that he was spending more on exchanges now than in the past because he was "trying to keep the exchange avenue open and help [our exchange partners] out in this difficult financial time." In contrast, only one respondent claimed to be "ruthless" in terminating exchanges that gave poor value for the money. Thus, it is clear that the "feel good" advantage of using exchanges was still in evidence.

As can be seen, despite many surrounding changes, exchanges were still viewed with enthusiasm by Western librarians. The reasons for the popularity of exchanges have changed little since 1986, even though political and economic conditions have changed considerably and productivity has been inconsistent.

DISADVANTAGES

When asked to describe the difficulties they experienced with exchanges, 7 respondents gave no answer, which suggests either that they had no particular difficulties or perhaps that they were so overwhelmed that they did not know where to begin. Reinforcing the former interpretation is the high overall satisfaction rating for exchanges. The average rating was

four on a five-point scale (with five the highest). The five who answered questions about exchange difficulties divided their comments nearly equally among three categories of difficulties:

1. Exchanges are difficult to manage and to keep in balance;
2. Exchanges are unreliable (in direct contradiction to those who reported appreciating exchanges for their reliability); and
3. Exchanges take up a lot of time and effort.

Illustrating the management problems, only one respondent chose the option "easier to manage"; underscoring this attitude is another respondent, who wrote, "You've got to be kidding" in the margin next to this option. Balancing difficulties were cited frequently and were largely traceable, as they were in 1986, to the well-documented pricing discrepancies between Western and Eastern publications and to settling on a fair rate of exchange for the different currencies involved, a problem that has considerably worsened since the former Soviet-bloc nations began instituting economic changes.

East European currencies are worth very little abroad, as quoted in the *New York Times*, June 19, 1994, \$1.00 = 28.88 koruna (Czech); 103.1 forint (Hungarian); 22,686.00 zloty (Polish); 1,959.99 rubles (Russian); 32.54 koruna (Slovak). This has long been the case, but now inflation has made these currencies worth little at home, as well. The East European partners deal with these difficulties by juggling the currency-exchange rates used in figuring the prices for library exchanges. For example, in recent months one of Illinois' major Polish partners lowered the rate from \$1.00 = 2,500 zloty to \$1.00 = 1,000 zloty, a significant change that was instituted without prior notification or consultation. This means that Polish zloty are here being valued at a rate considerably higher than the international standard. Since then, this same partner has changed the rate twice, first to \$1.00 = 4,000.00 zloty, then to \$1.00 = 7,000 zloty, both times without consultation. Although the partner's graded raising of the

rate indicates a sincere desire to be as fair as possible (without being forced out of the exchange market altogether), even at the most recent rate Illinois is still being charged more than three times the international standard. Such unilateral changes are not unusual.

Concerns expressed over the reliability of exchanges are contradictory, both in the responses of the librarians and in the context of the study. The service Western libraries receive varies, but the data suggest that despite some fluctuations, no major patterns of change have yet occurred. When asked how their exchange relations had changed since the upheavals of 1989-90, 6 respondents gave no answer, thus suggesting no changes; 4 specifically stated that they noticed no important changes; and only 2 said they had observed significant changes in what they were receiving on exchange. In conclusion, it seems that exchanges in 1993 were probably not significantly less reliable on the whole than they had ever been. In general, aside from the war-devastated and embargoed republics of former Yugoslavia, East European exchanges seem to be operating at levels reported as satisfactory by their Western partners.

The labor-intensiveness of exchanges has not changed since either of the two earlier studies were conducted. The 1993 respondents report having, on the average, three (mostly part-time) employees working an average total of thirty-plus hours per week exclusively on exchanges. These employees spend their time processing orders for exchange partners, keeping track of shipments and, to a lesser extent, computing balances.

In conclusion, aside from the mention of reliability in 1993, the advantages and disadvantages of exchanges, as perceived by Western librarians, are much the same as in 1986, even though the economic and political conditions surrounding them have changed considerably. Exchanges are still seen as difficult, labor-intensive operations that are, nonetheless, economical; also, there is still a strong ideological commitment to sharing the resources and values of the West with our colleagues in the East.

EXCHANGES AND ECONOMY

Computing the Real Costs of Exchanges

As noted above, the theme of economy as an advantage in using exchanges is commonly mentioned in the 1993 study, as it was in 1986. As Zilper maintained, however, that contention is easily disproven, and one can't help but wonder upon what evidence this conclusion is drawn by so many librarians.

Because it is in the very nature of an exchange agreement that no money is directly paid from one partner to another, how does one know precisely how much a certain exchange publication has cost? The most obvious answer to this question is to compare the prices listed by exchange partners on their packing slips to the price of the materials sent to them. However, not all East European exchange partners list prices; also, as discussed above, when prices are indicated, they are often equated to dollars at an unrealistic rate.

An alternative would be to compare the prices paid to vendors for Slavic purchases to prices paid for items purchased for exchange partners—these, after all, constitute the actual exchange expenses for Western libraries, not the questionable valuations the partners give for their shipments. Although no broad-range average prices for purchased serials are available at this time, it seems reasonable to use Illinois' average prices as a representative, because data gathered in the 1993 study show that Illinois is closely representative of the larger sample in regard to blanket-order prices: The average price per volume for blanket-order monographs for the 1993 respondents was \$15.61, virtually identical to Illinois' average blanket-order price, which is \$15.41. The reasoning here is that because Illinois is so close to average in one category of purchased materials, it probably is also close to average in other categories. In FYs 1993 and 1994, Illinois paid an average of \$79.27 apiece (excluding postage, but including volume-order discounts) for Slavic serial subscriptions; this price will be used as representative for Slavic serials

subscriptions in general throughout the following discussion.

The respondents to the 1993 study reported paying an average of \$111.75 per subscription for their East European exchange partners, \$32.48 more than, or 141% of, the average price for Slavic serials (\$79.27). Similarly, for monographs, the 1993 respondents paid an average of \$24.75 for books purchased for exchange partners, or 159% of the average price for blanket-order books (\$15.61). These data strongly indicate that purchasing Slavic materials from vendors is significantly more economical than purchasing Western publications for East European exchange partners. This, in turn, suggests that, at least with title-for-title exchanges, more reliance on purchase acquisitions ought to be to the financial benefit of Western libraries, not the reverse.

The relevance of these observations is less obvious with value-for-value exchanges, of course. If significantly more titles are received from a partner than are sent to that partner, these price discrepancies could be balanced by the volume of books and serials received. No data to support or refute this possibility are available at this time, but the number of East European exchanges that have either cut back or terminated altogether (see above) suggests that the materials-sent versus materials-received ratio is unlikely to make up for the high prices. A comprehensive survey of this topic remains open for future research.

Availability of Materials

It is abundantly clear that Western libraries pay high prices for materials sent to their partners, significantly higher than they pay for Slavic materials purchased directly from vendors. However, a simple price comparison cannot tell the full value of Slavic exchanges because, as has been consistently observed through three studies and over more than thirty years, not all Slavic materials have been available through commercial channels. But is this still true? With the formerly Communist countries now undergoing major economic transformations, perhaps materials that before were available only through

exchange can now be purchased through vendors, at substantial savings.

To obtain at least partial answers to these questions, Illinois surveyed periodicals received from partners in Russia, Belarus, and Ukraine, and looked up those titles in the 1994 serials catalog of the Victor Kamkin Bookstore, a major importer of publications from the former Soviet Union. Of 73 serials sent by 11 different partners in the 3 above-named countries, 40 (55%) are now available from Kamkin. No data are available at this time to indicate how this percentage might have changed since the alterations in market structure in the relevant countries. The average subscription price for those 40 titles, as listed in Kamkin's catalog, is \$117.58, which is very close to the average price per subscription purchased for exchange partners (see above). Because Kamkin gives up to a 20% discount for volume orders, this average price could be further reduced to only \$94.06, a figure that is closer to the \$79.27 average for purchased Slavic serials. It is clear from this analysis that, for this sample group of partners and this vendor, exchanges could be cut back by 55%, a change that could be to the financial advantage of Slavic collections in the West, not the contrary.

BOOKKEEPING INADEQUACIES

The need to question claims of economy is underscored by the bookkeeping habits (or lack thereof) reported by the 1993 respondents. The results here are in agreement with Zilper's findings. Eight of twelve responding librarians (67%) said they were uncertain as to what they received on exchange; this uncertainty applied to the number of publications received as well as to the types of publications received. Also, only 3 respondents (25%) said that their exchanges were under control. To keep records, 4 respondents (Illinois among them) said they used computers (up 300% since Zilper's study), 4 said they kept their records on paper, and 4 gave no answer. Here again, as with Zilper's study, a significant degree of uncertainty over record

keeping is seen. Reinforcing this impression is the fact that several respondents, in marginal comments, used terms such as "chaos" to describe the current state of their exchanges. How can exchanges be considered "economical" when one-third of the respondents had no information to give on their record keeping methods? Without clear records, how can anyone say anything is economical?

Labor Costs

Also arguing against exchanges being economical is the labor factor. It is clear that exchanges are just as labor-intensive to the 1993 respondents as they were in the two earlier studies. To handle the work involved, the respondents reported having, on the average, 3 employees who work a total of more than 30 hours per week exclusively on exchanges (see above), which suggests that one should add at least 75% of the salary of a library-support employee, say \$15,000.00 annually, to the price of the materials in order to give a more accurate portrayal of the full cost of exchanges.

Availability Revisited

However, a full accounting of exchanges is not this simple. To consider the same data discussed above, 33 of the 73 titles (45%) received from 11 partners (see above) remain unavailable for purchase—from Kamkin at least. Some or all of those publications might be considered of marginal interest; 18 of these 36 titles are scientific reports from various Russian universities, and most Slavic collections do not include the hard sciences in their collection profiles. Perhaps some Slavic collections could do without them and free themselves altogether of the burden and expense of keeping exchanges going. Other collections, however, will probably want to acquire such publications, and if exchanges are the only way to get them, then exchanges will continue to be important to those libraries. It is possible that a broader survey of more titles and the offer lists of more vendors would reveal ever more opportunities for purchasing materials currently being received on exchange, but it seems reasonable to conclude from

this spot-check that a significant portion of Slavic materials probably are still unavailable from commercial sources and so can only be obtained through exchanges.

It is clear that claims of economic advantages of exchanges are not supported by any objective data. But objective data do support the contention that now, just as decades earlier, a substantial number of publications are commercially unavailable, supplied exclusively by exchange partners. For this reason, exchanges in the 1990s are still important sources, despite the labor and expense they undeniably involve.

CONCLUSIONS

Are exchanges worth the effort? The 1993 study answers this question with a resounding maybe. That is, if one considers only the bottom line, the answer is no, but if one considers acquisition of materials that are not available through commercial channels the answer is yes. In the end, the conclusions drawn by Ruggles and Mostecky seem as sensible and relevant in 1994 as they were in 1960: the true value of an exchange cannot be stated in economic terms, and exchanges are most valuable when used as supplemental sources that supply items not available from vendors.

Western librarians would do well to cut back on exchanges and concentrate on purchase acquisitions wherever possible to avoid the expense of purchasing Western publications for their East European partners, but there is no reason to rule them out altogether.

THE FUTURE OF EXCHANGES

Three studies conducted over more than three decades of widespread East-West exchange relations show that although there have been some fluctuations in productivity, exchanges remain remarkably constant, despite sweeping changes in the political and economic conditions that surround them. In 1993, just as in 1960 and 1986, exchanges are valued for their capacity to supply materials unavailable through commercial channels. Data indi-

cate that many materials are still unavailable commercially, which suggests that exchanges should continue to be important sources for some libraries, especially the larger Slavic collections. As one respondent to the 1993 survey observed, "A collection with a huge Slavic clientele cannot exist without a combination of purchase and exchange mechanisms." This observation certainly describes accurately the current situation; whether it will remain true, or whether exchanges will be increasingly supplanted by purchase acquisitions, cannot be predicted with accuracy at this time.

The political situation in Eastern Europe remains unstable, but data show that this need not yet be considered a major problem, as exchanges have continued, with little change in service or in the perception of their value, despite significant political and economic changes in the past. However, recent information indicates that new problems are arising for East-West exchanges. Some of the East European libraries are feeling new economic pressures, from which they were in the past protected by their Communist governments, and which may cause them to cut back on their agreements—and, as was mentioned above, in some cases this is already happening. The Russian State Library, which has been a major exchange source for many Western libraries, reports having "absolutely no possibility of purchasing materials for exchange partners." Its exchanges are entirely dependent on publishers depositing copies of their books, and the Library reports (COSEELIS, 6) that it is having "a hard time getting stuff for themselves," let alone for exchange partners. Western and Eastern librarians agree that Russian publishing is in such disarray that it is "pointless" to use prepublication catalogs to order materials, as these are no longer accurate. Furthermore, some exchange partners now must pay "huge taxes and export and import duties on books," a burden that apparently is not equally borne by all Russian libraries. Another major Russian library predicts (COSEELIS, 6) that fewer periodicals will be available through exchanges because "more and

more publishers insist on selling [their publications] abroad for hard currency." In other words, the publishers want to keep the dollars for themselves, not see them go to the libraries; this also suggests that more and more vendors should be in business as time goes by. These observations are from Russian librarians and it is undetermined at this time to what extent they may apply to East European libraries in general. But it is clear that this situation, combined with inconsistent distribution and the very small print-runs of publications needed by Western libraries, means that neither Western librarians nor their Eastern exchange partners can say with certainty what is and is not available through exchanges—or through purchase, either.

These factors indicate that the future of East-West library exchanges is anything but clear. Will these long-standing and popular agreements be able to weather storms in the future? Only time will answer this question with certainty, but the data presented here suggest that exchanges will outlast economic and political upheavals in the future, just as they have done in the past. Besides, librarians seem to like exchanges, no matter how difficult they are to administer. They like exchanges so much that even clear financial drawbacks do not diminish their

popularity—the “feel good” aspect of the sharing of exchanges and the tendency to keep doing things the way they were done in the past seem to overwhelm consideration of the bottom line. One respondent to the 1993 survey said that perhaps we use exchanges “because they’re there”; in other words, exchanges will be used as long as they remain a viable option. And why not? In such uncertain times Western librarians would be well advised to keep all their acquisition options open, commercial and exchange alike.

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STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

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EXTENT AND NATURE OF CIRCULATION

(Average figures denote the average number of copies printed each issue during the preceding twelve months; actual figures denote actual number of copies of single issue published nearest to filing date: October 1994 issue.) *Total number of copies printed*: average 7,748; actual 7,330. *Sales through dealers, carriers, street vendors and counter sales*: none. *Mail subscription*: average 6,839; actual 6,809. *Free distribution*: average 73; actual 77. *Total distribution*: average 6,912; actual 6,886. *Office use, leftover, unaccounted, spoiled after printing*: average 836; actual 444. *Total*: average 7,748; actual 7,330. *Percentage paid*: average 98.94; actual 98.88.

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On the Cost Differences between Publishing a Book in Paper and in the Electronic Medium

Tom Clark

The processes an author's manuscript must go through to become a book, in paper and in electronic form are compared. From author's manuscript to publisher to printer to distributor, the common and unique features of the two processes are noted and compared. Definitions of paper book and electronic book are proposed. Graphics, art and hypertext features are excluded from the study and distribution by floppy disk is chosen over network distribution to achieve an even, apples-to-apples comparison between the two publishing processes. Publishing electronic books is substantially cheaper than publishing paper books on a per-book basis. The cost savings are realized by the subprocesses of the publication process that can be eliminated for the electronic medium and by the comparatively small space on a computer disk onto which the equivalent paper book can fit.

In this paper I will present a qualitative comparison of the cost of publishing a book in the printed versus the electronic form. The question of which method is less costly will be answered. There is no similar study to be found in the literature. The related literature concerns the transition of information from print on paper to digitized electronic technology.

Hilts notes how computer technology is reshaping the flow of book production. "Before, authors wrote, designers designed, compositors set type, engravers

made plates or film and printers printed. Now any of the functions can be performed by anyone in stream" (Hilts 1992, S15). He asserts that technological advances have caused a 70% savings in typesetting costs already, that is, prior to this study. He further notes the difference between using computer technology to refine existing methods of paper publishing and truly publishing in the computer medium. In other words, the impact of computer technology is already such that the process flowchart for print shown below

TOM CLARK is Head of Circulation, Divinity School Library, Duke University, Durham, North Carolina. Many thanks are due to the following people for their generosity with both their time and professional insight: Neylon Allebaugh, Managing Editor, *Opera Quarterly*, Duke University Press, Durham, N.C.; Kathy Kirschmann, Office Manager, Tseng Information Systems, Durham, N.C.; Bonnie Campbell, Production Editor, Algonquin Press, Chapel Hill, N.C.; and Nicki Florence, Typographer, Marathon Typography, Durham, N.C. This paper would not have been possible without the inspiration and advice of Frederick G. Kilgour. Manuscript received April 8, 1994; revised September 2, 1994; accepted for publication September 29, 1994.

is radically different than it would have been just a few years ago. However, the electronic book being considered here, as defined below, is a completely new medium, not simply a new way of producing an old one. Shatzkin (1984, 192) asserts that publishing management has historically been ignorant of details of the publishing process. Yet, echoing Hiltz, he says it is the suppliers to the publishers, such as the photo compositor operation described below, that have innovated the industry. Eisenburg (1989) notes that scholarly publishing is a more defining enterprise than publishing for the mass market. "Philosophical questions of editing are worked out here [in the field of scholarly publishing]. Procedures for any other [field] can be extracted [from these]" (p. 11). He also observes that "publishers don't provide text, they guarantee it." (p. 18) He also proposes a definition of an electronic edition of a book similar to the one used here, which was suggested by Frederick G. Kilgour. Lacy says that computer technology so lowers the cost threshold for bringing a work to market that many more ideas become available (Lacy 1993, 5). But the key to the accessibility of these ideas shifts from control of artifacts—books, manuscripts, bound paper, etc.—and moves to control of facts and ideas by techniques such as keyword indexing.

Clearly the role of book publishers, like all modern information providers, is changing in many significant ways. With this study, I examine a basic facet of that process of change; what it takes to publish a book electronically versus in the traditional paper format.

MATERIALS AND METHODS

The method for gathering data consisted of a series of interviews with a managing editor of a university press, the production editor of a commercial publisher of fiction, a tour of a typesetting shop and interviews with the managers of two such shops. Two flowcharts were generated from these events. Figure 1 charts the print publishing process. Figure 2, which

depicts the electronic publishing process, was generated by interpolation, that is, comparing the print process with what is necessary to produce an electronic book as defined below.

The purpose of the flowcharts is to identify subprocesses of publishing a book manuscript and to indicate those processes that are common and those that are unique to the two media. These are the processes that all book manuscripts must go through regardless of medium.

Costs are presumed to be saved in the elimination of a process. Initial capitalization and other one-time costs are not considered for either medium, only the cost of the production process itself. The cost of a process is the salary and benefits for workers; materials, both those that go directly into the product (book or disk) and those used in the process; and the amortization of capital costs. Also not included in the comparison are the costs of producing art, graphics and any kind of hypertext capability. By comparing the cost of production for text-to-text, a baseline can be established for comparing the two media, because text—words in written presentation to a reader—is their principal common feature.

For the purpose of this paper, a printed book will be defined as a hard-bound volume of 300 pages with 450 words per page. An electronic book will be defined as a set of computer files—title page, table of contents, text, and index files encoded in a standard machine-readable language such as ASCII.

RESULTS

The publishing process for a book manuscript is illustrated in figures 1 and 2. There are four broad categories, from author to publisher (including photo composition—what used to be called typesetting) to printer to distributor. The processes in italics indicate those steps that are necessary for print, but not for the electronic medium. Therefore, they are omitted from figure 2. Processes in boldface are those that are different in the electronic process but have direct analogies

with the print process. These are included in each flowchart with the updated name. Uppercase indicates steps that are part of the electronic process but not the print process.

Completely gone from publishing in the electronic medium are the following print processes:

- Determining the quality of paper and binding (IIB1a) and the cost of the paper, ink, and binding materials;
- Production of pages for further correction (IIE3—a, b, c, and d);
- Production of camera-ready copy for the printer (IIE4); and
- The entire printing process—burning negatives, producing printer's proofs, making signatures, binding, transporting, and warehousing the results (IIIA, B, C, D, E and F).

Changed from the print medium to the electronic medium are:

- The necessity of handling pages after the precomposition process (see IIE2a—turn each page). This step becomes examining each screen;
- The copying of the results of the composition onto disks (IIG); and
- The mailing, warehousing, and transporting of disks instead of books (IVA, B and C).

For this study I have assumed distribution by disk rather than network distribution. Theoretically it is much cheaper to download a set of files from a network than it is to buy a disk. This would make the distribution process for publishing electronically virtually free from the publisher's point of view. But if one considers the cost of capitalizing a network, connecting to it, and obtaining the hardware to access it, and determining the publisher's role in this process, this assertion becomes unclear. For comparison, it is assumed that a reader will go to a store, or write or call a mail-order house and purchase a disk in the same way he or she now buys a book. Keep in mind though, that a 3.5-inch, 1.44 megabyte magnetic disk can hold several of the 300-page prototype books being considered in this dis-

cussion. An 8 cm optical disk can hold several hundred of these books.

DISCUSSION

This study permits only a qualitative comparison of the cost of publishing books as a set of electronic files versus the traditional Gutenberg codex. Simple text is compared to simple text, that is, I do not include the hypertext features of the electronic medium or any graphics such as art, charts, and graphs that come in printed books. This is to present an equitable comparison of the two media. Whatever value the new features of electronic media add is savings over and above this comparison.

Given the current state of printing technology as represented in the two flowcharts, only two processes involved in electronic publication are not involved in the process for print. They are the formation of the computer files that constitute the electronic book as defined above (IIF), and the copying of these files onto disks (IIG). While these processes are distinct steps in the process of getting from manuscript to market, they are accomplished in seconds by anyone with minimal knowledge of a computer operating system and are virtually cost-free outside of the capitalization costs that have already been excluded.

Regarding the distribution of the two media, the comparison is between the space and work involved in handling computer disks and that for printed volumes. As stated above, the number of words or ideas contained in a single book, and potentially hundreds of our 300-page printed books, can fit on a single disk, depending on which disk one chooses. But even if one book to one disk is assumed, it is clearly cheaper to store and transport a shipment of disks that measure a few square inches and weigh an ounce or so each than the same number of books of several cubic inches and a pound or two apiece.

Greater savings might be expected if one assumes that network distribution—

- I. Author—Manuscript (ms)
- II. Publisher
 - A. Acquisitions Editor
 - B. Establish production budget
 - 1. Design parameters
 - a. *quality of paper, binding*
 - b. *typeface*
 - 2. Level of copy editing
 - C. Copy Editors
 - D. Typeset manuscript to photo compositor (*nee* typesetter)
 - 1. Includes SGML and/or other standardized coding
 - E. Photo compositor
 - 1. Pre-composition (*if necessary*)
 - a. Paper to disk
 - b. Break into chapters (or smaller units if necessary)
 - c. Clean copy? (more than 15 errors/page)
 - d. Double keying—Keyboarder enters ms to file, 2nd keyboarder enters ms as *Docucomp* program compares each keystroke and requests resolution of discrepancies.
 - e. Make backup copy (network)
 - 2. Composition—by Photo compositor
 - a. Programming—(Turn each page and describe all typeface transitions)
 - i. Coding
 - (1) Extracts, verse and/or prose
 - (2) Epigraphs
 - (3) Flush left or right
 - (4) Line spacing
 - (5) Printers queries answered
 - ii. Hyphenation program—Compares all hyphenated words to *Webster's 9th Dictionary* and lists words not found
 - b. Proofing and correction
 - i. Laserproof—unjustified pages, marked up by 2nd photocompositor and returned to 1st photo compositor for comparison with manuscript
 - ii. *Photo Typositor Output (PTO) on disk*
Creates master set of unpaginated repro (*nee* galleys)
Photocopy
 - iii. Return to publisher for corrections
 - 3. Pages
 - a. *Cut and paste pages on cardboard—corrections in 2 line or paragraph patch proofs*
 - b. *Add running heads (incl. page numbers)*
 - c. *Compare to ms and cross-mark printers queries*
 - d. *Return to publisher for corrections again*
 - 4. *Camera Ready for Printer*
- III. Printer
 - A. *Take pictures, burn negatives*
 - B. *Printer proofs*
 - C. *Press*
 - D. *Binding*
 - E. *Warehousing*
 - F. *Transportation*
- IV. Distribution
 - A. Books
 - 1. **Warehousing**
 - 2. **Transportation**
 - B. *Billing*
 - C. *Mailing*

Figure I. Flowchart I—The Publishing Process (Print)

- I. Author—Manuscript (ms)
 - II. Publisher
 - A. Acquisitions Editor
 - B. Establish production budget
 - 1. Design parameters
 - b. typeface
 - 2. Level of copy editing
 - C. Copy Editors
 - D. Typeset manuscript to photo compositor (*nee* typesetter)
 - 1. Includes SGML and/or other standardized coding
 - E. Photo compositor
 - 1. Pre-composition (if necessary)
 - a. Paper to disk
 - b. Break into chapters (or smaller units if necessary)
 - c. Clean copy? (more than 15 errors/page)
 - d. Double keying—Keyboarder enters ms to file, 2nd keyboarder enters ms as *Docucomp* program compares each keystroke and requests resolution of discrepancies.
 - e. Make backup copy (network)
 - 2. Composition—by “Typesetter”
 - a. Programming—(Examine each screen and describe all typeface transitions)
 - i. Coding
 - (1) Extracts, verse and/or prose
 - (2) Epigraphs
 - (3) Flush left or right
 - (4) Line spacing
 - (5) Printers queries answered
 - ii. Hyphenation program—Compares all hyphenated words to *Webster’s 9th Dictionary* and lists words not found
 - b. Proofing and correction
 - i. Laserproof—unjustified pages, marked up by 2nd photocompositor and returned to 1st photo compositor for comparison with manuscript
 - F. CREATION OF THE TITLE PAGE, TEXT, TABLE OF CONTENTS, AND INDEX FILES
 - G. COPY ONTO DISKS
- III. Distribution
 - A. Disks
 - 1. Warehousing
 - 2. Transportation
 - B. Billing
 - C. Mailing

Figure 2. Flowchart II—The Publishing Process (Electronic)

downloading files from a centralized database—is cheaper than producing and distributing disks, though as discussed above, this cannot be proved without resolving other questions.

It might be argued that specific cost quotations are needed to establish actual dollar values before discussing the differences in producing books on the two media. There are masses of data on how much particular publishers spend on a given part of the described processes. But there are so many different ways to add up the process as a whole, and so many factors involved—such as graphics and the kind of work being published (fiction, scientific research, etc.)—that influence the cost of publication that the text-to-text approach used here provides the clearest comparison.

SUMMARY

Based on interviews and shop floor tours of a publishing and phototypesetting shop, descriptions of the process of bringing a book from author's manuscript to distributor are presented for traditional printed books and electronic books. There are substantially fewer steps in electronic book publishing than in traditional print publishing. Therefore, publishing books electronically is cheaper. The cost savings are realized because an entire process (printing) is left out. That is, the four categories of the print process

become three in the electronic medium, and a second section (the typesetter/photo compositor) is reduced by nearly a third.

Publishers have an economic incentive to do away with the paper product. As electronic means of information consumption such as personal computers, laptops, palmtops, notebooks and access to the Internet and other vehicles on the information highway become more popular, the producers of books will have every economic reason to reduce their production of printed books and invest in the new medium. This trend has implications for everyone connected with publishing, the distribution of information, and access to knowledge. As Eisenburg (1989, 18) suggests, the electronic media emphasize the publishers' role as guarantors of the quality of ideas and deemphasize their role as providers of the artifacts that contain them.

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The Bibliographic Control of Foreign Monographs: A Review and Baseline Study

Gregory H. Leazer and Margaret Rohdy

The acquisition of foreign research publications has been an important activity of American university libraries from the early 19th century to the present day. The growth of scholarship in the post-war period, particularly in area studies, has made access to foreign research more essential than ever. In this article we assess the extent of bibliographic control over foreign published monographs. Previous evaluations of national bibliographic utility hit rates and quality assessment studies of bibliographic records are reviewed. These reviews suggest that the bibliographic control over general research monographs is better than the bibliographic control over foreign research monographs. However, the previous studies' varying sampling periods and techniques necessitate a baseline study to confirm the asserted difference of these two groups of monographs. The baseline study reported here confirms a lack of bibliographic control for a substantial portion of foreign monographs. Furthermore, an examination of the source of bibliographic records, the presence of Library of Congress classification, and the level of bibliographic description show that the quality of bibliographic records for foreign monographs is lower than the quality of records for domestic monographs.

The acquisition of foreign research publications has been an important activity of American university libraries from their early 19th-century beginnings to the present day, though the purposes and conditions of this work have changed dramatically during this period. Early on, research publications from Europe were important because of the lack of research collections in the United States and the

relative nonexistence of domestic scholarly publishing activity. The German influence on the developing American research universities meant a growing transatlantic flow of books from Europe into American libraries. Professors solicited gifts for their university libraries and went on book buying trips. Business relationships with European book dealers such as Harrassowitz and B.H. Blackwell

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flourished. These book purchasing efforts were intended to establish and strengthen individual university library collections and not necessarily to strengthen U.S. access to foreign publications in general (Vosper 1976, 514-16).

World War I and the Depression reduced the overseas book trade, leaving gaps in libraries' holdings. The inadequacy of American research collections became apparent as the Second World War began, and library collections of research materials in Russian, Japanese, and Chinese could not meet wartime needs. With the end of the global war, libraries saw clearly the need to cooperate in acquiring research materials from all over the world, well beyond Western Europe. The growth of scholarship in this post-war period, particularly in interdisciplinary and area studies, made access to foreign research more essential than ever (Edelman and Tatum 1976, 233-34).

The Farmington Plan, Public Law 480, the Latin American Cooperative Acquisition Project (LACAP), and the National Program for Acquisitions and Cataloging (NPAC) were organized collection development plans designed to acquire books from areas not previously emphasized in most U.S. university libraries. With NPAC, the Library of Congress (LC) recognized that to be useful to scholars, books should not only be acquired, but also cataloged (Downs and Brown 1982). Both the books and their catalog records are crucial to the timely and efficient flow of scholarly information. Bibliographic control of research publications from throughout the world was centered at LC with the publication of the *National Union Catalog (NUC)*, containing catalog records from both LC and contributing libraries in the United States and Canada. The economies of cooperative cataloging and resource sharing achieved through the *NUC* grew more important in all research libraries.

By the 1980s, the post-war cooperative programs evolved into a more decentralized form of cooperation among research libraries. Large increases in the numbers of books published meant that no single library could aspire to collect comprehen-

sively, particularly in a time of shrinking financial resources. At the same time, bibliographic automation opened new possibilities for library cooperation. National bibliographic utilities, such as the OCLC Online Computer Library Center, Inc., and the Research Libraries Information Network (RLIN), developed bibliographic databases to support cataloging and resource sharing. Bibliographic control of the world's scholarly publishing is now a result of libraries' cataloging the material and placing the catalog record in a national bibliographic utility. Access to the scholarship of foreign countries and the effective use of foreign published research depends on the bibliographic control of these materials (Jones and Mosher 1993).

PURPOSE OF THE STUDY

The purpose of this study is to assess the extent of bibliographic control of foreign published materials in the national bibliographic utilities. Foreign research materials must be cataloged in a timely and consistent manner, so that both the bibliographic records and the materials themselves are available to researchers.

The extent of bibliographic control for foreign publications is likely to vary from country to country and language to language. To what extent is effective control maintained over a foreign country's or region's scholarly output? What proportion of that material is acquired and cataloged? Is the quality of the cataloging sufficient? What are the specific quality problems encountered? Is the material controlled in a timely manner?

REVIEW OF THE LITERATURE

Previous studies on the extent of bibliographic control have concentrated on determining hit rates in various sources of catalog data (e.g., OCLC and RLIN) and on evaluating the quality of the catalog data found. Of the eleven studies and three brief research reports reviewed, seven involved samples from all current acquisitions in three university libraries and a law library, and five used samples of

acquisitions in specific languages or from specific regions or countries. One study was based on a sample of English-language approval books; another on U.S. trade publications in fiction and health sciences.

The hit rate studies focus chiefly on OCLC and report the relative success in locating bibliographic records for samples of currently received monographs in a given library. All of the studies were conducted with the goal of improving searching and cataloging efficiency. Some of the studies are simple reports of percentages found and not found; others report type of copy (Library of Congress vs. network member, full standard records vs. less than full, or exact match vs. near match).

Evaluating the quality of cataloging copy is a subjective process. The distinction between LC and member copy is an implicit quality judgment in these studies. Most libraries treat a catalog record from the Library of Congress as good copy, processed routinely by a paraprofessional or clerical staff member without further examination by a professional cataloger. Member copy is more likely to require detailed examination or revision.

There were many studies in which more explicit quality evaluation was involved examining bibliographic records. In many of these studies bibliographic records were examined for specific types of data, most commonly the presence of Library of Congress classification and subject headings. In other studies the number of changes made to a bibliographic record was recorded, though the standards for these judgments varied from library to library. The motivation to scrutinize bibliographic records for the presence of certain kinds of data is the same as in the determination of the source of a record, that is, to separate records that can be handled inexpensively by paraprofessionals from those that require more expensive preparation by professional librarians.

STUDIES OF GENERAL PUBLICATIONS

The results of six studies of catalog copy for general samples of current mono-

graphic acquisitions are summarized in tables 1 and 2.

Meyer and Panetta (1977) searched 344 monographs in July, August, and October 1974 at the University of Texas-Dallas. The sample was limited to English-language books acquired on approval. This restrictive sample probably inflated the success in locating catalog records over samples gathered without regard to language or method of acquisition. Catalog data were available on OCLC for 92% of the books, but the authors did not identify the source of the catalog copy or evaluate its quality.

Metz and Espley (1980) searched a non-random sample of 396 monographs on OCLC. The books, "on a broad range of subjects" and "from a wide variety of sources" (p. 431), were received in March 1979 at Virginia Polytechnic Institute and State University Library. Books older than two years were excluded from the sample. The authors found copy for 67% of their sample at the time of receipt; however, 6% of these records were less-than-full level.

Boissonnas (1979) studied the quality of catalog copy for law materials by documenting the revisions made to OCLC records at Cornell University Law Library. His sample was drawn from all 301 catalog records used in August and September 1977. No hit rates were reported, but 85% of the records found required revision, with the average record requiring 1.7 revisions (p. 84). Forty percent of the records lacked LC classification because at the time of the study, the Library of Congress did not classify most legal materials (p. 83).

Struble and Kohberger (1987) searched a sample of 7,062 monographs "in a wide variety of subjects and [Roman alphabet] languages" (p. 14) received at the University of Pittsburgh from December 1984 to May 1985. They found approximately 90% of their sample had OCLC copy available at the time of order, with two-thirds of the sample cataloged by LC (p. 17-19). However, the validity of these statistics is questionable as conflicting measures are provided in their tables and in their narrative. For example, at one point they state that their sample size is

TABLE 1
SOURCE OF BIBLIOGRAPHIC RECORD FOR GENERAL MONOGRAPHS

	Search Conducted	% of Sample with Records			% of All Records from LC
		LC (%)	Member (%)	Total (%)	
Meyer and Panetta (1977)	Upon receipt	n/a	n/a	92	n/a
Metz and Espley (1980)	Upon receipt	50	17	67	75
	Four months after receipt	65	22	87	75
Struble and Kohberger (1987)	At time of order	66	27	93	71
Allan (1990)	Upon receipt	n/a	n/a	86	n/a
	One year after receipt	n/a	n/a	96	n/a
Shaw (1990)—Fiction	At time of order	94	n/a	n/a	n/a
Shaw (1990)—Health sciences	At time of order	81	n/a	n/a	n/a
Bleil and Renner (1990)	Upon receipt	80	n/a	n/a	n/a
Rodriguez (1987)	Upon receipt	60	30	90	67
Kastner (1988)	Upon receipt	65	22	87	75

TABLE 2
QUALITY OF BIBLIOGRAPHIC RECORDS FOR GENERAL PUBLICATIONS

	% of Records Less than Full-level	% of Records Missing LCC
Metz and Espley (1980)	6	n/a
Boissonnas (1979)	n/a	40

7,506 monographs. No measure of the quality of the bibliographic records was conducted beyond distinguishing the source of the records.

Allan (1990) compared four databases, *Bibliofile*, *Dialog*, *OCLC*, and *RLIN*, searching 1,000 items processed at Kent State University Library in May 1987, with a second search in May 1988. The sample was primarily domestic monographs (p. 341). She determined the extent to which exact or helpful cataloging was present. Helpful cataloging included

bibliographic records for a different edition or a record that lacked an LC call number or subject headings. A second search was conducted one year later for everything that was not an exact match. At the time of receipt, 86.3% of the sample had exact matches in *OCLC*, and 76.6% in *RLIN*. Additional copy (10.9% and 16.8%, respectively) had helpful bibliographic records. Thus for *OCLC*, bibliographic records were found for 86.3%–97.2% of the sample. However, we have chosen the smaller figure to be conservative as we don't know how many of the 10.9% of the records were actually for another edition. It is also impossible to derive quality measures of these helpful bibliographic records such as records missing LC subject headings. Comparing search results from *Bibliofile* and *Dialog*, which contain only the LC-MARC files, with the two bibliographic utilities, highlighted the value of network member cataloging. *OCLC* and *RLIN* hit rates were 96.4% and 91.3% after the second search, while *Bibliofile* and *Dialog* were 85.9% and 85.2%.

Shaw (1990) studied cataloging copy for two categories of U.S. trade publications, fiction and health sciences, in order to evaluate how quickly cataloging copy appeared in OCLC. The sample of 404 books, searched in 1986, was selected from *Publishers Weekly* forecasts (fiction) and from a health sciences book vendor's notification forms. The author reported finding "authoritative" records (from the Library of Congress or National Library of Medicine) for 94% of the fiction and 81% of the health sciences books. Because the sample was derived from core book selection tools, these rates are probably higher than for samples drawn from general acquisition sets.

We were unable to locate any other recent studies about the presence and quality of catalog data for general collections. There have been a few brief research reports on hit rates made at various conferences. For example, Bleil and Renner (1990) state "at Western Michigan University, LC copy is used for over 80 percent of books cataloged . . ." (p. 100). At the Cataloging Norms Discussion Group of the American Library Association's (ALA) Resources and Technical Services Division (RTSD) in 1987, "Rodriguez described the typical surveyed library as cataloging 60% Library of Congress Copy, 30% [bibliographic utility member copy], and 10% original" (High 1987, 156). At the RTSD Copy Cataloging Discussion Group in 1988, "Arno Kastner divided the flow of new books at New York University as follows: 65% LC copy, 22% member copy, and 13% original input" (High 1988, 118).

STUDIES OF FOREIGN PUBLICATIONS

Since 1991, studies of the availability and quality of bibliographic data have been focused on publications from specific countries or regions outside the United States, perhaps in response to perceived problems in finding catalog copy for these acquisitions. Several of these studies (namely, Gurevich, Sercan, Tsao, and Seymour) appeared as a series of "Notes on Operations" in *Library Resources & Technical Services (LRTS)* in 1994. These

studies constitute a "snapshot" of current bibliographic control for foreign materials, showing availability, timeliness, and quality of the bibliographic records available. Two studies were focused on RLIN and one on OCLC, not to compare these two bibliographic utilities but to evaluate problems in finding and using catalog copy for new books. The hit rates and quality of bibliographic records found in five of these studies are summarized in tables 3 and 4.

Grover (1991) reported on a sample of 298 humanities and social sciences monographs of a general nature from 24 Latin American countries, that were received at a medium-sized academic library from June to August 1983. On the hit rates, Grover found "no important differences between OCLC and RLIN" (p. 409). Searched upon receipt, 37% of the sample had copy on OCLC; after 18 months, the hit rate rose to 88%. Grover limited the sample to books received on approval plan. This action probably drove up the hit rate for the sample because other libraries that used similar approval plans from the same vendors were likely to receive the same books. Grover found that after three months, 32% of his sample had copy available on OCLC; after twenty-one months this rose to 76% (p. 411). He did not report on less-than-full records or records requiring revisions.

Gurevich (1991) studied 507 Russian-language monographs received at the University of Texas-Austin from December 5, 1989 to May 5, 1990. He states that "the pool was probably typical of a medium-sized Russian-language collection in the United States" (p. 459). Gurevich excluded monographs older than three years, probably lowering the hit rate for his sample. Bibliographic records were found for 63% of his sample in OCLC. Member copy was an important portion of the search result, and 65% of the records found lacked Library of Congress call numbers.

Sercan (1994) searched all new Latin American blanket order titles received from December 1992 to February 1993 at Cornell University. She found catalog records in RLIN for 19% of the 783

TABLE 3
SOURCE OF BIBLIOGRAPHIC RECORD FOR FOREIGN MONOGRAPHS

	Search Conducted	% of Sample with Records			% of All Records from LC
		LC (%)	Member (%)	Total (%)	
Grover (1991)—Latin America	Three months after receipt	16	16	32	50
	Twenty-one months after receipt	41	35	76	54
Gurevich (1991)—Russia	Upon receipt?	20	43	63	32
Sercan (1994)—Latin America	Upon receipt	16	3	19	84
	Two months after receipt	38	12	50	76
Tsao (1994)—China	Upon receipt?	7	43	50	14
Tsao (1994)—Japan	Upon receipt?	36	17	53	68
Seymour (1994)—Eastern Europe	Upon receipt?	8	12	20	39
	Polish titles	2	8	10	20
	Non-Polish titles	14	16	30	47

TABLE 4
QUALITY OF BIBLIOGRAPHIC RECORDS FOR INTERNATIONAL PUBLICATIONS

	% of Records Less than Full-level	% of Records Missing LCC
Gurevich (1991)—Russia	25	65
Sercan (1994)—Latin America	60	5
Tsao (1994)—China	2	n/a
Tsao (1994)—Japan	23	n/a
Seymour (1994)—Eastern Europe	n/a	19

monographs received; after two months this rate rose to 57%. However, in her search upon receipt she found full-level LC copy for only 4% of the 783 books searched. Sercan also found that full-level LC in-process records were the largest

quantity of hits for her sample; of the 147 records she located, 60% were in-process records. Books from Argentina likely to be received in numerous U.S. libraries were under-represented in Sercan's sample due to a change in vendor; even so, there is a notable decrease in available copy since Grover searched his sample in 1983.

Tsao (1994) searched 518 Chinese and 250 Japanese books received at the University of Chicago Library from November 1992 to March 1993, finding RLIN copy for 50% of the Chinese and 53% of the Japanese books. After a second search, little additional copy was found for Chinese books, but the proportion of Japanese books with copy rose to 76%. Tsao reported that there was six times as much member copy as LC copy for the Chinese books, while for Japanese books, there was over twice as much LC copy as member copy. For both Chinese and Japanese books, member copy required numerous revisions. Sixty percent of the member records required one or more revisions. Tsao states that the differences in performance between RLIN and OCLC was

probably minimal because "RLG and OCLC have tape-loaded each other's member-contributed CJK monographic records since November 1989" (p. 62).

At the Hoover Institution Library, Stanford University, Seymour (1994) examined all 431 new East European monographs received from August to December 1993, finding OCLC copy for only 20% (p. 275). The comprehensiveness of the Hoover collection, particularly for Polish publications, probably contributed to a lower hit rate than would be found in a typical academic library. Of the 85 catalog records found, 39% were from LC. Nineteen percent of the records lacked LC classification, and 84% required at least one revision.

EVALUATION OF PREVIOUS RESEARCH

There are a number of threats to the applicability of the results from these studies. The timing of the searches affected the probability of locating a bibliographic record. The longer a book has been available, the more likely it is to be cataloged. Low hit rates improved somewhat with repeated searching at a later date. Most of these studies sampled "current receipts," without defining this category more explicitly. It is reasonable to expect that current receipts are not equally current from library to library. The varying nature of the samples might affect hit rates; for example, approval books might have higher hit rates than other samples because network member libraries with similar approval plans are likely to receive and catalog the same books. We also have no information on competence of the various searchers in locating copy present in the database. In order to compare results, we must assume that all the searchers are equally skilled.

Another threat to the applicability of these previous studies is that researchers examined catalog data from different source databases. Two studies examined both OCLC and RLIN; in all the other studies only one of the national bibliographic utilities was looked at. Some of the authors state that they expect similar results from each of the major national utili-

ties, but in only two cases was this hypothesis tested.

Another threat to the external validity of the studies is that none of the studies used a probability sample, and many used different sampling techniques. The set of acquired monographs from one library varies from the set of another library. Most of the general samples come from smaller-sized academic libraries, possibly driving up hit rates and cataloging quality—thereby accentuating the differences between foreign and general acquisition sets.

Readers may evaluate the results of these studies by comparing their library's current acquisitions to the samples searched; however, we hope to identify general trends in the degree of bibliographic control of foreign and domestic publications by accumulating the evidence from a variety of studies of different samples from different libraries, at different times.

How does the bibliographic control of foreign publications compare with the control of general publications? Previous research shows that 67%–93% (a mean of 84%) of general publications have catalog copy available upon receipt, excluding Shaw's sample drawn from core book selection tools. The range rises to 87%–96% (a mean of 91.5%) six months to one year after receipt. In contrast, copy is available for 10%–63% of foreign publications at their time of receipt, and for 32%–76% after a several month wait. Eliminating Seymour's low score of 10% for the Hoover Institution's exhaustive collecting efforts of Polish titles still leaves a 19% hit rate for the low end of foreign publications.

The evidence from prior research on the quality of bibliographic records is less clear. Conventional wisdom states that LC creates better bibliographic records than utility members, and the bibliographic records for the general samples are more likely to come from LC than the records for foreign samples. Approximately three-quarters of bibliographic records for general samples come from LC, while 14%–84% (with a mean of 48%) of bibliographic records for foreign publications come from LC (compare the final columns of tables 1 and 3). There is more

overlap in the ranges for the source of copy than in the amount of copy available. Furthermore, a bibliographic record's source is not necessarily compelling evidence of high-quality cataloging.

Comparing tables 2 and 4 provides a more explicit evaluation of the quality of bibliographic records. The results are less than completely conclusive. There is overlap in the ranges in both sets of samples for both the proportion of not full-level records and the proportion of records without LC classification. A mean of 27% of bibliographic records for foreign monographs are less than full level; the only study for general publications to examine the question found 6% of records to be less than full level. A mean of 30% of records for foreign monographs lack LCC; the only general study found 40% of records without LCC. In this latter case, records for foreign monographs proved somewhat better than those for general monographs. However, the ability to reach a decisive conclusion about the quality of bibliographic records is made more difficult by the lack of prior research on the quality of bibliographic records for general collections at the time of their receipt.

Are these comparisons fair? As we have stated, none of the samples examined here are random. Variations in sampling techniques, time periods and collecting policies could account for the variations in the reported hit rates. Of especial concern is the time frame of the studies. None of the statistics of general monographs conducted after 1985 come from full research reports—thus we cannot determine any possible biases in their sampling methodology because no methodology was reported. The most reliable statistics for general acquisition sets predate 1985, and all but one of the studies of foreign publications follow after 1990. The observed difference in hit rates between general samples and samples of foreign monographs may be explained by a general drop-off in bibliographic control that occurred between the period of study for the two groups of studies.

To address these concerns, we thought it was necessary to conduct a sample of

general monographs at a large academic library, using the same sampling methodology during the same time frame as the commissioned *LRTS* studies of foreign monographs. This study would give us a baseline to better evaluate the results of the studies of foreign monographs. Thus our methodology is the same as used in Sercan, Tsao, and Seymour, but applied to recent monographic acquisitions without regard to their national origin.

RESEARCH QUESTIONS

We needed to gather the same data in the baseline study as the earlier *LRTS* reports to get comparable results. That is, we needed to know the extent of bibliographic control over all of the current acquisitions for a medium- to large-size academic library so that we can better evaluate the results we have for current foreign acquisitions. We measured the bibliographic control over current acquisitions in three ways:

1. the extent of bibliographic control,
2. the quality of bibliographic control, and,
3. the timeliness of bibliographic control.

The extent of bibliographic control was determined by searching a monograph in a standard national bibliographic utility to see if a bibliographic record was present. We measured the quality of bibliographic control by examining those bibliographic records. We looked at:

1. the source of the record,
2. the record's level of description,
3. the presence of Library of Congress classification, and,
4. the presence of Library of Congress subject headings.

We measured timeliness by discovering what proportion of the acquisition set had bibliographic records available at the time of acquisition, and how that proportion grew in time.

As we stated before, the differences between studies of general monographic acquisitions and foreign monographic acquisitions may be explained by the shifting time frame of the studies (the studies of foreign publications came after the research studies of general monographs), by

the divergent collections and sampling methodologies, or by an actual difference in the extent of bibliographic control over the two populations. If the differences between the studies reflect an actual difference in bibliographic control (as the authors of the foreign studies generally claim), then we should expect the performance of our general study to be consistent with the scores of the previous general studies. Previous research did not provide clear evidence on differences on the level of bibliographic descriptions or records without LC classification information. Based on the results of previous studies of general monographic acquisitions, we hypothesize:

1. A hit rate of 67%–93% at the time of receipt, rising to a hit rate of 87%–96% four months to a year after receipt.
2. Approximately 75% of the records located come from the Library of Congress.
3. More than 73% of bibliographic records will be full level.
4. More than 70% of bibliographic records will have Library of Congress classification information.

METHODOLOGY

To test these hypotheses, during the first week of March 1993, we examined all new books, both approvals and firm orders, arriving in the Acquisitions Department of the University of Pennsylvania Van Pelt-Dietrich Library Center. The department processes monographs for all Penn Libraries except for the Law and BioMedical Libraries. This was a typical mid-semester week; book receipts were at a high level, but oddly, not a single book from Italy arrived that week. This fact makes the sample slightly atypical and might increase the success in locating a bibliographic record. Experience at Penn shows a noticeable lack of catalog copy for Italian books upon receipt.

Each of the 1,339 monographs received during the sampling period was numbered, and a random sample of 404 records was drawn. A sample of this size allows a 5% margin of error at a 95%

confidence level. The place and date of publication was recorded for each of the 404 monographs in the sample. Each monograph was searched from March 23–25, 1993, in OCLC to determine whether a bibliographic record was present. The search was conducted by a doctoral student in library and information science with six years of experience using OCLC. If a record was found, the source and level of the bibliographic record, and the presence of Library of Congress classification and subject heading information was recorded. Monographs without a bibliographic record during this period were searched again on July 5, 1994. The same data were gathered as before, along with the date the record was added to OCLC. Data were coded and SPSS for Windows 5.0.2 was used for analysis.

RESULTS

Table 5 has the distribution of the places of publication; 50.7% ± 4.9% of the population was published in the United States. Approximately 75% of the non-U.K. foreign publications came from Germany or France, with the remainder coming from countries on all continents. Table 6 has the distribution of dates of publication—the majority of the monographs were published in the two years prior to their receipt. Our analysis showed only a very small difference in age between foreign, British, and domestic American publications at the time of their receipt.

Our success in locating a bibliographic record for each item in the sample is indicated in table 7. At the time of acquisition, 92.2% ± 2.6% of the sample had corresponding records in OCLC; this grew to 98.5% ± 1.2% fifteen months later. Thus, our study showed a greater extent of bibliographic control than almost all of the previous studies of general publications (this study matched Allan), and we scored at the upper range of the estimate in hypothesis 1.

Table 7 also includes the source of the bibliographic record: either the Library of Congress, an OCLC member, or a national library other than the Library of Congress (most of the records from the

TABLE 5
COUNTRY OF PUBLICATION

	N	%	Margin of Error (%)
U.S.	205	50.7	± 4.9
U.K.	131	32.4	± 3.2
Other	68	16.8	± 1.6
Total	404		

Confidence level = 95%

TABLE 6
YEAR OF PUBLICATION

Value	N	%	Margin of Error (%)
1988 and earlier	18	4.5	± 0.4
1989	13	3.2	± 0.3
1990	17	4.2	± 0.4
1991	79	19.6	± 1.9
1992	227	56.3	± 5.5
1993	49	12.2	1.2
Total	403		

Confidence level = 95%

Missing cases = 1

last category came from the British Library or the National Library of Canada). We found that $74.9\% \pm 4.4\%$ of the records were created by LC; over a year later it was $72.1\% \pm 4.4\%$. Thus, these proportions did not change substantially over time. However, once a record was located for a monograph, it was not searched again. That is, we did not note when an LC-created record replaced a member-created record. We hypothesized that 75% of the records would originate with LC, and this falls within the range revealed by our study.

The level of the bibliographic records is given in table 8. The large majority of the records ($83.6\% \pm 3.8\%$ and $84.4\% \pm 3.6\%$) were full level. Most of the records that were not full level were cataloging-in-publication records from LC. These records generally included Library of Congress classification and subject heading

TABLE 7
SOURCE OF BIBLIOGRAPHIC RECORD FOR SAMPLE

	Search Conducted	
	March 1993	July 1994
Source of record:		
LC	69.1 ± 6.7	71.0 ± 6.9
Member	18.6 ± 1.8	22.8 ± 2.2
Other national	4.5 ± 0.4	4.7 ± 0.5
Total	92.2 ± 2.6	98.5 ± 1.2
% of records from LC	74.9 ± 4.4	72.1 ± 4.4

Confidence level = 95%

TABLE 8
LEVEL OF BIBLIOGRAPHIC DESCRIPTION

	Search Conducted	
	March 1993 N = 372	July 1994 N = 397
Less than full-level	16.4 ± 3.8	15.6 ± 3.6
Full-level	83.6 ± 3.8	84.4 ± 3.6

Confidence level = 95%

information. We hypothesized that at least 73% of the records would be full level, thus our hypothesis is confirmed.

The very large majority ($90.6\% \pm 3.0\%$ and $90.7\% \pm 2.9\%$) of the bibliographic records had LC classification information (see table 9). We had hypothesized that at least 70% of the records would have LC classification. Thus, our hypothesis is confirmed. We had similar results with Library of Congress subject headings (see table 10). We did not make an hypothesis on the proportion of records with LC subject headings.

DISCUSSION

Taken as a whole, our hypotheses were intended to measure the extent and quality of bibliographic control over a set of general monographs at a research library. Furthermore, the same research methodology was used as in the recent series of

TABLE 9
PRESENCE OF LIBRARY
OF CONGRESS CLASSIFICATION

	Search Conducted	
	March 1993 N = 372	July 1994 N = 397
Records missing LCC	9.4 ± 3.0	9.3 ± 2.9
Records with LCC	90.6 ± 3.0	90.7 ± 2.9

Confidence level = 95%

TABLE 10
PRESENCE OF LIBRARY OF CONGRESS
SUBJECT HEADINGS

	Search Conducted	
	March 1993(%) N = 371	July 1994 (%) N = 403
Records missing LCSH	10.2 ± 3.1	12.7 ± 3.3
Records with LCSH	89.8 ± 3.1	87.3 ± 3.3

Confidence level = 95%

investigations on the extent of bibliographic control over foreign published monographs. An analysis of prior research supported the general claim that bibliographic control over foreign research materials was not as extensive as the bibliographic control over domestic research publications: bibliographic records were available for a greater proportion of general monographs than for foreign monographs. Furthermore, these records appeared sooner than they did for foreign monographs. There is some evidence that the quality of the bibliographic records for general research monographs is higher than for foreign monographs: a greater proportion of bibliographic records for general monographs are created by the Library of Congress, one partial measure of quality. More explicit measures of a bibliographic record's quality is whether subject access data such as Library of Congress classification or subject headings are present. Previous research did

not clearly establish a link between the country of publication for a monograph and the presence of this specific type of data in a bibliographic record.

The differences between the levels of bibliographic control over research monographs without regard to country of publication and research monographs from foreign countries shown in previous studies could be the result of varying methodologies, or could be the result of actual differences between these two populations. The results of this baseline study of an acquisition set of research monographs lends support to the theory that there is less extensive bibliographic control over foreign monographs. Our study showed a higher level of bibliographic control for general monographs than revealed in previous studies.

This study also shows that bibliographic records are more likely to come from LC for general monographs as well, as our baseline study was in the same range of values as earlier studies for general research monographs. There was a lack of substantial evidence from prior research on the level of bibliographic description for general monographs. However, prior research on foreign monographs showed that approximately one quarter of their bibliographic records were less than full level; we found that approximately 15% of bibliographic records for general monographs were less than full level. Evidence on the lack of LC classification for both sets of monographs from prior research is not abundant, and the scores that are available are dispersed over a wide range. Approximately 10% of the records from our baseline study were missing LC classification. It appeared that this might be slightly better than the records for foreign publications even though the 10% is not quite consistent with the one piece of evidence from prior research on general monographs.

Generally, the results from this baseline study fall into two categories. First, when previous research indicated a difference between general and foreign monographs, this baseline study of general monographs performed as well or better than other studies of general monographs.

TABLE 11

SOURCE OF CATALOGING
BY PLACE OF PUBLICATION

Source	U.S. (%)	Great Britain (%)	Other Foreign (%)
LC	91.2	61.8	38.2
Member	7.3	22.1	34.4
Other national library	0.5	14.7	5.3
Total	99.0	98.6	77.9

Pearson Chi-square = 138.2, degrees of freedom = 6, significance = 0.0, phi = 0.58, contingency coefficient = .50

TABLE 12

LEVEL OF BIBLIOGRAPHIC
DESCRIPTION BY PLACE OF PUBLICATION

	U.S. (%)	Great Britain (%)	Other Foreign (%)
Full-level	84.2	77.6	86.3
Less than full-level	15.8	22.4	13.7

Pearson Chi-Square = 2.3, degrees of freedom = 2, significance = 0.31

In previous studies, better bibliographic control of general monographs than foreign monographs was demonstrated. Secondly, when previous research did not show a difference between general and foreign monographs, we established that there is better bibliographic control over general monographs than the foreign monographs. However, the degree of difference of general over foreign monographs in this latter category, while measurable, was not as substantial as the differences already discovered in the first category.

Our own baseline sample provides further evidence on differing extents of bibliographic control for foreign and domestic monographs. A cross-tabulation of monographs by place of publication and the source of cataloging copy at the time of receipt is given in table 11. Almost all the domestic and British books had been cataloged on OCLC at the time of receipt,

TABLE 13

PRESENCE OF LIBRARY OF CONGRESS
CLASSIFICATION BY PLACE OF
PUBLICATION

	U.S. (%)	Great Britain (%)	Other Foreign (%)
Records missing LCC	2.0	19.4	23.1
Records with LCC	98.0	80.6	76.9

Pearson Chi-Square = 37.9, degrees of freedom = 2, significance = 0.0, Phi = 0.32, contingency coefficient = .30

TABLE 14

PRESENCE OF LIBRARY OF CONGRESS
SUBJECT HEADINGS BY PLACE OF
PUBLICATION

	U.S. (%)	Great Britain (%)	Other Foreign (%)
Records missing LCSH	7.9	14.9	11.8
Records with LCSH	92.1	85.1	88.2

Pearson Chi-Square = 3.0, degrees of freedom = 2, significance = 0.22

and most were cataloged by LC. Chi-square reveals that these values are statistically significant. The phi and contingency coefficient values (both are chi-square based measures of association) are very high and show that if we know a monograph's place of publication, we have a good chance of predicting whether it is cataloged, and who cataloged it.

We did not uncover a statistically significant (at the 95% level) difference by level of description between foreign and domestic monographs (see table 12). Nearly all domestic monographs had LC classification data, while nearly a quarter of foreign monographs lacked this information (see table 13). The results of this table are statistically significant, though the phi and contingency coefficient values are not as high as for the source of cata-

logging copy. There is no statistically significant difference between subpopulations for the presence of LC subject headings (see table 14).

Thus, our own sample reveals some differences in the level of bibliographic control between foreign and domestic monographs. We found a significant difference in the extent of coverage in OCLC for foreign and domestic monographs. We found differences in some measures of cataloging quality (such as origin of the catalog record and the presence of LC classification), but not in others (such as the level of the bibliographic description or the presence of LC subject headings). These chi-squares, when they are statistically significant, support differences established by previous research and confirmed by our hypothesis testing. Finally, the statistically significant chi-squares also provide measures of association between place of publication and the extent and quality of bibliographic control, something that was not revealed in earlier studies.

CONCLUSION

With this study we established that there are significant differences in the bibliographic control of foreign and domestic monographs. A review of prior research showed that bibliographic records existed for a greater proportion of domestic research monographs than for foreign research monographs. Prior research also showed some evidence that bibliographic records for domestic publications are better than the bibliographic records for foreign publications. For example, a review of previous research suggested that bibliographic records for domestic publications were more likely to come from the Library of Congress than other sources. Previous research on foreign monographs also suggested that bibliographic records for these materials are less likely to be full-level descriptions, or lack LC classification information; however, this general finding was difficult to establish from a review of previous research because of the lack of data regarding general monograph collections.

Because of this lack of evidence, and the possibility that differences could be a result of shifting time frames and research methodologies, we conducted a baseline study that used the same methodology as the series of research notes on the bibliographic control of foreign monographs that appeared in *LRTS* in 1994. This baseline study took the form of explicitly testing several hypotheses drawn from previous research. The results of this baseline study confirmed that the differences in treatment of foreign and domestic monographs is real, and might be even greater than suggested by previous research. Of special concern is the lack of any control over a significant proportion of foreign research monographs. The quality of these bibliographic records for these materials is also lower than the records created for domestic monographs, but the differences in quality were not as large as the differences in extent of coverage.

Finally, our sample also allowed us to look at differences in bibliographic control that existed with the monographs received at the University of Pennsylvania in March 1993. These differences in bibliographic control were measured in a series of cross-tabulations and chi-square statistics. Although not as conclusive as the explicit hypothesis testing, these chi-squares revealed a significant difference in the extent of bibliographic control, and some differences in the quality of that control. Finally, these cross-tabulations also provided explicit measures of association between place of publication and source of cataloging copy, as well as an association between place of publication and the presence of Library of Congress classification information.

The differences confirmed and revealed by this study are distressing. Foreign monographs are an important scholarly resource. The task for American libraries is to acquire all foreign published materials of interest and to place them at the disposal of American researchers. Knowledge of the material's existence and availability to researchers is achieved in part by cataloging the material and placing the catalog record in a national

bibliographic utility, such as RLIN or OCLC, and making the item available through interlibrary loan. American libraries are failing to provide complete access to foreign-published research materials.

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Ownership versus Access and Low-Use Periodical Titles

Eleanor A. Gossen and Suzanne Irving

The question of the cost-effectiveness of ownership versus access to serials is explored using data collected during a local periodicals use study and data from the Association of Research Libraries/Research Libraries Group Cost Study. Analysis revealed that if a periodical is used fewer than five times per year in a given library, it is generally more cost-effective to rely on access, even if the subscription cost is modest. If total in-house use is ten times per year or more, the cost-effectiveness of relying on access rather than ownership is distributed unevenly across subject disciplines. An examination of the availability of the group of low-use titles through interlibrary loan and commercial document delivery indicates general availability at the present time. The impact of periodical cancellations on users' needs is also discussed.

W ithin the past decade in academic libraries, economic realities have caused a paradigm shift away from an emphasis on acquiring comprehensive research collections to an emphasis on developing effective methods for maintaining access through interlibrary loan and commercial document delivery to research materials that are infrequently used in a particular institution. The University at Albany of the State University of New York (SUNY), faced with fiscal realities, recently considered cancelling 609 periodical titles identified in a use study as low-use titles. The authors debated whether cancellation of low-use titles without regard to their subscription cost would really be cost-effective, and we had questions about whether the subject area of the journal should affect cancellation or retention decisions. We hypothesized that if a journal cost less than approximately \$100 per year, it

would not be cost-effective to cancel it, whatever the use. We also hypothesized that many of our low-use titles, particularly foreign-language titles (which made up about 40% of the low-use titles), would be difficult to access via either document delivery or traditional interlibrary loan.

The fact that data had been gathered for a local use study within approximately the same time frame (1991-92) in which the information for an interlibrary loan cost study sponsored by the Association of Research Libraries (ARL) and the Research Libraries Group (RLG) had been gathered offered us the opportunity to juxtapose use and cost data to explore these issues, as proposed by Eveline Yang. Yang (1992, 37) proposes that "we could compare the cost of the external and internal fulfillment methods by using these factors: the cost of subscription; the cost for document delivery; and the user's

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needs, or the frequency of use. . . . Libraries need to ask, 'Is it more costly to provide the information at time of need, or is it more fiscally sound to subscribe to the journal in anticipation of its frequent use?'"

The ARL/RLG Interlibrary Loan Cost Study (Roche 1993) has become a focal point for the discussion of the actual costs of interlibrary loan and its relevance to collection development decisions. The study's findings sparked a reactive article in the *Chronicle of Higher Education* titled "Colleges Rethink the Effectiveness of Interlibrary Loans in Cutting Expenses" (Nicklin 1993). The author discusses whether interlibrary loan is truly a cost-effective alternative in the context of the ARL/RLG Cost Study findings. Malcolm Getz, associate provost of Information Services and Technology at Vanderbilt University, states that "there is a tipping point between when you ought to buy and when you ought to borrow." Academic libraries are trying to determine this tipping point (Nicklin 1993).

Using the local use study data and the ARL/RLG Interlibrary Loan Cost Study Data, the authors of this article compared the relative cost of subscriptions and the cost of alternative access to low-use titles. The practical consideration of availability of these titles through interlibrary loan and commercial document delivery was examined. Faculty needs for quick turnaround time were taken into consideration.

To provide a framework for our current examinations, it is important to describe the setting and the methodology of the use study and the ARL/RLG Interlibrary Loan Cost Study on which we based our findings.

BACKGROUND

In 1992, the University at Albany had roughly 10,500 undergraduate students, 3,500 graduate students, and 650 faculty members in 45 departments. It supports undergraduate programs in the liberal arts, education, and business; graduate programs on both the masters and doctoral level; and diverse faculty research. The libraries currently hold approximately 1,355,000 volumes and subscribe

to approximately 5,000 current periodicals. As has been the case with most research libraries, the fact that periodical prices have been rising at a much faster rate than the budget for library acquisitions has prompted several rounds of cancellations since the early 1980s and a near freeze on ordering new titles since 1986.

CLR GRANT

In 1991, the libraries of the four State University of New York University Centers (Albany, Binghamton, Buffalo, and Stony Brook) were awarded a grant from the Council on Library Resources (CLR) as part of a joint project to generate policies and plans for cooperative collection development and resource sharing among the four libraries. Several concurrent studies were carried out by the University Center libraries, one of which was a journal use study, in which the use of both bound and unbound periodicals at each of the four campuses was analyzed. The CLR grant use study pulled together a wealth of data on the use of the periodical collections on each of the University Center campuses.

USE STUDY METHODOLOGY

The use study tracked use of both bound and unbound volumes of all periodicals for a one-year period from September 1991 through August 1992. It was felt that use needed to be tracked for a minimum of one year in order to get significant statistics, particularly for low-use titles (Franklin 1989). Use of bound periodicals was recorded as part of the shelving process, with every reshelving being defined as one use. Use of unbound periodicals was recorded on labels affixed to the front cover of all issues (see Herzog 1993 for a discussion of the methodology of the use study). All titles that received a total of five or fewer uses during the study period were defined as low-use titles and were considered to be candidates for cancellation. This definition of low-use titles was chosen for the CLR grant use study because it coincides with copyright restric-

tions, which permit up to five interlibrary loan requests for articles from the last five years of a given periodical title before copyright fees, which may be substantial, must be paid.

ACCURACY OF USE STUDIES

There has been considerable discussion in the literature about use studies. As one peruses the literature, it becomes clear that most libraries have a core collection of works that are heavily used and a peripheral collection of less heavily used materials. (See, for example, Trueswell 1969 and Broadus 1985.) This research led us to believe that the university libraries would have a core of heavily used periodicals and also a substantial number of infrequently used titles that might be cancelled to achieve considerable cost savings with relatively minor impact on users.

The accuracy of use studies carried out in open stack libraries has been questioned. After comparing two methodologies for recording use statistics, Naylor (1993, 62) concluded that patrons are not as diligent as paid shelvers in recording use of library periodicals. Her results showed 43% lower use when recorded by patrons than by shelvers. Milne and Tiffany (1991, 8) refer to studies that show that patrons often reshelve periodicals themselves when they refer to them only briefly—even when specifically requested not to—and that these brief uses might account for as much as three-quarters of the total use of serials. It is clear that most use studies probably underestimate the actual use of periodicals, but given that more than 155,000 uses were recorded at the university libraries during the study and that use of individual titles ranged from zero to more than six hundred, we believe that our statistics do reflect relative use and that titles that showed very little use were legitimate targets for evaluation as candidates for cancellation.

ARL/RLG COST STUDY

The ARL/RLG studied 1991 borrowing and lending operations costs at seventy-six

research libraries in the United States and Canada. The survey instrument measured the costs directly involved in interlibrary loan operation, factoring in staff, networking charges, photocopying fees, delivery charges, and suppliers. This study found that in 1991 research libraries spent an average of \$18.62 to borrow a research document (article) and \$10.93 to lend a research document to another academic institution (Roche 1993, iv). It could be argued that the average total cost to the library community (as opposed to an individual library) of a single request transaction for a document is \$29.55 because one library requests (borrows) the article and another library supplies (lends) the article. However, for the purposes of this study, we used the \$18.62 borrowing transaction figure as this would be the cost of a borrowing request used to make “buy versus borrow” management decisions in an individual library.

The years since the ARL/RLG Cost Study have seen increased use of electronic document transmission in interlibrary loan units, with associated labor and equipment costs, and more routine use of document delivery, which undoubtedly have affected the cost of interlibrary loan transactions. In addition the Research Libraries Group continues to expand the survey instrument and to test interlibrary loan versus commercial document delivery with a comparison of relative costs. In this article, the authors examined the relative cost of access compare with ownership during the 1991–92 academic year, the time period during which our data were collected.

ANALYSIS

Our first consideration was to derive the cost per use of the low-use periodical titles that were identified by the CLR grant use study, based on subscription price. We then compared these figures with the access cost for these titles, derived using the \$18.62 ARL/RLG Cost Study figure of the average cost per interlibrary loan borrowing transaction.

COSTS OF KEEPING LOW-USE TITLES

Analysis of the data from the periodicals use study showed that the average cost per use of all periodical titles in the University at Albany's collection was \$8.20, whereas the average cost per use of low-use titles was \$93.46. The difference in average cost per use of titles with low recorded use (fewer than five uses during the study period) versus the average cost per use of all titles in the collection is shown in table 1.

In this table, as in all subsequent tables, the category "other" reflects local fund allocation practice and includes the library's general interest and law collections. It is readily apparent that maintenance of low-use titles is an expensive proposition, the average cost per use of the low-use titles being almost twelve times as much as the average cost per use of all periodical titles in the collection. This was true regardless of discipline.

It is interesting to note that high cost per use does not necessarily correlate with high subscription cost. In fact, as shown in table 2, our low-use titles had a lower average subscription cost than the collection in general. This was true across the disciplines. This leads us to believe that high subscription cost per se should not be reason to cancel a title. Rather the relationship of cost to use should be considered when making cancellation decisions.

A caveat in looking at this cost per use data is that it has been calculated using the subscription price alone. The cost of retention of these journals is actually higher if acquisition check-in and local binding and shelving costs are taken into account. Goehlert (1979) discussed the various costs associated with maintaining a periodical subscription over and above the subscription cost itself. These include ordering, receiving, accounting, processing, binding, and storage. He found that the general processing cost was around \$0.50 per issue and the binding cost was around \$7.25 per bound volume.

An informal study was conducted in 1993 in the University at Albany's Acquisitions Department to determine whether Goehlert's check-in cost was still valid (Miller and VanAvery 1993). It was determined that the cost of checking in one issue of a periodical by a clerical staff member is approximately \$.41, if the transaction is a simple one. Estimates were also collected of local binding charges. The conclusion was that charges, including binding fees and labor, are about \$8.75 per bound volume. It is, however, difficult to arrive at an average cost for check-in, binding, and shelving, because these costs vary from title to title, depending upon frequency of publication and binding frequency. Thus, additional charges per title could vary from as low as \$8.75 per year for a title that is bound only

TABLE 1
AVERAGE COST/USE OF LOW-USE TITLES
COMPARED TO AVERAGE COST/USE OF ALL TITLES

	No. of Low-Use Titles	Sub. Cost (\$)	Use	Avg. Cost/Use Low-Use Titles(\$)	Avg. Cost/Use All Titles (\$)
Humanities	175	10,234	343	29.84	6.00
Social sciences	129	9,456	287	31.95	3.26
Science and math	229	103,758	522	198.77	35.52
Education	17	875	24	36.46	0.75
Business	7	1,093	26	42.04	3.57
Other	52	2,685	174	103.27	5.20
Total	609	128,601	1,376	93.46	8.20

TABLE 2
AVERAGE SUBSCRIPTION COST
OF ALL PERIODICALS COMPARED
TO AVERAGE SUBSCRIPTION COST
OF LOW-USE PERIODICALS

	Avg. Sub. Cost of All Titles (\$)	Avg. Sub. Cost of Low-Use Titles (\$)
Humanities	72	67
Social sciences	108	64
Science and math	631	397
Education	76	53
Business	150	106
Other	146	46
Total	249	207

once a year to as much as \$52.50 or more for a title that is bound six times a year. This could significantly raise the cost per use of low-use, frequently bound titles. Our figures, therefore, are on the conservative side; true cost per use is probably higher.

COSTS (AND SAVINGS) INVOLVED IN
ACQUIRING LOW-USE PERIODICALS
THROUGH ILL OR DOCUMENT
DELIVERY

The cost of ownership of low-use titles is compared to the cost of borrowing them

in table 3, based on the ARL/RLG estimate that the median unit cost for a library to borrow an item is \$18.62. The table indicates a potential for substantial savings by supplying articles from low-use titles via interlibrary loan or document delivery. In calculating these figures, we have made the assumption that a recorded use is the equivalent of a request for a single article. We realize that in many instances this might not be entirely accurate: a patron might well read two or three articles from a volume or issue taken from the shelf or, conversely, consult a volume without finding anything of interest. Given that this information was not recorded by the use study, we have made the simplest reasonable assumption.

In most cases, considerable savings could be achieved by relying on interlibrary loan or document delivery for low-use titles. However, because borrowing costs seem to vary considerably among institutions, depending upon local salaries and staffing practices among other things, local costs need to be taken into account when making buy-versus-borrow decisions. The actual savings for libraries with low interlibrary loan costs would be greater than the savings calculated using the ARL/RLG average cost estimate. By the same token, the actual savings for libraries with unusually high interlibrary loan costs would be lower than the ARL/RLG figures.

However, even if one assumes that use studies considerably underestimate actual

TABLE 3
SUBSCRIPTION COST OF LOW-USE TITLES
COMPARED TO NATIONAL AVERAGE COST TO BORROW

	Sub. Cost (\$)	Use	To Bor. @ \$18.62	Savings (\$)	% Savings
Humanities	10,234	343	6,387	4,347	40
Social sciences	9,456	287	5,166	4,290	45
Science and math	103,758	522	9,720	94,038	91
Education	875	24	447	428	49
Business	1,093	26	484	609	56
Other	2,685	174	3,240	-555	-21
Total	128,601	1,376	25,622	102,979	80

TABLE 4
SAVINGS IF USE WERE DOUBLED

	Sub. Cost (\$)	2X Use	To Bor. @\$18.62	Savings (\$)
Humanities	10,734	686	12,773	-2,039
Social sciences	9,456	574	10,688	-1,232
Science and math	103,758	1,044	19,502	84,256
Education	875	48	897	-22
Business	1,093	52	968	125
Other	2,685	348	6,480	-3,795
Total	128,601	2,752	51,242	77,293

use, as Naylor and Milne and Tiffany have suggested, savings might still be generated by cancelling some low-use titles. The savings that would be achieved by shifting from ownership to access are shown in table 4. This savings is realized even if we assume that actual use has been underestimated by 100%, a figure considerably larger than critics of use studies have suggested might be the case.

In this scenario, savings would still be considerable, although they would be distributed unequally across the disciplines. At an average cost of \$18.62 to borrow, use of low-use science titles would have to amount to 5,572 uses, more than ten times our recorded use, before they reached the cost of subscribing. In the humanities, social sciences, and education, due to their lower average subscription cost, it would have cost more to rely on interlibrary loan and document delivery than to subscribe to the journals. However, high-cost, low-use titles in any discipline should be evaluated for cost-effectiveness.

AVAILABILITY THROUGH DOCUMENT DELIVERY AND ILL

One remaining question concerning the low-use titles was whether interlibrary loan or document delivery could offer quick access to them. All low-use titles were checked for availability on CARL, The Genuine Article, Faxon, and UMI. Checking was done during the summer of 1993 against lists provided by the services. Because all of these services are continually expanding the number of titles they

cover, more titles are undoubtedly available via document delivery now than there were at the time of the study. The distribution of low-use titles by discipline and the percentage of titles available from at least one document delivery service are shown in table 5.

A comparison of tables 3 and 5 indicates that the subject area in which there would be the greatest savings from relying on access over ownership, science and math, was the area most readily available through commercial document delivery. The area that would be second in line for significant savings, the humanities, also had a significant number of titles available.

All titles that were not available through a commercial document delivery service were then checked on the OCLC Online Computer Library Center, Inc.'s database to see whether current subscriptions were held by a New York State library. We used New York State libraries because they will usually lend to us free of charge with a reasonably fast turnaround time. Somewhat to our surprise, all low-use titles were available either via commercial document delivery or via interlibrary loan from at least one other library in New York State, leading us to believe that it would in fact be feasible to offer access to these titles rather than owning them at the present time. Actual protocol decisions about whether to use traditional interlibrary loan or commercial document delivery would have to be made on an institutional basis.

It is important to remember that while we focused on low-use periodicals, they

TABLE 5
LOW-USE TITLES BY DISCIPLINE AND
AVAILABILITY VIA AT LEAST ONE
DOCUMENT DELIVERY SERVICE

	No. of Titles	No. Avail.	% Avail.
Humanities	175	109	(62)
Social sciences	129	73	(57)
Science and math	229	211	(92)
Education	17	14	(82)
Business	7	3	(43)
Other	52	50	(92)
Total	609	460	(76)

represent only about 12% of our collection. The remaining 88% are used more heavily, with some titles showing up to 600 uses during the study period. To gain a perspective on this situation, we calculated what it would cost to "outsource" all our requests for articles. If we had relied on interlibrary loan or document delivery for all our periodicals in 1992, it would have cost \$2,900,456 to provide the same access at the ARL/RLG average borrowing cost that was provided by \$1,273,531 in annual subscription costs. Clearly, outsourcing all periodical requests will not be an acceptable solution to the "periodical problem," particularly if one ponders the logistics of processing more than 155,000 interlibrary loan requests a year, not to mention dealing with copyright issues and the hardship having to wait for their information would impose on patrons.

PATRON NEEDS

The previous tables demonstrate that there is a potential for considerable savings by providing access to low-use titles, and that a combination of commercial document delivery and interlibrary loan could be a viable alternative to ownership in many cases. A remaining and not insignificant issue is how the cancellation of low-use titles would affect users' needs.

A faculty needs assessment project carried out as part of the CLR grant reported that many faculty members feel that it is important to be able to browse through the latest issues of a number of periodicals to remain current in their subject disciplines (SUNY University Center Libraries 1993). The University Libraries have tried to address this concern about cancellations by providing both in-library and remote access to OCLC's FirstSearch and the Institute for Scientific Information's Current Contents services, both of which allow searching of current journals either by journal name or by keywords.

RELATIVE USE BY DISCIPLINE

Common knowledge would have it that the sciences depend more heavily on periodical literature than do other disciplines. This argument has been used over the years to justify maintaining large collections of scientific periodicals in spite of high prices and a high inflation rate. The statistics collected during our use study have caused us to question this assumption, at least for the University at Albany. The percentage of use of the entire periodical collection by discipline is compared with the percentage of our user population by discipline in table 6. We have defined "user population" for the purposes of this study as the total full-time equivalent number of graduate and undergraduate students plus the full-time equivalent number of faculty in each discipline. Faculty with interdisciplinary or joint appointments were counted in the discipline of their primary appointment.

According to our data (table 6), our science periodicals are not particularly heavily used relative to the size of our user population. The humanities periodicals were used the least relative to the size of the user population (7% of use versus 22% of the population). This was more or less expected; common wisdom holds that humanists depend heavily on the monographic literature. The most enthusiastic users of periodicals seem to be those in education (24% of use versus 8% of the population). In other areas, including the sciences, there seems to be a reasonable

TABLE 6
PERCENTAGE OF USE BY DISCIPLINE VS.
PERCENTAGE OF USER POPULATION AT
THE UNIVERSITY AT ALBANY

	Avg. FTEs 1991-92	% Population	% Use
Humanities	3,104	22	7
Social sciences	6,230	43	38
Science and math	2,501	17	16
Education	1,110	8	24
Business	1,476	10	9
Other	—*	—*	6
Total	14,421	100	100

*Since the University at Albany does not have a law school, use of the reference and law collections is distributed across the other disciplines.

TABLE 7
PERCENTAGE OF ALL TITLES VS.
PERCENTAGE OF LOW-USE TITLES

	No. Titles	% All Titles	% Low-Use Titles
Humanities	903	18	28
Social sciences	1,786	35	21
Science and math	1,403	27	38
Education	361	7	1
Business	314	6	3
Other	355	7	9
Total	5,122	100	100

balance between percentage of use and percentage of user population. Although common wisdom holds that periodical literature is particularly important to scientists, it would be difficult to argue from this data that members of the local scientific community are heavier users of our periodical collection than those of the so-

cial science, education, or business communities. It is also interesting to note that while 27% of our current periodical subscriptions are scientific publications, these constitute 38% of the low-use titles (see table 7). From this evidence, there seems to be little reason to protect low-use titles in any particular discipline because they are more important to that discipline than to others.

DELIVERY TIME

The faculty needs assessment project also reported that 50% of the faculty respondents indicated that a delivery time of three to seven days for delivery of periodical articles would be acceptable (SUNY 1993). Because traditional interlibrary loan is slow (taking an average of two weeks locally), other options have been explored that would provide materials more quickly. Several commercial vendors regularly used at the University at Albany reliably deliver articles well within the three-to-seven-day time frame indicated in the faculty survey. However, as we have stated previously, the ARL/RLG Cost Study figures do not completely incorporate costs of commercial document delivery. Further study needs to be conducted to determine to what degree regular use of commercial document delivery will affect interlibrary loan costs and how it will affect the "tipping point" at which it becomes more economical to own a journal than to acquire articles through interlibrary loan or document delivery services.

Other options are being explored locally for priority service resource sharing agreements. An example is the SUNY Express Service, which began operation in October of 1993. This service allows the catalogs of each of the SUNY University Centers to be searched via NOTIS/PaLink or the Internet to determine if a desired title is held by one of the centers. If it is, and it is not in circulation, the user submits a request to the Interlibrary Loan Department, which then sends it electronically to the appropriate University Center. Document delivery is via electronic (Ariel) transmission. Preliminary

findings indicate that documents are typically delivered within the three-to-seven-day time frame desired by faculty. The costs of labor involved in the project need further study to determine their relevance to the ARL/RLG Cost Study figures. Because there are a variety of priority service resource sharing projects in place in academic libraries, these services call for ongoing study of the cost of resource sharing options.

CONCLUSION

The assessment of the CLR grant low-use journal study information juxtaposed with the ARL/RLG Interlibrary Loan Cost Study estimates led us to conclude that considerable savings can be generated by offering access to low-use journal titles rather than owning them. Our low-use journals are, at the present time, generally readily available through document delivery and interlibrary loan.

At the beginning of this study we had two hypotheses that proved to be erroneous. The first was that reliance on access over ownership for low-cost titles, even if they were also low-use, would not necessarily be cost-effective. Analysis of our data showed that this was not the case if low-use titles were defined as those that have been used five or fewer times during the study period, even in disciplines where the average subscription cost of periodicals was under the \$100 of our original hypothesis. The case for cancellation of low-use titles would be even stronger if the cost of processing and binding were factored into the cost of ownership. The situation changed, however, when we doubled the use of these titles (i.e., to ten or fewer uses). In that case, in all disciplines other than science and business, which had relatively high average subscription costs, it would have been more cost-effective to own the titles than to rely on interlibrary loan or document delivery to provide access to them.

Another mistaken assumption was that many of the low-use titles, particularly those in foreign languages, would not be readily available either through tradi-

tional interlibrary loan or document delivery services. This proved not to be the case with the low-use titles under review. All of these titles were available either from document delivery services or from at least one library in New York State, including those in foreign languages. At least at the present time, availability does not seem to be a concern, although this could change if library cancellations continue at the present rate or accelerate.

We have attempted to provide a snapshot of cost factors, availability issues, and patron-use factors affecting buy-versus-borrow decisions based on data collected during the 1991-92 academic year. Although certain patterns emerge from our analysis, the situation remains a complex one. Local interlibrary loan costs that are dramatically either higher or lower than the ARL/RLG Cost Study average will affect the cost-effectiveness of buy-versus-borrow decisions. In addition, based on the widespread trend in academic libraries to charge out-of-state libraries for interlibrary loan transactions, it is assumed that a library in a state with a large number of educational institutions and a large statewide interlibrary loan network is more likely not to be billed for interlibrary loan borrowing transactions than a library in a state with a smaller interlibrary loan network.

Many questions remain to be answered that are beyond the scope of this paper. If the current trend towards cancellation of low-use, high-cost periodicals continues, will this not lead to greater reliance on commercial document delivery? Will commercial vendors continue to merge, thus driving up the costs of commercial document delivery? Does a library have a responsibility to retain the last copy in the region of a low-use title? Further study of these and many other issues related to resource sharing and access to information is needed.

This project encouraged us to think that the relationship between the periodicals collection, interlibrary loan, and collection development should be more fluid and dynamic than it has been in the past. There should be ongoing monitoring

of the cost of interlibrary loan and document delivery because the situation is in a state of flux. As more libraries move from ownership to access, cost savings achieved by periodical cancellations might diminish. Subscription prices and periodical use should be closely watched. Studies should be conducted every few years to determine changes in usage patterns. Titles with little or no use should be cancelled to make room for new titles that might be needed to reflect new research interests or changes in curriculum. Interlibrary loan departments should alert collection development departments to titles that are frequently requested. Collection development should rid itself of the notion that cancelling low-use periodicals is somehow tragic and irrevocable. Our experience with past cancellation projects has indicated that we get few interlibrary loan requests for judiciously cancelled titles. If mistakes are made, one finds out about it soon enough and the subscriptions can be reinstated. If libraries persist in retaining little-used titles simply because it is unpleasant to cancel anything, collections will stagnate, shrink, and become unresponsive to the current needs of faculty and students.

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Serials Citations and Holdings Correlation

John C. Calhoun

A survey reveals both advocates and opponents of citation analysis use in the management of academic journal collections, both a theoretical time parameter and a practical proportional extent that need to be established for journal literature, and several instances of comparativist methodology that seek to enhance citation analysis use with journals. A relational database file is compiled from three well-known abstracting and indexing services to model an academic journal collection and examine the use, need, and methodology that the survey has revealed. The record structure of the file is described, and then the file is indexed by the domains of the abstracting and indexing services in an attempt to develop a technique of interchangeability between the percentile expression of subject category rank in the domains and the percentile expression of union holdings rank in the file. Alternatives that involve service-domain cocitations and a fourth domain of most-borrowed titles are discussed briefly; and then the file, now including the fourth domain of most-borrowed titles, is indexed by publisher so that the subject category rank for each serial publication can be averaged to establish a principle of uniformity that is a necessary precondition for the technique. The study concludes with several examples based on the cumulative advantage process and the 70/30 Rule associated with the core of the model.

The professional literature of bibliometrics contains both articles of advocacy and articles of opposition. Representative articles of advocacy include letters that explain the inclusion of review serials in the Institute for Scientific Information's (ISI) *Journal Citation Reports* (Cawkell 1977), studies that indicate citations are a reliable predictor of journal usage in libraries (Pan 1978, 33), papers that describe the increasingly central role played by citation indexes in both academic evaluation and library collection development (Bensman 1985), and analyses of interdisciplinary fields that find citations a mean-

ingful evaluation tool for bibliographers and collection managers (Mack 1990).

Robert N. Broadus—whose work has included an investigation into the validity of the Pittsburgh Study on the use of serial titles in libraries (Broadus 1983), a proposed method employing low citation counts as found in *Journal Citation Reports* for eliminating titles from periodical subscription lists (Broadus 1985), and a short history of the lines of research leading up to and forming what was until 1969 called "statistical bibliography" (Broadus 1987)—has been one of the leading advocates of the application of citation analysis

to use studies of periodicals, particularly in the arts and humanities, where the absence of a *Journal Citation Reports* associated with the *Arts & Humanities Citation Index* has made obtaining data for the comparison a problem. Nevertheless, he concludes, "there is enough of a harmony to justify taking into account citations (along with many other factors) in making decisions about collection development and management" (Broadus 1989, 128).

Representative articles of opposition include papers that argue citation-based rankings of journals are flawed because they do not account for variations in article length or size of readership (Archibald and Finifter 1987), studies that suggest ranked lists produced by citation counting when compared with ranked lists from use data do not constitute valid guides for journal selection by libraries (Scales 1976), presentations that recommend the most reliable data for the acquisition and cancellation of journals is not citedness but usage as it relates to price (Scanlan 1988, 65), and projects that conclude deselection cannot be replicated from use and citation studies "lacking in controls, lacking in substantiation, and largely empowered by intuition" (Segal 1986, 39). Maurice B. Line—whose work has included complaints on the impracticality of most citation and library use studies caused by inadequate data collection and analysis (Line and Sandison 1975), arguments that references in monographs and non-core journals represent completely different kinds of use from core journal references (Line 1978, 283), and conclusions that citation analyses based on a limited number and type of sources must be regarded with suspicion (Line 1979)—has been one of the most notable opponents of the methodology, giving as his chief reason the considerable changes over time of rank lists of serials requested for loan from the British Library Lending Division in comparison to rankings from the *Journal Citation Reports*. He suggests, "it might be dangerous to rely unduly on a rank list relating to one year" (Line 1985, 77).

The professional literature of bibliometrics also contains both articles of

theoretical interest from mathematics and statistics and articles of practical interest for the arts and humanities. Representative articles of theoretical interest include papers on frequency-rank distributions, of which "the lists of citations associated with specific serials occasionally published by ISI constitute typical and well-known examples" (Brookes and Griffiths 1978, 5), studies that calculate and interpret the class concentrations associated with geometric distributions and the laws of Lotka and Zipf (Egge 1987), reviews of time-related and other journal citation measures (Todorov and Glaenzel 1988), and analyses that present modifications of Bradford's law aimed at removing limitations on the process of journal selection (Rashid 1991, 63). Among these, Quentin L. Burrell—whose work has included the modification of a stochastic model for library loans to allow for aging of items in a collection (Burrell 1985b), modeling the Bradford phenomenon with a generalized Waring distribution, including a time parameter rather than the simple Poisson process (Burrell 1988, 3), and predicting relevant papers using either established parametric or empirical Bayes approaches, where the unit of time is equal to the length of already accumulated articles (Burrell 1989, 312)—has expressed a particular concern for the time parameter in empirical and stochastic models of library loans, saying, "The actual number of items constituting the 'core' depends upon the length of the period in which the given level of borrowing achieved is to be maintained" (Burrell 1985a, 35).

Representative articles of practical interest regarding the proportions of monographic and periodic literature in the arts and humanities include papers on measuring overlooked use of primary sources by units of paragraphs, as well as units of references to reveal an increase in primary over secondary sources (Wiberley 1979), studies on the inherent differences between humanistic scholarship and scientific research and the adaptation made of most cited authors to ensure a more objective means for evaluating arts and humanities journals (Garfield 1980), re-

search that characterizes references in scholarly English literary journals as being heavily dependent on books and material older than ten years old (Heinzkill 1980), and analyses of the literary scholarship of creative writers and literary movements that finds the latter taking on some of the characteristics of social science disciplines in its heavier reliance on journal literature and secondary sources (Stern 1983). Among these, John Cullars—whose work has included an article on the characteristics of foreign literary monographs by native speakers of English (Cullars 1988), a study of the citation characteristics of French and German literary monographs (Cullars 1989), and an examination of the citation characteristics of Italian and Spanish literary monographs (Cullars 1990)—has compared the way scholars use the monographic literature of British and American literary studies to similar studies involving the journal literature of the arts and humanities, but he does not attempt to establish the proportion of the journal literature of literary studies or of arts and humanities to the journal literature at large (Cullars 1985).

The professional literature of bibliography also contains, finally, articles that employ some form of comparativist methodology as a measure of validity. Representative comparativist articles include findings of a strong positive relationship between scientists' assessments of journal influence and citation influence ratings (McAllister, Anderson, and Narin 1980), results that show peer assessment and citation rates are reasonably reliable and largely interchangeable indices for evaluations in the aggregate, though neither can be reliably employed to differentiate between individual scholars or their individual contributions (Lawani and Bayer 1983), considerations of the reputational approach and citation analysis that caution against the "ecological fallacy" of assuming that the quality of an article can be assumed from the quality of the journal in which it was published (Weisheit and Regoli 1984), and analyses of the relationship between holdings from the OCLC Online Computer Library Center, Inc.'s

database and citations from the *Journal Citation Reports* section of *Science Citation Index* for a systematic sample of journals (Wallace and Boyce 1989).

Katherine W. McCain—whose work has included an assessment of journal use in a departmental library through citation analysis of faculty publications (McCain and Bobick 1981), an overview of author cocitation analysis (McCain 1991), and an experiment highlighting subject relatedness that maps a representative set of journals through citation analysis (McCain 1991b)—has suggested using core network analysis and cocited journal mapping to identify subject-focused core literature, measure relative journal prominence, and establish long-term collection-development plans (McCain 1991a). Two recent bibliographies on bibliometrics also have been compiled (White and McCain 1989, and Sellen 1993).

In sum there are advocates of using citation analysis to manage academic journal collections, with Broadus being a notable example; and there are opponents, Line being a notable example. There are also theoretical articles on the mathematics of citation analysis in scientific research, with Burrell being a notable example; and there are practical articles on the proportions of monographic to periodic citations within artistic and humanistic scholarship, Cullars being a notable example. Finally, there are articles that attempt to enhance citation analysis through comparisons with peer evaluations, reputation studies, union holdings, or some other form of co-occurrence, with McCain being a notable example. I will advocate the use of citation analysis to manage academic journal collections, establish a more accurate theoretical time parameter and practical proportional extinct for the journal literature of artistic and humanistic scholarship, and extend the correlation between citation rankings and union holdings from the sciences and social sciences into the arts and humanities by establishing a principle of uniformity in one domain and extending it throughout the file with a technique of interchangeability.

X TITLE	O PUBLISHER
Y ANNUAL REVIEW OF INFORMATIN SC COLLEGE & RESEARCH LIBRARIES	Q ELSEVIER SCIENCE PUBLS
Z COLLEGE & RESEARCH LIBRARIES	Q AMER LIBR ASSN
Y AMERICAN SOCIETY FOR INFORMATI	Q AMER LIBR ASSN
Y JOURNAL OF DOCUMENTATION	Q JOHN WILEY & SONS (NEW YORK)
LIBRARY RESOURCES & TECHNICAL	P ASLIB, ASSN FOR INFORMATION MA
JOURNAL OF ACADEMIC LIBRARIANS	P AMER LIBR ASSN LIBR COLLECTION
Z JOURNAL OF ACADEMIC LIBRARIANS	P MOUNTAINSIDE PUBL
Y SCIENTOMETRICS	P MOUNTAINSIDE PUBL
LIBRARY AND INFORMATION SCIENC	Q ELSEVIER SCIENCE PUBLS
Y ONLINE (WESTON)	P MITA SOC FOR LIBR & INFORMATIO
Z ONLINE (WESTON)	P ONLINE
Z ONLINE (WESTON)	P ONLINE
Z ONLINE (WESTON)	P ONLINE
LIBRARY ACQUISITIONS: PRACTICE	Q PERGAMON PRESS (TARRYTOWN)
SERIALS LIBRARIAN: THE INTERNA	Q HAWORTH PRESS
Z SERIALS LIBRARIAN: THE INTERNA	Q HAWORTH PRESS

Figure 1a

DESCRIPTION OF THE MODEL

A relational database file of approximately 13,000 journal titles, including 700 previous entries, has been compiled from three well-known abstracting and indexing services—the Institute for Scientific Information's *Current Contents* and *Journal Citation Reports*, the R. R. Bowker Company's *Magazines for Libraries*, and the H. W. Wilson Company's *Wilson Indexes*—in order to model an academic collection of serial publications and examine the use, need, and methodology that the literature survey of the introduction has revealed.

The general features of the line-printer display in figure 1a, chosen as the most efficient way to exhibit information from the file, show example records (or rows) in a two-dimensional table characteristic of such a file with fields (or columns) for the bibliographic elements and their associated abstracting and indexing domains and holdings. Among the bibliographic elements there is a title code (under X) and title; a publisher code (under O), publisher, and country of publication code (under CP); and two standard

numbers useful in interlibrary loan transactions: the International Standard Serial Number (under ISSN) and the British Library Document Supply Center shelf position number (under BLDSC).

Among the associated abstracting and indexing domains, there is a mnemonic showing each of the services. First is the edition of *Current Contents* (under C) along with the subject category rank (a relative index, within an academic discipline, of scholarly use—with 1 indicating the most used title in the discipline, 2 the next most used title, and so on), and impact factor (an absolute index, regardless of discipline, of scholarly use—with 1.000 indicating a citation for each article of a title; .500, a citation for every other article; and so on) for the most recent five years (1988 through 1992) of *Journal Citation Reports* (under JCR8892 and IF8892). Second is the broad subject listing and main entry number, which is helpful in those cases where the review is out of sequence, from the seventh edition (1992) of *Magazines for Libraries* (under MFL7 and ED92). Third is the Wilson Index (under WI). The last field in the display contains the holdings for each title

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
NE	0066-4200	1522.570000	100	S	INFO	1	1.198			98	1265
US	0010-0870	3311.000000	98	S	INFO	2	1.182	LIBR	4119	ED	99 1907
US	0010-0870	3311.000000	98	S	INFO	2	1.182	LIBR	4119	LL	99 1907
US	0002-8231	4692.870000	97	S	INFO	3	1.152	LIBR	4103	LL	95 772
UK	0022-0418	4970.000000	95	S	INFO	4	0.912	LIBR	4154	LL	82 337
US	0024-2527	5204.400000	93	S	INFO	5	0.846	LIBR	4180	LL	99 1740
US	0099-1333	4918.858000	92	S	INFO	6	0.802	LIBR	4153	ED	98 1265
US	0099-1333	4918.858000	92	S	INFO	6	0.802	LIBR	4153	LL	98 1265
NE	0138-9130	8205.080000	90	S	INFO	7	0.762				47 88
JA	0373-4447		88	S	INFO	8	0.725			LL	27 32
US	0146-5422	6260.755000	86	E	INFO	9	0.706	LIBR	4195	BP	99 1492
US	0146-5422	6260.755000	86	E	INFO	9	0.706	LIBR	4195	LL	99 1492
US	0146-5422	6260.755000	86	S	INFO	9	0.706	LIBR	4195	BP	99 1492
US	0146-5422	6260.755000	86	S	INFO	9	0.706	LIBR	4195	LL	99 1492
US	0364-6408	5188.130000	85	S	INFO	10	0.695	LIBR	4165	LL	87 438
US	0361-526X	8242.740000	83	S	INFO	11	0.678	LIBR	5879	LL	95 801
US	0361-526X	8242.740000	83	S	INFO	11	0.678	SERI	5879	LL	95 801

from OCLC's Online Union Catalog (under HOLD). The abstracting and indexing domain that included *Current Contents* and *Journal Citation Reports* is preceded by a field that gives the subject rank as a percentile within the category (under PCT); and in similar fashion, the holdings from the Online Union Catalog are preceded by a field that gives the holdings rank as a percentile within the file (under HLD).

The specific features of figure 1a show a ranked array, and among the bibliographic elements, in bold print, the first 30 characters of an example title (here, *Library Resources & Technical Services [LRTS]*), published by the American Library Association's Association for Library Collections & Technical Services division (here, under authority control, Amer Libr Assn Libr Collection), with its place of publication (here, US) and two standard numbers useful in interlibrary loan transactions (here, 0024-2527 and 5204.400000). Among the associated indexing and abstracting domains there are mnemonics for each of the services. First, *LRTS* appears in the Social & Behavioral Sciences edition (here S) of *Current Contents* and

the Information & Library Science subject category ranked fifth (here INFO 5, with an Impact Factor of 0.846) of *Journal Citation Reports*. Second, it appears in the broad subject listing Library Periodicals (here LIBR, with a Main Entry Number of 4180) from *Magazines for Libraries*. Third, it appears in *Library Literature* (here LL) from the Wilson Indexes. The last field in the display contains the holdings for *LRTS* from the OCLC Online Union Catalog (here 1,740). The percentile expression of subject rank for the example title within the category Information Science is 93; and in parallel with this, the percentile expression of holdings rank within the file is 99.

The general features of a similar lineprinter display in figure 1b show, for the sake of completeness, the remaining fields (or columns), which are less frequently consulted, for the example records (or rows) in the same array. Among the bibliographic elements, there is a field for the last 30 characters of the title, helpful in distinguishing similar titles (under SUBTITLE). Among the associated subject domains there are fields, first, for the subject category rank (again, a relative

SUBTITLE	JCR1988	IF1988	JCR1989	IF1989	JCR1990
SCIENCE AND TECHNOLOGY	INFO 1	1.444	INFO 4	0.899	INFO 3
	INFO 4	1.156	INFO 3	1.082	INFO 4
	INFO 4	1.156	INFO 3	1.082	INFO 4
ON SCIENCE JOURNAL	INFO 2	1.176	INFO 2	1.098	INFO 1
	INFO 3	1.161	INFO 9	0.722	INFO 12
SERVICES	INFO 15	0.776	INFO 7	0.727	INFO 10
HIP	INFO 13	0.797	INFO 1	1.109	INFO 8
HIP	INFO 13	0.797	INFO 1	1.109	INFO 8
	INFO 8	0.990	INFO 5	0.782	INFO 9
E	INFO 9	0.923	INFO 13	0.520	INFO 20
	INFO 17	0.711	INFO 6	0.770	INFO 5
	INFO 17	0.711	INFO 6	0.770	INFO 5
	INFO 17	0.711	INFO 6	0.770	INFO 5
	INFO 17	0.711	INFO 6	0.770	INFO 5
AND THEORY	INFO 12	0.823	INFO 21	0.403	INFO 7
TIONAL QUARTERLY JOURNAL OF SE	INFO 6	1.068	INFO 38	0.188	INFO 6
TIONAL QUARTERLY JOURNAL OF SE	INFO 6	1.068	INFO 38	0.188	INFO 6

Figure 1b

index, within a discipline, of scholarly use) and impact factor (an absolute index, regardless of discipline, of scholarly use) for each of the most recent five years, helpful in revealing discontinuous coverage of a title (1988 through 1992) from *Journal Citation Reports* (under JCR1988 through IF1992), together with a field for subject category size (under ISI8892). Second, there are fields for the broad subject listing and main entry number from the sixth edition (1989) of *Magazines for Libraries*, helpful in tracing the history of a review (under MFL6 and ED89). Finally, there are fields for the number of holding libraries exclusive of the host library (under OCLC) together with a code for the title when it is held by the host library, helpful in local collection development (under L). The subject category size (under ISI8892) in figure 1b, along with the subject category rank (under JCR8892) in figure 1a, appears in bold type to emphasize the origin of the percentile expression for rank within subject category (under PCT) in figure 1a.

Specific features of figure 1b show, among the bibliographic elements, the last 30 characters of the example title (here [*Library Resources & Technical*]

Services); and among the associated indexing and abstracting domains, subject category ranks of INFO 15, INFO 7, INFO 10, INFO 8, and INFO 4, with impact factors of 0.776, 0.727, 0.644, 0.814, and 1.271 (in 1988, 1989, 1990, 1991, and 1992), from a field of 59 Information & Library Science titles (INFO 59), and an earlier appearance under the broad subject listing Library Periodicals (LIBR, with main entry number 4009) in the sixth edition (1989) of *Magazines for Libraries*. Finally, there are 1,739 other holdings in OCLC besides this active title (A) of the host library.

A number of authors reviewed in the first part of this study express the concern that a critical factor in considering citation analysis or interlibrary loans of serial publication in use studies was the time parameter (Broadus 1989, 125; Line 1985, 77; and Burrell 1985a, 24); and several mention a specific parameter of five years (Cawkell 1977, 151; Lawani and Bayer 1983, 65; and Todorov and Glaenzel 1988, 51). The empirical evidence of the file, which is described in the conclusion, also suggests that compiling the subject category rank from *JCR* for a five-year period and comparing the number of holding li-

IF1990	JCR1991	IF1991	JCR1992	IF1992	ISI8892	MFL6	ED89	OCLC	L
1.000	INFO 2	1.118	INFO 2	1.529	INFO 59				1265
0.958	INFO 1	1.225	INFO 3	1.488	INFO 59	LIBR	3948		1906 A
0.958	INFO 1	1.225	INFO 3	1.488	INFO 59	LIBR	3948		1906 A
1.520	INFO 4	0.961	INFO 5	1.007	INFO 59	LIBR	3931		771 A
0.613	INFO 3	1.065	INFO 6	1.000	INFO 59	LIBR	3983		337
0.644	INFO 8	0.814	INFO 4	1.271	INFO 59	LIBR	4009		1739 A
0.694	INFO 7	0.833	INFO 12	0.575	INFO 59	LIBR	3982		1264 A
0.694	INFO 7	0.833	INFO 12	0.575	INFO 59	LIBR	3982		1264 A
0.686	INFO 10	0.719	INFO 11	0.634	INFO 59				88
0.476	INFO	0.000	INFO 1	1.706	INFO 59				32
0.885	INFO 12	0.608	INFO 15	0.558	INFO 59	LIBR	4022		1491 A
0.885	INFO 12	0.608	INFO 15	0.558	INFO 59	LIBR	4022		1491 A
0.885	INFO 12	0.608	INFO 15	0.558	INFO 59	LIBR	4022		1491 A
0.885	INFO 12	0.608	INFO 15	0.558	INFO 59	LIBR	4022		1491 A
0.766	INFO 11	0.634	INFO 7	0.847	INFO 59	LIBR	3993		437 I
0.794	INFO 14	0.526	INFO 8	0.815	INFO 59	LIBR	5734		800 A
0.794	INFO 14	0.526	INFO 8	0.815	INFO 59	SERI	5734		800 A

libraries from OCLC that might be expected to provide interlibrary loans for each serial publication in the file (and thus be required to keep records for the Transactional Reporting Service of the Copyright Clearance Center for a similar five year period) is the minimum parameter necessary to establish what Burrell would call a "core collection."

To begin to show how the percentile expression of subject rank within each category can be correlated with the percentile expression of holdings rank within the file through the Pearson product-moment coefficient elaborated shortly, and how the results from such a correlation can be used to predict subject rank for titles within the file outside the domain of *Journal Citation Report*, requires looking at the file from a different vantage.

FILE INDEXED BY SERVICE DOMAINS

The *INDEX ON* command can be used in turn on each of the mnemonics for the abstracting and indexing services associated with example titles to create alphabetic arrays under each subject category or broad subject listing represented by these services without actually reordering

the file. A pair of line-printer displays might help to acquaint us with this apparent sorting of the file, which is a characteristic feature of the relational database. Figure 2 shows the highlighted *Journal of Information Science*, by Elsevier Science Publishers, in the middle of an alphabetic list of titles from the Information & Library Science subject category from *Journal Citation Reports* (all here with a bold INFO). Because it is by academic discipline, this list of titles could be used to review the periodical holdings in support of a program for a Computer and Information Science department. The different title codes, which appear here and throughout the illustrations, permit the duplication of a record in order to display the full combination of subject domains from the various abstracting and indexing services without affecting the title count: an S title code permits the display of previous as well as current titles (as instanced by *Journal of Library History* and *Libraries & Culture* in the alphabetic list), and Z title codes permit the full displays of broad subject listings from *Magazines for Libraries* and the Wilson Indexes (as instanced by *Law Library Journal* in the same list).

X TITLE	O PUBLISHER
INTERNATIONAL JOURNAL OF INFOR	BUTTERWORTH - HEINEMANN
INTERNATIONAL LIBRARY REVIEW>I	ACADEMIC PRESS (LONDON)
JOURNAL OF ACADEMIC LIBRARIANS	P MOUNTAINSIDE PUBL
Z JOURNAL OF ACADEMIC LIBRARIANS	P MOUNTAINSIDE PUBL
Y JOURNAL OF DOCUMENTATION	P ASLIB, ASSN FOR INFORMATION MA
JOURNAL OF ECONOMIC & SOCIAL M	I O S PRESS
Y JOURNAL OF EDUCATION FOR LIBRA	ASSN FOR LIBR & INFO SCI EDUC
Z JOURNAL OF EDUCATION FOR LIBRA	ASSN FOR LIBR & INFO SCI EDUC
Y JOURNAL OF INFORMATION SCIENCE	Q ELSEVIER SCIENCE PUBLS
JOURNAL OF LIBRARIANSHIP>JOURN	P BOWKER-SAUR
JOURNAL OF LIBRARY & INFORMATI	NATL TAIWAN NORMAL UNIV SOCIAL
S JOURNAL OF LIBRARY HISTORY>LIB	UNIV OF TEXAS PRESS
LAW LIBRARY JOURNAL	AMER ASSN OF LAW LIBRS
Z LAW LIBRARY JOURNAL	AMER ASSN OF LAW LIBRS
Z LAW LIBRARY JOURNAL	AMER ASSN OF LAW LIBRS
Z LAW LIBRARY JOURNAL	AMER ASSN OF LAW LIBRS
LIBRARIES & CULTURE<JOURNAL OF	UNIV OF TEXAS PRESS

Figure 2

X TITLE	O PUBLISHER
BULLETIN OF BIBLIOGRAPHY	P G P SUBSCRIPTION PUBL
CAMBRIDGE BIBLIOGRAPHICAL SOCI	CAMBRIDGE BIBLIOGRAPHICAL SOC
COLUMBIA LIBRARY COLUMNS	COLUMBIA UNIV LIBR
GUTENBERG - JAHRBUCH	GUTENBERG-GESELLSCHAFT
HARVARD LIBRARY BULLETIN	P HARVARD UNIV LIBR
HUNTINGTON LIBRARY QUARTERLY:	P HUNTINGTON LIBR ART COLLECTION
JOHN RYLANDS UNIVERSITY LIBRAR	P JOHN RYLANDS UNIV LIBRARY
LIBRARY CHRONICLE (AUSTIN)	UNIV OF TEXAS AUSTIN HUMANITIE
LIBRARY: THE TRANSACTIONS OF T	Q OXFORD UNIV PRESS
MATRIX	WHITTINGTON PRESS
PRINCETON UNIVERSITY LIBRARY C	P PRINCETON UNIV LIBR
PRIVATE LIBRARY	PRIVATE LIBRS ASSN
PUBLISHING HISTORY	CHADWYCK-HEALEY
SCRIPTORIUM	CENTRA D'ETUDES DES MANUSCRIPT
STUDIES IN BIBLIOGRAPHY: PAPER	P UNIV PRESS OF VIRGINIA
VOICES (CANBERRA, AT)	NATL LIBR OF AUSTRALIA
YALE UNIVERSITY LIBRARY GAZETT	P YALE UNIV LIBR

Figure 3

In similar fashion, figure 3 shows *Library: The Transactions of t[he Bibliographic Society]*, by Oxford University Press, in the middle of the broad subject list bibliography from the seventh (1992) edition of *Magazines for Libraries* (all

here with a bold BIBL). Again, the list of titles, because it is by academic discipline, could be used to review the serial publication holdings in support of a program for a language and literature department. From these examples we can see that the

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
UK	0268-4012	4542.304900	14	S	INFO 52	0.118				39	60
UK	0020-7837		24	S	INFO 46	0.143	LIBR	4151	LL	77	268
US	0099-1333	4918.858000	92	S	INFO 6	0.802	LIBR	4153	ED	98	1265
US	0099-1333	4918.858000	92	S	INFO 6	0.802	LIBR	4153	LL	98	1265
UK	0022-0418	4970.000000	95	S	INFO 4	0.912	LIBR	4154	LL	82	337
NE	0747-9662		3		INFO 58	0.013				64	171
US	0748-5786	4973.150100	53	S	INFO 29	0.329	LIBR	4155	ED	83	343
US	0748-5786	4973.150100	53	S	INFO 29	0.329	LIBR	4155	LL	83	343
NE	0165-5515	5006.772800	73	S	INFO 17	0.545	LIBR	4156	LL	62	155
UK	0022-2232		56	S	INFO 27	0.345	LIBR	4158	LL	71	221
CH	0363-3640		12		INFO 53	0.104			LL	30	38
US	0275-3650		20	S	INFO 48	0.137			LL	86	413
US	0023-9283	5161.400000	64	S	INFO 22	0.439	LAW	4162	LL	90	526
US	0023-9283	5161.400000	64	S	INFO 22	0.439	LAW	4162	LP	90	526
US	0023-9283	5161.400000	64	S	INFO 22	0.439	LIBR	4162	LL	90	526
US	0023-9283	5161.400000	64	S	INFO 22	0.439	LIBR	4162	LP	90	526
US	0894-8631	5186.892520	10	S	INFO 54	0.097	LIBR	4164	LL	80	301

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
US	0190-745X					0.000	BIBL	1058		92	629
UK	0068-6611					0.000	BIBL	1059		60	143
US	0010-1966					0.000	BIBL	1060	LL	59	142
GW	0072-9094					0.000	BIBL	1061		61	147
US	0017-8136			H		0.000	BIBL	1062		88	455
US	0018-7895			H		0.000	BIBL	1063	HU	92	611
UK	0301-102X	2597.410000		H		0.000	BIBL	1064		82	334
US	0024-2241			H		0.000	BIBL	1066		61	152
UK	0024-2160			H		0.000	BIBL	1065	LL	83	347
UK	0261-3093					0.000	BIBL	1067		48	92
US	0032-8456					0.000	BIBL	1069		76	261
UK	0032-8898					0.000	BIBL	1070	LL	51	103
UK	0309-2445			H		0.000	BIBL	1071		62	153
BE	0036-9772			H		0.000	BIBL	1072		64	171
US	0081-7600					0.000	BIBL	1073		88	444
AT	1036-1561					0.000	BIBL	1068		11	7
US	0044-0175					0.000	BIBL	1074		75	251

review of materials in support of a program in computer and information science would be reasonably straightforward because it had a quantitative index (each of the entry terms being a rank); the review of materials in support of a program

in language and literature would be, by contrast, roundabout because it had a qualitative index (each of the entry terms being a review).

It was a consideration of such differences as these that suggested developing

a potential form of the core journal networks and cocitation mapping that seemed implicit in the work of McCain. If the percentile expressions of subject category rank for titles such as, in figure 2, *Journal of Library & Information Science*, which appears in only one abstracting and indexing domain aside from JCR8892 (LL under WI); for titles such as *Journal of Library History*, which appears in two service domains aside from JCR8892 (S under C and LL under WI); and for titles such as *Law Library Journal*, which appears in three domains aside from JCR8892 (S under C, LAW and LIBR under MFL7, and LL and LP under WI) were all averaged (titles from one service domain, without regard to what that domain was, all together; titles from two domains, without regard to what they were, all together; and titles from three, all together); those averages—which proved to be 45, 58, and 65—might be extended by analogy from the sciences and social sciences to similar overlappings chiefly in the arts and humanities, and the broad subject list ranks for titles such as those in figure 3 could be inferred from the cocitation mapping. Thus, *Gutenberg-Jahrbuch*, which appears in one abstracting and indexing domain (BIBL under MFL7) could be ranked in the 45th percentile; *Harvard Library Bulletin*, which appears in two service domains (H under C and BIBL under MFL7), could be ranked in the 58th percentile; and *Huntington Library Quarterly*, which appears in three domains (H under C, BIBL under MFL7, and HU under WI), could be ranked in the 65th percentile.

Although this form of core journal networks had a certain intuitive appeal, the cocitation mapping described here, which treats abstracting and indexing services as though they were authors of documents, did not permit any finer differentiation than the three tiers described. There seemed to be no way to verify the accuracy of the larger integrals (titles from one domain, titles from two domains, and titles from three domains) being suggested.

Some consideration was also given to extending the subject rankings associated with the sciences and social sciences into

the arts and humanities by examining use studies or rankings associated with the 10,000 periodicals comprising the table of contents database *Inside Information* published by the British Library Document Supply Center. The proportions of sciences (75) to social sciences (20) to humanities (5) in the literature promoting the database as a part of EBSCO CASIAS (Current Awareness Service/Individual Article Service) seemed to confirm from a different vantage point the article of practical interest on the proportions of the journal literature of humanistic scholarship highlighted in the introductory section (Cullars 1985); and a letter dated 21 June 1993 from John Fitts, Vice President and General Manager of the Data Processing Service Center at EBSCO, was received that enclosed a disk copy of the titles, including ISSNs and BLDSC shelf position numbers. There were, however, no rankings in the file to support (or contradict) Line's thesis that interlibrary loans of serial publications changed too much over time to be of any value. This was followed several months later by an updated disk, but once again there were no rankings. After further inquiries, another letter dated 15 December 1993 from Kathleen Born, Director of the Academic Division of EBSCO, was received that confessed that the British Library Document Supply Centre was not willing to make public the rankings of the 10,000 journals that comprised the file. EBSCO had provided what help it could, but without further cooperation from the Document Supply Centre it seemed the unranked data would be of little use. A fresh look at the file from a different vantage point seemed to be in order if there were to be any hope of extending the subject rankings associated with the sciences and social sciences into the arts and humanities.

THE FILE INDEXED BY PUBLISHER

It was at this juncture, while searching periodicals by the same publisher among titles from three overlapping domains to verify the ISSNs in the Online Union Catalog that would provide a common

element between the fourth domain of the *Inside Information* titles and the three existing domains of the initial file before using the *SETRELATION* command (another of the characteristic features of the relational database) to transfer BLDS shelf position numbers from the titles to the file, that the realization of how to focus the correspondence between subject category rank (which seemed consistently high) and number of holding libraries (which also seemed consistently high) came to be discovered. The earlier attempt to correlate citations and holdings made by Wallace and Boyce considered subject categories as though they were unrelated and isolated. Their study ignored the problem of gauging the rank of a journal that appeared in more than one category; and their analysis, based entirely on *synchronous* rather than *diachronous* citations (Lawani and Bayer 1983, 65), did not provide the means for calibrating a time parameter. They considered a systematic sample and a composite of eight subject areas, but not what Bensman would have called "the cumulative advantage process" of a collection; and in the absence of the spatial and temporal requirements that would have required, there was no perception of a need to address the principle of uniformity within the citation domain.

The correspondence between category rank and holding rank, once defined mathematically, would translate that principle from the citation domain with a technique of interchangeability that could be used to predict, not only the strength of individual titles in a broad subject list from the arts and humanities, but also the collective strength for each publisher and press in the file. The correspondence could be brought into very sharp focus for the titles from three overlapping domains by simply converging or averaging the percentile expression of subject ranks for each serial publication. Once recognized, the potential for this technique was compelling enough to motivate a search in the Online Union Catalog, first of the set of titles from three domains, and eventually of the entire file for holdings during the first quarter of 1994; and following the

submission of the first draft of this manuscript, the additional titles from the *Inside Information* domain as well.

By using the *INDEX ON* command with the publisher, rather than the abstracting or indexing services associated with example titles, different alphabetic arrays can be created, again, without actually reordering the file. Two more lineprinter displays might help us to interpret this second apparent sorting of the file. Figure 4 shows the highlighted *Journal of Information Science*, by Elsevier Science Publishers, in the middle of an alphabetic list of titles all by the same highlighted publisher. The Y title codes permit the full display of subject category ranks from *Journal Citation Reports* (as instanced here not only by the highlighted title, which is ranked 66 in one category and 73 in another; but also by the *Journal of Hydrology*, which is ranked 95 in one category, 61 in a second, and 85 in a third; the *Journal of Magnetism and Magnetic Materials*, which is ranked 91 in one category and 72 in another; and *Journal of Materials Processing Technology*, which is ranked 25 in one category and 7 in another). The percentile expression of subject category rank provides the first step necessary to establish the principle of uniformity in the file.

Figure 5 shows the same highlighted title, this time in the middle of a group of titles associated with a numeric array created by using the *INDEX ON* command with the holdings from the Online Union Catalog of an extended file that includes all of the titles of the original database as well as those from the *Inside Information* domain. This extended file contains almost 18,000 records. The percentile expressions of subject category rank for *Journal of Information Science* in figure 4 (66 in one category and 73 in another) have now been averaged into a single percentile (70), and the same procedure has been followed for each of the titles within the domain of *Journal Citation Reports* (each coded J in the extended file).

Averaging the percentile expression of subject category rank provides the second step necessary to establish the principle of uniformity in the domain. A rank order for

X TITLE	O PUBLISHER
JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
Y JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
Y JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
Z JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
Z JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
Z JOURNAL OF HYDROLOGY	Q ELSEVIER SCIENCE PUBS
JOURNAL OF IMMUNOLOGICAL METHO	Q ELSEVIER SCIENCE PUBS
JOURNAL OF INFORMATION SCIENCE	Q ELSEVIER SCIENCE PUBS
Y JOURNAL OF INFORMATION SCIENCE	Q ELSEVIER SCIENCE PUBS
JOURNAL OF INTERNATIONAL ECONO	Q ELSEVIER SCIENCE PUBS
JOURNAL OF LIPID MEDIATORS	Q ELSEVIER SCIENCE PUBS
JOURNAL OF LUMINESCENCE	Q ELSEVIER SCIENCE PUBS
JOURNAL OF MAGNETISM AND MAGNE	Q ELSEVIER SCIENCE PUBS
Y JOURNAL OF MAGNETISM AND MAGNE	Q ELSEVIER SCIENCE PUBS
S JOURNAL OF MANUFACTURING & OPER	ELSEVIER SCIENCE PUBS
JOURNAL OF MATERIALS PROCESSIN	ELSEVIER SCIENCE PUBS
Y JOURNAL OF MATERIALS PROCESSIN	ELSEVIER SCIENCE PUBS

Figure 4

X TITLE	O PUBLISHER
CANADIAN THEATRE REVIEW	UNIV OF TORONTO PRESS
J CRITICAL REVIEWS IN CLINICAL L	Q C R C PRESS
B DRUG INFORMATION JOURNAL	DRUG INFO ASSN
B FAMILY SYSTEMS MEDICINE	BRUNNER-MAZEL
HEMMINGS MOTOR NEWS>HEMMINGS V	WATERING
J INSTITUTION OF CIVIL ENGINEERS	THOMAS TELFORD
J JOURNAL OF CHROMATOGRAPHY - BI	ELSEVIER SCIENCE PUBS
JOURNAL OF COUNTRY MUSIC	COUNTRY MUSIC FOUNDATION
J JOURNAL OF INFORMATION SCIENCE	Q ELSEVIER SCIENCE PUBS
J JOURNAL OF PLANKTON RESEARCH	Q OXFORD UNIV PRESS
B JOURNAL PSYCHOLOGY AND CHRISTI	BOOKCRAFTERS
J METALS TECHNOLOGY>MATERIALS SC	INST OF METALS
MIDWEST MODERN LANGUAGE ASSOCI	MIDWEST MODERN LANGUAGE ASSN
B MINING MAGAZINE -LONDON-	MINING JOUR
J NOISE CONTROL ENGINEERING JOUR	NOISE CONTROL ENGINEERING JOUR
ORIENTATIONS	ORIENTATIONS MAGAZINE
J RADIATION EFFECTS	GORDON & BREACH SCIENCE (READI

Figure 5

the file has been created by first entering the record number into the LIST_H field, and then combining and averaging that number for each gradation of holdings in the RANK_H field. The highlighted title, which has holdings of 155, thus ranks

11,000 in a file of 17,762 records; and the percentile expression of this holdings rank within the extended file is 62. Each percentile expression of subject rank can be related to a corresponding percentile expression of holdings rank, and by sum-

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD	
NE	0022-1694	5003.700000	95	A	ENGV	4	0.728	EART	2135	76	257	
NE	0022-1694	5003.700000	61	A	GEOS	41	0.728	EART	2135	76	257	
NE	0022-1694	5003.700000	85	A	WATE	7	0.728	EART	2135	76	257	
NE	0022-1694	5003.700000	95	E	ENGV	4	0.728	EART	2135	76	257	
NE	0022-1694	5003.700000	61	E	GEOS	41	0.728	EART	2135	76	257	
NE	0022-1694	5003.700000	85	E	WATE	7	0.728	EART	2135	76	257	
NE	0022-1759	5004.600000	70	L	IMMU	33	1.955			81	313	
NE	0165-5515	5006.772800	66	S	COMP	78	0.545	LIBR	4156	LL	62	155
NE	0165-5515	5006.772800	73	S	INFO	17	0.545	LIBR	4156	LL	62	155
NE	0022-1996	5007.650000	84	S	ECON	24	0.866	ECON	2210	SI	85	384
NE	0921-8319	5010.495000	43	L	BIOC114		1.088			23	24	
NE	0022-2313	5010.650000	70	P	OPTI	11	1.026			65	173	
NE	0304-8853	5010.793000	91	P	MATE	11	1.256	PHYS	5404	61	149	
NE	0304-8853	5010.793000	72	P	PHYC	12	1.256	PHYS	5404	61	149	
US	0890-2577	5011.630000					0.000	MANA	4554	50	99	
NE	0924-0136	5012.235000	25	E	ENGM	54	0.053			30	38	
NE	0924-0136	5012.235000	7	E	MATE104		0.053			30	38	

CP	ISSN	PCT	SQDEV_P	PCTZHLHZ	SQDEV_H	HLD	RANK_H	LIST_H	HOLD
CN	0315-0836	50				62	11000.0	6754	155
US	1040-8363	82	1052.35	0.00779	0.03	62	11000.0	6755	155
US	0092-8615	50				62	11000.0	6756	155
US	0736-1718	50				62	11000.0	6757	155
US	8755-2272	50				62	11000.0	6758	155
UK	0307-8353	54	19.71	0.00107	0.03	62	11000.0	6759	155
NE	0378-4347	50	0.19	0.00011	0.03	62	11000.0	6760	155
US	0092-0517	50				62	11000.0	6761	155
NE	0165-5515	70	417.79	0.00491	0.03	62	11000.0	6762	155
UK	0142-7873	90	1635.39	0.00971	0.03	62	11000.0	6763	155
US	0733-4273	50				62	11000.0	6764	155
UK	0307-1693	1	2358.07	-0.01166	0.03	62	11000.0	6765	155
US	0742-5562	50				62	11000.0	6766	155
UK	0308-6631	50				62	11000.0	6767	155
US	0736-2501	15	1194.39	-0.00829	0.03	62	11000.0	6768	155
HK	0030-5448	50				62	11000.0	6769	155
UK	0033-7579	33	274.23	-0.00397	0.03	62	11000.0	6770	155

ming these and their related values within the *Journal Citation Reports* or *J*-domain of the extended file, the Pearson product-moment coefficient, which is a numerical index indicating precisely the degree of relationship, can be calculated. The mean

for PCT in the *J*-domain of the extended file is 49.56; and the mean for HLD, 61.83. The standard deviation for PCT in the *J*-domain of the extended file is 29.16; and the standard deviation for HLD, 24.11. The PCT and HLD numbers can

X TITLE	O PUBLISHER
SCRIBLERIAN AND KIT-CATS	P TEMPLE UNIV ENGLISH DEPT
J WORLD DEVELOPMENT	Q PERGAMON PRESS (TARRYTOWN)
J COGNITIVE THERAPY AND RESEARCH	Q PLENUM PUBL
CURRENT MATHEMATICAL PUBLICATI	Q AMER MATHEMATICAL SOC
GOLF MAGAZINE (NEW YORK : 1991	Q TIMES MIRROR MAGAZINES
J INTERNATIONAL JOURNAL OF CLINI	Q SAGE PUBL
J JEWISH SOCIAL STUDIES	CONF ON JEWISH SOCIAL STUDIES
J JOURNAL OF PROSTHETIC DENTISTR	MOSBY - YEAR BOOK
LIBRARY: THE TRANSACTIONS OF T	Q OXFORD UNIV PRESS
J RECENT ADVANCES IN PHYTOCHEMIS	PHYTOCHEMICAL SOC OF NORTH AME
J S I G P L A N NOTICES>A C M S	P ASSN FOR COMP MACH SIG PROG LA
J TEACHING POLITICAL SCIENCE>PER	HELDREF PUBL
UNION SEMINARY QUARTERLY REVIE	P UNION THEOLOGICAL SEM
J BULLETIN ON NARCOTICS	UNITED NATIONS PUBL
ITALIAN JOURNAL	P ITALIAN ACAD FOUNDATION
LITIGATION	P AMER BAR ASSN LITIGATION SECT
J MEASUREMENT SCIENCE AND TECHNO	Q I O P PUBL (INST OF PHYSICS)

Figure 6

X TITLE	O PUBLISHER
Z JOURNAL OF PUBLIC HEALTH MEDIC	OXFORD UNIV PRESS
Z JOURNAL OF PUBLIC HEALTH MEDIC	OXFORD UNIV PRESS
JOURNAL OF SEMITIC STUDIES	Q OXFORD UNIV PRESS
JOURNAL OF SOUTHERN AFRICAN ST	Q OXFORD UNIV PRESS
JOURNAL OF THEOLOGICAL STUDIES	Q OXFORD UNIV PRESS
JOURNAL OF TROPICAL PEDIATRICS	OXFORD UNIV PRESS
Y JOURNAL OF TROPICAL PEDIATRICS	OXFORD UNIV PRESS
JOURNAL OF ZOOLOGY	Q OXFORD UNIV PRESS
LIBRARY: THE TRANSACTIONS OF T	Q OXFORD UNIV PRESS
LITERATURE AND THEOLOGY	OXFORD UNIV PRESS
LONDON MATHEMATICAL SOCIETY PR	Q OXFORD UNIV PRESS
MIND	Q OXFORD UNIV PRESS
MUSIC AND LETTERS	Q OXFORD UNIV PRESS
NOTES AND QUERIES: FOR READERS	Q OXFORD UNIV PRESS
OXFORD ART JOURNAL	OXFORD UNIV PRESS
OXFORD ECONOMIC PAPERS	Q OXFORD UNIV PRESS
OXFORD JOURNAL OF LEGAL STUDIE	OXFORD UNIV PRESS

Figure 7

be converted to z -numbers by finding the deviation of each number from its mean and dividing by the standard deviation. The product-moment coefficient is the mean of these z -number products, so by

summing PCTZHLDZ (the z -number products) in the J -domain of the file and dividing by the number of records in the domain (6,358), the correlation coefficient can be calculated as .5002.

CP	ISSN	PCT	SQDEV_P	PCTZHLDZ	SQDEV_H	HLD	RANK_H	LIST_H	HOLD
US	0190-731X	62				83	14743.0	3024	348
US	0305-750X	72	503.55	0.67564	448.17	83	14743.0	3025	348
US	0147-5916	89	1555.51	1.18731	448.17	83	14731.0	3026	347
US	0361-4794	62				83	14731.0	3027	347
US	1056-5493	62				83	14731.0	3028	347
US	0020-7144	55	29.59	0.16389	448.17	83	14731.0	3029	347
US	0021-6704	17	1060.15	-0.97989	448.17	83	14731.0	3030	347
US	0022-3913	46	12.67	-0.10700	448.17	83	14731.0	3031	347
UK	0024-2160	62				83	14731.0	3032	347
US	0079-9920	1	2358.07	-1.46154	448.17	83	14731.0	3033	347
US	0362-1340	57	55.35	0.22410	448.17	83	14731.0	3034	347
US	0092-2013	1	2358.07	-1.46154	448.17	83	14731.0	3035	347
US	0041-7025	62				83	14731.0	3036	347
UN	0007-523X	16	1126.27	-1.01000	448.17	83	14722.5	3037	346
US	0894-1793	62				83	14722.5	3038	346
US	0097-9813	62				83	14722.5	3039	346
UK	0957-0233	57	55.35	0.22410	448.17	83	14722.5	3040	346

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD	
UK	0957-4832	5043.560000	22	S	PUBH	22	0.268			38	57	
UK	0957-4832	5043.560000	21	S	PUBL	57	0.268			38	57	
UK	0022-4480		58	H			0.000			76	262	
UK	0305-7070	5066.030000	85	S	AREA	6	0.492	AFRI	419	64	170	
UK	0022-5185		63	H			0.000	SYST	6126	HU	84	366
UK	0142-6338	5071.090000	38	C	PEDI	38	0.288			48	93	
UK	0142-6338	5071.090000	56	C	TROP	9	0.288			48	93	
UK	0952-8369	5072.790000	83	A	ZOOL	19	0.797			BI	72	225
UK	0024-2160		62	H			0.000	BIBL	1065	LL	83	347
UK	0269-1205	5276.716000	45				0.000	LITE	4396		54	117
UK	0024-6115		93	P	MATH	10	0.833	MATH	4676		84	360
UK	0026-4423		70	H			0.000	PHIL	5302	HU	96	856
UK	0027-4224		68	H			0.000	MUSI	4991	HU	93	673
UK	0029-3970		69	H			0.000	LITE	4407	HU	95	765
UK	0142-6540	6320.597000	48	H			0.000	ART	786	AI	59	140
UK	0030-7653	6320.700000	64	S	ECON	52	0.516	ECON	2228	SI	90	515
UK	0143-6503		50				0.000			LP	63	163

The mean, standard deviation, and correlation coefficient can be used to compute the slope of the regression line (the correlation coefficient times the standard deviation of PCT divided by the

standard deviation of HLD, which is .6047); these, to compute the Y intercept (the mean of PCT minus the product of the slope of the regression line times the mean of HLD, which is 12.17); and the

X TITLE	O PUBLISHER
APPLIED SURFACE SCIENCE	ELSEVIER SCIENCE PUBS
Z APPLIED SURFACE SCIENCE	ELSEVIER SCIENCE PUBS
ATMOSPHERIC RESEARCH	ELSEVIER SCIENCE PUBS
CATALYSIS TODAY	ELSEVIER SCIENCE PUBS
F E M S MICROBIOLOGY IMMUNOLOG	Q ELSEVIER SCIENCE PUBS
JOURNAL OF APPLIED GEOPHYSICS	ELSEVIER SCIENCE PUBS
JOURNAL OF CONTAMINANT HYDROLO	ELSEVIER SCIENCE PUBS
S JOURNAL OF MANUFACTURING & OPER	ELSEVIER SCIENCE PUBS
JOURNAL OF MEDIEVAL HISTORY	Q ELSEVIER SCIENCE PUBS
JOURNAL OF OPERATIONS MANAGEME	Q ELSEVIER SCIENCE PUBS
MICROELECTRONIC ENGINEERING	ELSEVIER SCIENCE PUBS
POETICS: INTERNATIONAL REVIEW	ELSEVIER SCIENCE PUBS
ROBOTICS>ROBOTICS AND AUTONOMO	ELSEVIER SCIENCE PUBS
RUSSIAN LITERATURE	ELSEVIER SCIENCE PUBS
SAFETY SCIENCE<JOURNAL OF OCCU	ELSEVIER SCIENCE PUBS
SOLAR ENERGY MATERIALS & SOLAR	ELSEVIER SCIENCE PUBS
Z SOLAR ENERGY MATERIALS & SOLAR	ELSEVIER SCIENCE PUBS

Figure 8

regression line and Y intercept, to predict PCT from HLD (PCT equaling the product of the slope of the regression line times HLD plus the Y intercept, or PCT equaling the product of .6047 times HLD plus 12.17).

A third pair of line-printer displays might make the significance of this ability to predict the percentile expression of subject rank from the percentile expression of holdings rank easier to grasp now that the underlying principle of uniformity has been established for the *Journal Citation Reports* domain of the file. In figure 6, the highlighted title *Library: The Transactions of [the Bibliographic Society]*, by Oxford University Press, is shown in the middle of another group of titles associated with the same numeric array created by indexing on the holdings in the extended file. Here, in contrast to figure 5 (where the holdings rank of 62 was being correlated with subject ranks, not only of 70 for the example title, but also of 82, 54, 50, 90, 1, 15, and 33), the correlation coefficient has been used to predict the subject rank of 62 from the holdings rank of 83, not only for the example title, but also all of the other titles in the extended file that are outside the J-domain. Figure

7 shows the same highlighted title back in the middle of an alphabetic list of titles all by the same highlighted publisher, which has been created by using the *INDEX ON* command with the publisher in the original database file. The discovery of a technique of interchangeability to predict subject rank from holdings rank means that it is possible to extend the underlying principle of uniformity from the *Journal Citation Reports* domain of the file to include, not only the science and social science titles of a publisher or press such as Oxford University Press, but also its arts and humanities titles. Based on the extension of that underlying principle, we can begin to understand how it might be possible to evaluate the publishers and presses themselves with greater accuracy.

OBSERVATIONS AND CONCLUSION

The introduction suggested that part of the rationale for creating the relational database model would be to delineate equivalents to subject category ranks for the arts and humanities. Now that a principle of uniformity has been established for the *Journal Citation Reports* domain of the file and a technique of interchange-

CP	ISSN	BLDSC	PCT	C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
NE	0169-4332	1580.082000	50	E		0.000				62	154
NE	0169-4332	1580.082000	50	P		0.000				62	154
NE	0169-8095	1767.470000	37			0.000	ATMO	966		41	66
NE	0920-5861	3090.944000	34	P		0.000				36	54
NE	0920-8534	3905.297500	56	L		0.000				72	226
NE	0926-9851		43	P		0.000				51	103
NE	0169-7722	4965.220500	46	A		0.000				56	123
US	0890-2577	5011.630000	42			0.000	MANA	4554		50	99
NE	0304-4181		57	H		0.000	HIST	3564		74	244
US	0272-6963	5026.323000	56			0.000	MANA	4555		73	234
NE	0167-9317	5758.810000	37	E		0.000	ELEC	2444		41	67
NE	0304-422X		54	H		0.000	LITE	4412		70	210
NE	0167-8493		41			0.000	ENGS	2545		47	90
NE	0304-3479		45	H		0.000	USSX	6481		54	118
NE	0925-7535		32	E		0.000				33	45
NE	0927-0248		41	E		0.000				47	89
NE	0927-0248		41	P		0.000				47	89

ability used with it to predict subject category ranks from union holding ranks, this possibility has become a reality. A fourth pair of line-printer displays might help make this achievement more comprehensible. Figure 8 shows the highlighted *Journal of Medieval History*, by Elsevier Science Publishers, in the midst of an alphabetic array of titles all by the same publisher. In this case, however, another of the characteristic features of the relational database, the *SET FILTER* command, has been used to create a subset of all titles outside the JCR8892 domain in the original database file. This allows us to see to what extent the technique of predicting subject rank from holding rank affects our view of a major publisher: besides the highlighted title, Elsevier also publishes *Poetics* and *Russian Literature*, all three of which are found in the Arts & Humanities edition (H) of *Current Contents*.

Figure 9 shows the highlighted titles *Oxford Art Journal* and *Greece and Rome*, both by Oxford University Press, in the midst of an alphabetic array of titles all by the same publisher. In this case, too, the *SET FILTER* command has been used to create a subset of all titles outside the

JCR8892 domain in the database file. This allows us to see to what extent the technique affects our view of a major press: besides the highlighted titles, Oxford also publishes *Journal of Theological Studies*, *Mind*, *Music and Letters*, and *Notes and Queries*, all six of which are found in either *Art Index* (AI) or *Humanities Index* (HU) among the Wilson Indexes.

A final group of line-printer displays, which use the *INDEX ON* command with the service domains just mentioned, might help us to appreciate this last point more completely. Figure 10 shows the highlighted title *Journal of Medieval History*, published by Elsevier Science Publishers, in the midst of an alphabetic array of titles all from the Arts & Humanities edition of *Current Contents* (here H under C). Once more the *SET FILTER* command has been used to create a subset of all titles outside the JCR8892 domain in the original database. This allows us to see one aspect of what was suggested as our intent in the introduction: subject ranks characteristic of the sciences and social sciences applied to the arts and humanities within the domain of *Current Contents*.

Figure 11 shows the highlighted title *Oxford Art Journal*, published by Oxford

X TITLE	O PUBLISHER
ENGLISH LANGUAGE TEACHING JOUR	Q OXFORD UNIV PRESS
EUROPEAN SOCIOLOGICAL REVIEW	OXFORD UNIV PRESS
FRENCH HISTORY	OXFORD UNIV PRESS
GLYCOBIOLOGY	OXFORD UNIV PRESS
GREECE AND ROME	Q OXFORD UNIV PRESS
I A T U L QUARTERLY (INTL ASSN	OXFORD UNIV PRESS
JOURNAL OF SEMITIC STUDIES	Q OXFORD UNIV PRESS
JOURNAL OF THEOLOGICAL STUDIES	Q OXFORD UNIV PRESS
LIBRARY: THE TRANSACTIONS OF T	Q OXFORD UNIV PRESS
LITERATURE AND THEOLOGY	OXFORD UNIV PRESS
MIND	Q OXFORD UNIV PRESS
MUSIC AND LETTERS	Q OXFORD UNIV PRESS
NOTES AND QUERIES: FOR READERS	Q OXFORD UNIV PRESS
OXFORD ART JOURNAL	OXFORD UNIV PRESS
OXFORD JOURNAL OF LEGAL STUDIE	OXFORD UNIV PRESS
OXFORD REVIEW OF ECONOMIC POLI	OXFORD UNIV PRESS
PARAGRAPH	OXFORD UNIV PRESS

Figure 9

X TITLE	O PUBLISHER
JOURNAL OF INDIAN PHILOSOPHY	KLUWER ACAD PUBS
JOURNAL OF INDO-EUROPEAN STUDI	INST FOR THE STUDY OF MAN
JOURNAL OF IRISH LITERATURE	PROCENIUM PRESS
JOURNAL OF JAPANESE STUDIES	P SOC FOR JAPANESE STUDIES
JOURNAL OF JEWISH STUDIES	P OXFORD CENTRE FOR POSTGRAD HEB
JOURNAL OF LATIN AMERICAN LORE	UNIV OF CALIF LOS ANGELES LATI
JOURNAL OF LITERARY SEMANTICS:	JULIUS GROOS VERLAG
JOURNAL OF MEDIEVAL AND RENAISS	Q DUKE UNIV PRESS
JOURNAL OF MEDIEVAL HISTORY	Q ELSEVIER SCIENCE PUBS
JOURNAL OF MILITARY HISTORY	P SOC FOR MILITARY HISTORY
JOURNAL OF MODERN GREEK STUDIE	JOHNS HOPKINS UNIV PRESS
JOURNAL OF MODERN LITERATURE	P TEMPLE UNIV
JOURNAL OF MUSIC THEORY	P YALE UNIV MUSIC SCH
JOURNAL OF MUSICOLOGICAL RESEA	GORDON & BREACH SCIENCE PUBS
JOURNAL OF MUSICOLOGY	Q UNIV OF CALIFORNIA PRESS
JOURNAL OF NARRATIVE TECHNIQUE	P EASTERN MICHIGAN UNIV SOC FOR
JOURNAL OF PACIFIC HISTORY	AUSTRALIAN NATL UNIV PACIFIC S

Figure 10

University Press, in the midst of an alphabetic array of titles all from *Art Index* among the Wilson Indexes (here AI under WI); and figure 12 shows the highlighted title *Greece and Rome*, also by Oxford University Press, in the midst of an alpha-

betic array of titles all from *Humanities Index* among the Wilson Indexes (here HU under WI). Again the *SET FILTER* command has been used to create a subset of all titles outside the JCR8892 domain in the database. This allows us to see a

ISSN	BLDSC	PCT C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
0951-0893	3732.462000	63		0.000			ED	84	370
0266-7215	3830.108000	36		0.000	SOCL	5910		39	61
0269-1191		47		0.000	EURO	2726		57	127
0959-6658	4196.303000	30	L	0.000				29	36
0017-3835		65	H	0.000	CLAS	1686	HU	88	454
0950-4117	4359.610000	34		0.000	LIBR	4137	LL	36	52
0022-4480		58	H	0.000				76	262
0022-5185		63	H	0.000	SYST	6126	HU	84	366
0024-2160		62	H	0.000	BIBL	1065	LL	83	347
0269-1205	5276.716000	45		0.000	LITE	4396		54	117
0026-4423		70	H	0.000	PHIL	5302	HU	96	856
0027-4224		68	H	0.000	MUSI	4991	HU	93	673
0029-3970		69	H	0.000	LITE	4407	HU	95	765
0142-6540	6320.597000	48	H	0.000	ART	786	AI	59	140
0143-6503		50		0.000			LP	63	163
0266-903X	6321.016950	38	S	0.000				43	73
0891-7248		16	H	0.000				6	3

CP ISSN	BLDSC	PCT C	JCR8892	MFL7	ED92	WI	HLD	HOLD
NE 0022-1791		51	H	PHIL	5291		65	175
US 0092-2323		52	H				66	182
US 0047-2514		51	H	EURO	2745		64	169
US 0095-6848		59	H	ASIA	868	HU	78	277
UK 0022-2097		58	H				75	246
US 0360-1927		50	H	FOLK	3092		63	160
GW 0341-7638		49	H	LING	4242		61	147
US 0047-2573		64	H	HIST	3563		86	409
NE 0304-4181		57	H	HIST	3564		74	244
US 0899-3718		63	H	MILI	4904	HU	84	364
US 0738-1727		39	H	HIST	3566		44	78
US 0022-281X		70	H	LITE	4393	HU	95	791
US 0022-2909		68	H	MUSI	4981		93	677
US 0141-1896		51	H				64	169
US 0277-9269		63	H	MUSI	4983	HU	84	373
US 0022-2925		61	H				81	322
AT 0022-3344		54	H	ASIA	884	HU	69	201

second aspect of what was suggested as our intent in the introduction: subject ranks characteristic of the sciences and social sciences applied to the arts and humanities within the domain of the Wilson Indexes.

Without establishing a principle of uniformity for the *Journal Citation Reports* domain of the file and using it with a technique of interchangeability that allows us to predict category rank from holding rank, any survey of major publish-

X TITLE	O PUBLISHER
Z NEW CRITERION	P FOUNDATION FOR CULTURAL REVIEW
Z NEW CRITERION	P FOUNDATION FOR CULTURAL REVIEW
Z NEW CRITERION	P FOUNDATION FOR CULTURAL REVIEW
OCTOBER	Q M I T PRESS
OEIL	P NOUVELLE SEDO
ORIENTAL ART	P ORIENTAL ART MAGAZINE
ORNAMENT	ORNAMENT
OULD-HOLLAND	STAATSUITGEVERIJ
OXFORD ART JOURNAL	OXFORD UNIV PRESS
PALESTINE EXPLORATION QUARTERL	P PALESTINE EXPLORATION FUND
PAN (OFFENBURG) > PAN SPEZIAL	VERLAG BURDA
PARAGONE	CASA EDITRICE G C SANSONE EDIT
PERSPECTA: THE YALE ARCHITECTU	P RIZZOLI INTL PUBL
PHILADELPHIA MUSEUM OF ARTS BU	P PHILADELPHIA MUSEUM OF ART
PHOTOGRAPHIC JOURNAL (LONDON,	ROYAL PHOTOGRAPHIC SOC
PRINCETON UNIVERSITY ART MUSEU	PRINCETON UNIV ART MUSEUM
PRINT	P R C PUBL

Figure 11

X TITLE	O PUBLISHER
EXPLICATOR	Q HELDREF PUBL
Z FILM COMMENT	P FILM SOC OF LINCOLN CENTER
Z FILM QUARTERLY	Q UNIV OF CALIFORNIA PRESS
FOLKLORE	P FOLKLORE SOC
FRENCH HISTORICAL STUDIES	P A A U P
FRENCH STUDIES: A QUARTERLY RE	P SOC FOR FRENCH STUDIES
GEORGIA REVIEW	P UNIV OF GEORGIA GEORGIA REV
GRAND STREET	P GRAND ST PUBL
GREECE AND ROME	Q OXFORD UNIV PRESS
GREEK, ROMAN AND BYZANTINE STU	P DUKE UNIV CLASSICAL STUDIES DE
HARVARD JOURNAL OF ASIATIC STU	P HARVARD-YENCHING INST
HARVARD THEOLOGICAL REVIEW	P HARVARD DIVINITY SCH
HELICON NINE: THE JOURNAL OF W	HELICON NINE
HEMINGWAY REVIEW	P HEMINGWAY SOC
HISPANIC AMERICAN HISTORICAL R	Q DUKE UNIV PRESS
Z HISPANIC AMERICAN HISTORICAL R	Q DUKE UNIV PRESS
HISPANIC REVIEW	P UNIV OF PENNSYLVANIA ROMANCE L

Figure 12

ers and presses with titles in subject categories from the arts and humanities will be incomplete; and any map of those territories will have the look of the New World as it appeared at the time of Thomas Jefferson. By employing the prin-

ciple of uniformity and the technique of interchangeability, however, any survey of major publishers and presses with titles in subject categories from the arts and humanities will be complete, and any map of those categories will look like something

ISSN	BLDSC	PCT C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
0734-0222	6082.993000	64		0.000	ART	781	AI	85	390
0734-0222	6082.993000	64		0.000	LITR	781	AI	85	390
0734-0222	6082.993000	64		0.000	NEWS	781	AI	85	390
0162-2870	6235.151490	63 H		0.000	ART	782	AI	84	358
0183-3014		59 H		0.000	ART	783	AI	77	265
0030-5278		61 H		0.000	ART	784	AI	81	321
0148-3897		51		0.000	CRAF	1922	AI	65	177
0030-672X		48 H		0.000	ART	785	AI	60	143
0142-6540	6320.597000	48 H		0.000	ART	786	AI	59	140
0031-0328		56		0.000	ARCL	663	AI	73	235
0720-423X		30		0.000			AI	30	39
0031-1650		44 H		0.000			AI	52	107
0079-0958		57 H		0.000	ARCT	695	AI	74	240
0031-7314		56 H		0.000	ARTM	825	AI	73	232
0031-8736		36		0.000			AI	39	62
0032-843X		47		0.000	ARTM	826	AI	57	127
0032-8510	6612.995000	70		0.000	PRIN	5578	AI	96	954

ISSN	BLDSC	PCT C	JCR8892	IF8892	MFL7	ED92	WI	HLD	HOLD
0014-4940	3842.153000	71 H		0.000	LITE	4392	HU	98	1394
0015-119X	3925.690000	71 H		0.000	FILM	2953	HU	98	1324
0015-1386		71 H		0.000	FILM	2957	HU	98	1294
0015-587X	3974.600000	58 H		0.000	FOLK	3087	HU	76	264
0016-1071		66 H		0.000	EURO	2725	HU	89	495
0016-1128		64 H		0.000			HU	85	384
0016-8386		68 H		0.000	LITR	4316	HU	93	695
0734-5496		58		0.000	LITR	4318	HU	76	264
0017-3835		65 H		0.000	CLAS	1686	HU	88	454
0017-3916		63 H		0.000	CLAS	1687	HU	84	368
0073-0548		66 H		0.000	ASIA	851	HU	89	497
0017-8160		68		0.000	RELI	5756	HU	93	677
0197-3371		50		0.000			HU	63	162
0276-3362		58		0.000	LITX	4450	HU	75	247
0018-2168		71 H		0.000	HIST	3542	HU	97	1013
0018-2168		71 H		0.000	LATI	3542	HU	97	1013
0018-2176		69 H		0.000	LATC	3877	HU	94	752

produced by modern methods of photogrammetry and remote sensing.

The introduction also suggested that the model could be used to establish a proportional extinct and time parameter for the journal literature. We can deter-

mine the proportional extinct for the initial file by using the *SET FILTER* command to create a subset of all titles from the Arts & Humanities edition of *Current Contents* (H under C), from the *Art Index* or the *Humanities Index* among the Wil-

son Indexes (AI or HU under WI), or from broad subject listings such as Art or Literary Reviews or Philosophy in *Magazines for Libraries* (ART or LITR or PHIL under MFL7). There are about 2,750 of these titles among the approximate 13,000 titles that we mentioned in the introduction, so the proportional extinct of artistic and humanistic scholarship in the journal literature of the initial file could be said to amount to about 21%.

The domain of the 10,000 periodicals comprising the table of contents database *Inside Information* published by BLDSC overlaps the initial file by about half, but the 5,000 titles outside the domain of the initial file have no subject codes. We can account for 150 arts and humanities journals in the domain that *Inside Information* shares with the original file, however; so if BLDSC's estimate of 5% in the literature promoting the database as part of EBSCO CASIAS is correct, then there are 350 additional arts and humanities titles left to be accounted for in the expanded file. That would bring the total to 3,100 titles among the approximately 18,000 titles in the expanded file, so the proportional extinct of artistic and humanistic scholarship in the journal literature of the expanded file could be said to amount to about 17%.

We can establish the time parameter required for a uniform file from the domain of diachronous citations compiled over a five-year period on empirical grounds, by verifying the existence of what Burrell (1985a) would call a "core collection": 70% of the holdings are present in 30% of the titles, so there is a 70/30 Rule associated with the core of the model. The core also can be verified in terms of a percentile expression of subject category rank (using, as a threshold, titles with a subject rank of 55 or more in the expanded file). If we do this, we can see that half of the total percentile expressions of subject category rank (centiles) are present in the 70/30 core.

Finally, and perhaps most importantly, the relational database model, because it is diachronous, is an accurate representation of what Bensman would call "the cumulative advantage process," and

so it can be used to suggest realistic ways to manage an academic journal collection. To facilitate this, the publisher field has been normalized in the expanded file, the authority work being based on *Ulrichs Plus* (with some abbreviations and subdivision rotations because of the space limitations), and a code introduced (under O) to distinguish publishers and presses with up to five core titles (P) from publishers and presses with six or more core titles (Q). There are only 115 major publishers and presses, such as Elsevier and Oxford, each with six or more core titles; and yet they are responsible for an entire quartile (thus the Q) of all the percentile expressions of subject category rank or centiles. These major publishers and presses that play such a prominent role in the model are listed—together with number of core titles, number of file titles exclusive of core titles, and average for all titles—in table 1.

As an example, if we estimate the average cost of a title in the expanded file at \$150 (using a figure derived from statistics reported by the university libraries at Louisiana State, Colorado, and Ohio State in a recent edition of *American Library Directory*); then the core titles from the major publishers and presses (coded Q in the file) would cost \$373,500; and those from the minor publishers and presses (coded P), \$442,650. The file titles exclusive of core titles from the major publishers and presses would cost \$367,950; and those from minor publishers and presses, \$249,150. The file titles from the remaining publishers and presses of the model would cost \$1,231,050. The average centile for the 2,490 core titles among the Q publishers is 75; and for the 2,951 among the P publishers, 68. The average centile for the 2,453 file titles exclusive of core titles among the Q publishers is 33; and the average for the 1,661 among the P publishers, 32. The average centile for the 8,207 file titles among the remaining publishers is 28.

An academic library would want to verify the distinction between two core titles in such an example, one from a major publisher or press and the other from a minor publisher or press, it might con-

TABLE 1
MAJOR PUBLISHERS AND PRESSES

Publisher	Core Titles	File Titles	Avg. Centile	Publisher	Core Titles	File Titles	Avg. Centile
1. Ablex Publ.	8	5	58	52. Hachette Magazines	11	3	61
2. Academic Pr.	117	48	65	53. Haworth Pr.	21	57	47
3. Academic Pr. (London)	40	41	53	54. Heldref Publ.	28	14	54
4. Amer. Chemical Soc.	25	7	76	55. Human Sciences Press	10	24	40
5. Amer. Counseling Assn.	9	4	52	56. I E E E Computer Soc. Pr.	8	22	45
6. Amer. Geophysical Union	11	9	60	57. I O P Publ. (Inst. of Physics)	15	11	56
7. Amer. Heart Assn.	7	1	82	58. I R L Press	6	5	64
8. Amer. Inst. of Aeronautics & Ast.	6	4	61	59. Inspec, I E E	9	4	58
9. Amer. Inst. of Physics	27	20	58	60. Inst. of Electrical & Electron	60	60	57
10. Amer. Libr. Assn.	9	1	69	61. J. B. Lippincott	31	10	66
11. Amer. Mathematical Soc.	12	3	62	62. John Wiley & Sons	29	67	44
12. Amer. Medical Assn.	11	0	89	63. John Wiley & Sons (N.Y.)	86	36	64
13. Amer. Meteorological Soc.	8	5	60	64. Johns Hopkins Univ. Pr.	20	8	60
14. Amer. Psychological Assn.	24	2	82	65. Kluwer Acad. Pubs.	49	94	46
15. Amer. Soc. for Microbiology	10	3	81	66. Lawrence Erlbaum Assoc.	8	15	48
16. Amer. Soc. of Civil Engineers	15	10	52	67. M. E. Sharpe	6	20	30
17. Amer. Soc. of Mechan. Enginee.	12	13	48	68. M I T Press	13	8	64
18. Amer. Sociological Assn.	6	0	89	69. Marcell Dekker	22	83	38
19. Annual Reviews	28	1	93	70. Mary Ann Liebert	8	21	46
20. Aspen Pubs.	16	7	61	71. McGraw-Hill Publ.	10	7	55
21. Assn. for Comp. Mach.	16	3	73	72. Medical Economics Publ.	6	0	67
22. B M S Publ.	14	0	83	73. Mosby-Year Book	23	11	66
23. B P I Communications	6	2	60	74. Munksgaard Intl. Publ.	31	39	53
24. Basil Blackwell	39	38	55	75. Natl. Coun. of Teach. of Eng.	6	2	60
25. Benjamin Franklin Literary & M	6	0	66	76. Natl. Resrch. Coun. of Canada	7	7	54
26. Birkhaeuser Verlag	7	12	50	77. North-Holland	6	22	43
27. Blackwell Scientific Publ.	63	56	56	78. Oxford Univ. Pr.	49	51	52
28. Butterworth-Heinemann	28	49	45	79. Oxford Univ Pr. (N.Y.)	6	2	69
29. Butterworth-Heinmann (Stone)	8	9	54	80. Pennsylvania State Univ. Pr.	6	3	57
30. C R C Press	15	9	68	81. Penton Publ.	16	2	61
31. C S I R O (Commonwealth Sci.)	8	7	56	82. Pergamon Pr. (Tarrytown)	161	149	56
32. Cahners Publ. (Newton)	8	8	43	83. Petersen Publ.	9	8	48
33. Cambridge Univ. Pr.	56	46	56	84. Pierian Pr.	8	0	65
34. Carfax Publ.	12	44	40	85. Plenum Publ.	47	59	51
35. Chapman & Hall	10	13	46	86. Raven Pr.	22	44	45
36. Churchill Livingstone Med.	7	31	36	87. Rodale Pr.	6	4	58
37. Conde Nast Publ.	10	0	71	88. Routledge	6	9	52
38. Coun. for Exceptional Children	6	2	66	89. Royal Soc. of Chemistry	17	13	56
39. Duke Univ. Pr.	11	2	65	90. S. Karger	32	87	42
40. E J Brill	6	12	44	91. Sage Publ.	45	36	53
41. Elsevier Science Pubs.	159	180	51	92. Scandinavian Univ. Pr.	16	25	48
42. Elsevier Science Pubs. (Barking)	27	60	45	93. Scholars Pr.	7	2	61
43. Elsevier Science Pubs (N.Y.)	32	38	53	94. Scholastic	10	12	47
44. Elsevier Sci. Pubs. Irela.	23	16	56	95. Slack	11	6	59
45. Elsevier Sequoia	26	19	57	96. Soc. for Indust. & Applied M	9	3	68
46. Gauthier-Villars	9	18	47	97. Springer-Verlag	95	83	54
47. Georg Thieme Verlag	7	32	35	98. Springer-Verlag (N.Y.)	40	85	47
48. Gordon & Breach Sci. Pubs.	18	38	44	99. T & F (Bristol)	6	0	69
49. Guilford Pub.	7	8	53	100. Taylor & Francis	25	29	51
50. Gustav Fischer Verlag	8	12	42	101. Time	7	2	64
51. H. W. Wilson	15	1	69	102. Times Mirror Magazines	9	1	67

TABLE 1 (CONTINUED FROM PAGE 75)

Publisher	Core Titles	File Titles	Avg. Centile	Publisher	Core Titles	File Titles	Avg. Centile
103. U M I	6	1	64	110. V C H Verlags- gesellschaft	14	22	45
104. U. S. Labor Dept. Labor Statistic	6	0	66	111. W. B. Saunders	51	36	57
105. Univ. of Calif. Pr.	17	7	64	112. Walter De Grueter	9	22	45
106. Univ. of Chicago Pr.	43	9	74	113. Warren, Gorham & Lamont	8	13	42
107. Univ. of Ill. Pr.	7	2	63	114. Williams & Wilkins	48	17	69
108. Univ. of N.C. Pr.	6	0	69	115. World Health Org.	7	7	51
109. Univ. of Wisc. Pr.	6	3	61				

sider during any review process; but the model suggests it could anticipate a small but significant distinction, which on average would be 7%. And in similar fashion, a research library would want to verify the distinction between two file titles exclusive of core titles, one from a major or minor publisher or press and the other from one of the remaining publishers and presses, it might consider during any review process; but the model suggests it, too, could anticipate a small but significant distinction, which on average would be between 4% and 5%. The cumulative advantage process of distinguishing major and minor publishers and presses thus permits us to establish realistic economic dimensions for and anticipate potential financial problems in both academic and research journal collections. Estimates associated with the model suggest that an academic library should be prepared to spend a little more than \$800,000 to maintain a core journal collection unless it is willing to make the choices described, and that a research library should be prepared to spend well over \$1,800,000 to maintain a complete collection unless it is willing to make the choices described.

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Notes on Research

Humanities Scholarship and the Research Library

Ross Atkinson

The purpose of this paper is to provide a simple definition of humanities scholarship from the library perspective, and then to comment on the ability of the research library to support such scholarship. There is no aspiration to present a developed theory or argument; rather the intention is only to draw attention to some current issues and relationships that might warrant further discussion.

To what extent will research libraries remain able to support humanities scholarship in the immediate future? In order to answer this question, we need first a quick definition of humanities scholarship from the library perspective (on previous definitions, see Stone 1982, 293-94). Because it is the function of the library to provide access to that information needed by local users to do their work, and because the primary unit of information (at least from the library's point of view) is the publication, we should look to the publication as a form for our definition.

Let us consider, therefore, scholarly publications, of the type produced by the faculty users of research libraries; one can draw a single, simple distinction in such publications between (a) reference and (b) citation. Reference is what the publication "does," i.e., the verbal pointing to concepts; the referent is what the text is "about."

Traditionally, the term reference designates the relation oriented from a semiotic

entity toward a non-semiotic entity (the referent) belonging, for instance, to the extra-linguistic context. (Greimas and Courtes 1982, 259)

Citation, on the other hand, is a very specialized form of reference: it is a verbal pointer to another publication—or, pushing that concept a bit further, let us say it is a pointer to another symbolic artifact, i.e., to another human product intended to convey information.

Applying this simple distinction between the general reference and the specific citation, let us divide all scholarly publication into two gigantic sets. The first set, which we will call scientific publication, consists of documents in which the references and the citations are to two different object categories: the reference is to some physical or social ("extra-linguistic") reality or phenomenon, while the citation is to documentation (which, no doubt, refers in turn to that same physical or social reality). The author intends that

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the work cited be looked "through"—to the physical or social reality to which it refers. The other huge set of scholarly publications, which we will call humanities publication, consists of materials in which the primary reference is, very generally speaking, to the citation; or more exactly, the reference and the citation are to fundamentally the same category of objects, i.e., to particular symbolic artifacts. The objective of the publication is to look not only "through" the texts cited (i.e., what they refer to), but also, and more importantly, "at" them. (On the dichotomy of "through" and "at," see Lanham 1993, 55–96.) As librarians, then, let us define the humanities as that scholarship, the constituent documentation of which is characterized by a general coincidence of the reference and the citation, while the sciences (both natural and behavioral) are those forms of scholarship producing documentation that exhibits a difference or disparity or dissonance between the reference and the citation.

Having made this simple distinction, what can we say briefly about humanities scholarship—and the ability of research libraries to support it?

AUTHORITY

A citation refers to an artifact produced or created by someone—and it is at least partially upon the relationship between the artifact and the individual who produced it that the identification, description, and evaluation of the artifact in humanities scholarship is based. Scholarship characterized by the coincidence of the reference and the citation is therefore greatly concerned with, and highly dependent upon, bibliographical authority. How individual works relate to each other, how they relate to their authors—who wrote (or created) what, and who wrote what else—these are issues that are central to all humanities scholarship.

One of the most difficult—and certainly one of the most expensive—services provided by the modern research library is appropriately authority control, the primary result of which is the production of catalogs that do not simply list holdings,

but rather consciously and painstakingly establish relationships among those holdings. The main beneficiary of such work in research libraries is humanities scholarship (see Wiberley 1983, 431–32). (A recent study has revealed that fully half of the subject search terms used by a test group of humanities scholars referred to individuals or characters [Bates 1993]). Authority control has come to be recognized as a cornerstone of information services, and the need to maintain or increase it, even in (or especially in) times of declining technical services budgets, is becoming broadly accepted by research libraries.

There can be little doubt that the research library will fight hard, therefore, to continue to provide authority control, even though few scholars or institutional administrators (or librarians) understand much about it. More problematic, however, is the fact that we can expect a similar lack of understanding about the nature and importance of authority control on the part of many of the technicians who are now designing some of our online services. Network designers, many of whom have been nourished primarily on a diet of scientific publication, may well assume that, for example, the automatic indexing of full text databases will provide sufficient access for future scholarship. Those of us responsible for library technical services understand that authority work of some kind must be done to inform prior to its permanent insertion into the database, if its relationship to other items in that database is to be effectively established. Without that preliminary work, no amount of automatic indexing will track or identify that relationship with any precision. In the interests especially of humanities scholarship, therefore, libraries must persist in their demands that the process of authority control be transferred to the online environment. (Peter Graham, in a presentation to the Cornell University Library on 16 March 1994, noted that authority control may be one of the major contributions libraries will make to the design of network services.)

Another aspect of bibliographical authority, in which the library must be

willing to play an increasing role, is authentication: determining that the work made available to the reader matches as closely as possible the text originally intended by the author. This is an old responsibility of libraries, extending back to antiquity, and one that must now be revitalized. In the online era, changes can be made to works with a few keystrokes; the research library must be prepared to archive materials in an (as nearly as can be determined) authoritative form, therefore, so that users will always have access to a stable and authentic text (see Atkinson 1990).

NEUTRALITY

Scholarship in which the reference and the citation are to the same objects, i.e., to symbolic artifacts, is driven by a multiplicity of perspectives and motives. Such scholarship is indeed humanistic—in the sense that it respects and encourages individuality and diversity. No single system of norms governs either how the signs, of which symbolic artifacts are composed, are interpreted and evaluated by the scholar, or which artifacts are selected by the scholar for such interpretation and evaluation. In this sense, then, Thomas Kuhn's assertion is valid: the sciences operate generally under the aegis of a single paradigm, while nonscientific scholarship does not (Kuhn 1970; note especially the remarks in the postscript, pp. 208–9). There is no “normal humanities” equivalent to “normal science”: there is no single world view, no universally accepted network of truths that all humanists are working to illuminate and validate. Humanities scholarship assigns different values or qualities to different symbolic artifacts, and much of the work of the humanities consists of defining and redefining those values and qualities. There is no real linear progress. We probably do not really know “more” about Shakespeare's works—in the same way that we know more about, say, DNA—than we knew 20 years ago. What Shakespeare scholarship has provided us that we did not have 20 years ago are new perspectives more consistent with current values and sensibilities from

which to assess the quality and wisdom of Shakespeare's works.

The humanities, therefore, while admittedly operating within certain parameters established by tradition and fashion, nevertheless generally subscribe to a kind of methodological neutrality, in which a plurality of values can be used to evaluate symbolic artifacts. The research library, at least in recent decades, has done much to support this neutrality. Perhaps the most important step in this process has been the transfer of collection building responsibility from the faculty to the library: this has led to the development of collections that reflect a range of methods, rather than only those used or favored by the faculty currently active at the institution. As the purchasing power of our budgets diminishes, however, and we shift more to user-driven collection building, we must expect our ability to provide this representation of multiple perspectives gradually to decline. It remains to be seen, moreover, whether the advent of electronic, networked publication will provide new opportunities for the publication of, and access to, a diversity of perspectives.

While research libraries have (so far) managed to respond to the methodological neutrality of the humanities, another kind of neutrality,—let us call it object neutrality—is much more problematic. By object neutrality I mean the increasing acceptance among humanities scholars that any consciously created human product, any symbolic artifact, is an acceptable object of study. Partially a manifestation of the retreat from the canon (Czyzk 1993), this inability and unwillingness on the part of some humanities scholars—perhaps an increasing majority of them (Shaw 1994, 270)—to agree upon privileging a specific set of publications has led to the general position that virtually every symbolic creation must be considered equally worthy of study. Because any publication or human creation can have research potential, humanities scholars—and the information service professionals who support them—have become increasingly unwilling and incapable of coming to terms with what should be collected and maintained, and what should not.

This would be less of a problem if the humanities, like the sciences, were capable of endorsing the withdrawal of older secondary materials; or if the humanities were able to summarize effectively earlier publications. But the humanities can do neither. Older secondary materials cannot be discarded because, as we know so well in research libraries, the second a critical work is no longer in fashion, it becomes as valuable—or more valuable—as a primary work, to be used in the study of the history of the field. For this reason alone, history remains probably the most expensive “subject” the library supports—probably much more expensive in the long term than the notoriously costly natural sciences.

Summary is also alien to much humanities scholarship (see Sweetland 1992, 783). Unlike the sciences, which are able to summarize their findings in textbooks so that the original publications need no longer be regularly consulted, the humanities generally scorn synopsis. This is, again, an understandable quality of a scholarship characterized by the coincidence of reference and citation, and because of the need of the humanities to look “at,” rather than only “through” the text. The focus of the humanities is not upon what the text refers to. (That is more the objective of the sciences, which is the reason the sciences are at ease with summary.) The focus of humanities scholarship is rather upon the text referring—how the text refers, and what must be done to make the text refer. Each scholar, each student, each generation of humanists assumes anew the responsibility for this “working” of the text, to demonstrate its reference repeatedly—and the result of such scholarship is to create variant references over time, that reflect in turn the variant values of the humanities scholars and their times. In order for such work to be done, therefore, the full, authorized text must be maintained in a stable form indefinitely.

Fair enough. Research libraries can and do meticulously provide that essential archival service—but this obviously cannot be done for every text ever produced. Because summary is not an option, relatively stringent selection is unavoidable; but the humanities, mainly by virtue of

their methodological and object neutrality, are seldom able to supply a broadly accepted, coherent scale of values upon which to base such selection. This is, of course, especially critical for preservation selection, which, like authentication, is an ancient function of libraries that is becoming ever more vital to scholarship. Selection (what to acquire initially, and what to retain) has always been a fundamental service of libraries—and all of our new and sophisticated information technology does not now, nor will it ever, relieve us of that responsibility. Certainly digitization opens many opportunities for us to preserve more materials and to enhance access, but even digitization provides us with neither the right nor probably even the capacity to assemble and retain everything. The undisciplined, unsystematic collection and retention of materials will necessarily result in a bibliographical congestion that will ultimately retard some branches of humanities scholarship. (On the problem of the overabundance of scholarly information, see, for example, Perrow 1989, 29–42; and Weintraub 1980, 38.) The desperate urge to hoard and safeguard every graphic utterance because we cannot predict with any precision its future utility must be resisted. The jettisoning of information—disciplinary “forgetting”—must therefore be not only accepted, but endorsed and systematized by humanities scholarship—if for no other reason than we will necessarily lose large quantities of information in the future regardless of what we do. Even if it becomes technically possible some day to retain every human utterance, such a practice will doubtless never be economically justifiable, even if every research library in the country cooperated in the effort. That being the case, the only question remaining is whether we want to sit back and observe the haphazard retention and loss of humanities information, or whether we are willing to make decisions and take control of what future humanities scholars receive from the past.

DERIVATION

Scholarship characterized by the coincidence of the reference and the citation is not highly valued by society—or at least

not nearly to the degree that society values either the products of the sciences or even the creative works that serve as the objects of the humanities. Humanities scholarship is not practiced to any extent outside of the academy. This is essential and understandable in a preponderantly capitalist society which views all serious activity from the perspective of the marketplace. While the educational commodity of the humanities (i.e., classroom instruction) remains accepted and valued, advanced humanities scholarship presents a much more difficult marketing challenge. Formal publication is troublesome for humanities scholarship, because the direct market demand for such scholarship is no doubt often insufficient to support the costs of production.

How then is specialized humanities publication possible? A major and indispensable role in this process is played, of course, by the university press—but even the (sometimes) subsidized university press cannot publish scholarship in a totally market-driven economy when there is insufficient demand. Here is where research libraries enter the equation: it has been and will continue to be a primary responsibility of research libraries to serve as an artificial market for humanities scholarship. When a university (or major society) press through its editorial process decides to publish a work of humanities scholarship, the press can count on the fact that most research libraries will purchase that work, regardless of its content. The library will make this decision, not because of a demonstrable demand, but rather because the library is expected by convention to hold precisely this material. The difficulty mentioned earlier of predicting future utility works in this case very much to the advantage of humanities scholarship. If the library could accurately forecast use, and knew for certain that an item would never be used, then probably no such purchase would take place—but the library has no such ability. It is also well understood that the library will sometimes effectively create user demand for materials by adding those materials to the collection.

One reason society may place a low value on the humanities is that scholarship

characterized by the coincidence of reference and citation is conspicuously derivative. The humanities always speaks of things already spoken; it says things about things already said.

More often than not, really important scholarship in the humanities does not consist in the discovery of something entirely new but in presenting what is already there in a pattern of higher significance, so that the “map of knowledge” is substantially changed. (Fabian 1990, 19)

This periodically frustrates the humanities; it causes feelings of inferiority, which sometimes precipitate efforts to escape this curse of derivation by trying to replace the object studied with the study itself. Some of these efforts, notably some of the recent work in literary theory, have tended to alienate society at large still further from humanities scholarship.

While such a concern over derivation is understandable, it is also ultimately unwarranted. Humanities scholarship, even in its most advanced form, always has a direct pedagogical or didactic function; the inseparable link between the humanities and the academy, therefore, makes complete sense. The purpose of the humanities remains to help people understand and apply symbolic artifacts. In ways very different from the sciences, therefore, the humanities are a true service, and the humanities scholar is always, necessarily a public servant.

Which leads to my final point: What is bibliography—what are library and information services—if not reference to the citation? Libraries, all libraries, do humanities work. This work is admittedly in some of its forms at a rather more rudimentary level, to be sure, than that performed by humanities scholars; but the difference between the work of a librarian, who maneuvers a user into a position to work with a particular set of publications, and the work of a humanities scholar, who writes an essay on those publications so that readers can better understand them—that is a difference of level or sophistication, but it is not a difference of kind. They are the same fundamental public services.

The future of the humanities and of research librarianship should therefore

necessarily lie in the direction of much greater coordination and ultimately fusion. As we enter the age of information, humanists need to learn more about the discipline of bibliography—the study of the record. And librarians need to learn more about the rich theoretical work of the humanities and its application to bibliography, instead of trying vainly to pattern so much of their work on that of the (social) sciences.

In a way, therefore, the question posed at the outset—about the extent to which the research library will continue to be able to support the humanities—is an unnecessary one. The library is the humanities, or at least an integral component thereof. The humanities will not rise or fall because of library support; rather the fortunes of the humanities and the library are so inextricably interconnected that their future is fundamentally one.

And this includes, I hasten to add, all aspects of librarianship—including especially science librarianship. The physics librarian is not a physicist; she is, without question, a humanist. Her object is not physical reality but rather the citation. The physics scholars at her institution depend upon her as a humanist. The sciences depend upon the humanities, without which the communication of scientific scholarship cannot take place. Society depends upon the humanities, because all real progress, all communal enterprise, rests ultimately upon the maintenance, understanding, and application of the record, of the symbolic artifact. That is indeed the indispensable public service that the humanities, in all of its guises—including especially the bibliographical one—will continue to provide, regardless of any changes that may occur in information technology.

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Notes on Operations

AACR2R Use in Canadian Libraries and Implications for Bibliographic Databases

Lynne C. Howarth and Jean Weihs

With the greater potential to derive and share bibliographic records from machine-readable (MARC) format databases effected through, first the major bibliographic utilities, and more recently, the expansion in local, regional, national, and international networks, concerns for the quality and integrity of cataloging copy have magnified. Little empirical research has been conducted, particularly in the Canadian library context, into the application of codes and standards to records destined for utility or network databases. The present research examined data from a 1992 survey for purposes of establishing a baseline profile of various types and sizes of libraries in Canada contributing to shared databases, and determining the nature and extent of AACR2R use for creating original records for book and nonbook materials destined for bibliographic utilities or local, regional, or special purpose networks. Analysis of data suggested that smaller libraries with collection sizes of less than 100,000 volumes were less likely than larger institutions to be record contributors. Those cataloging agencies that were contributing potentially derivable copy tended to use AACR2R in the majority of cases, perhaps suggesting that the quality of original records being created by self-selected respondents to the survey were largely to current standard.

The development of the Machine-Readable Cataloging (MARC) format in the late 1960s initiated a breakthrough in the electronic exchange of bibliographic records, and was a key element in the formation of library networks and subsequently of bibliographic utilities. The potential to derive and share cataloging copy from MARC format databases en-

hanced productivity and workflow, but raised concerns about the quality of records, and particularly original cataloging, being contributed by member libraries. While some bibliographic utilities set minimum standards for cataloging, others focused on creating as large files as possible as quickly as possible (Reynolds 1985). The resulting "dirty databases" were char-

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acterized by records that were incomplete, that utilized standards pre-dating current cataloging codes, that contained incorrect punctuation or typographical errors, or that reflected some local or non-standard practice.

Across time, however, the four major bibliographic utilities—Information Systems Management (ISM) Library Information Services (formerly Utlas International); the OCLC Online Computer Library Center, Inc.; Western Library Network (WLN); and the Research Library Groups's Research Libraries Information Network (RLIN)—have worked to improve the quality of their respective databases, recognizing the need for at least a minimum standard for original cataloging records. That standard would generally be understood to include use of the *Anglo-American Cataloguing Rules*, 2nd ed., 1988 revision (AACR2R) for descriptive cataloging and for choice and form of access points, the MARC format appropriate to the nature of the record and to the type of material, and adherence to subject headings lists, and classification schemes accommodated in MARC record coding.

With greater access to local online catalogs via the Internet or direct dial-in, the potential for, and availability of, cataloging copy have increased substantially. As with the growth in bibliographic utility databases, concerns about the quality of records derived from local online catalogs have also been raised. The lessons learned from having to clean up so-called "dirty (utility) databases" have had to be repeated for a number of local systems databases, and also in situations where formerly independent online catalogs have been networked.

The greater the sharing and merging of bibliographic data, the greater the recognition of the need for more uniform interpretation and application of cataloging codes and standards. But even as developments in computer-based technologies are facilitating the evolution of universal bibliographic control (and access), local systems may be throwing up proprietary roadblocks in the form of non-standard data structures (does not support

MARC record formats or is only "MARC compatible"), truncated or inadequate screen displays, or limited functionality (e.g., poor or no provision for authority control and references). While there may be some general agreement on the desirability of adhering to bibliographic codes and standards, there may also be systems-related variables inhibiting or preventing such uniform application—a problem that requires the joint intervention of systems designers, vendors, and bibliographic specialists to achieve resolution.

BACKGROUND TO THE STUDY

The body of library and information science research literature concerning online catalog screen displays, and system functionality and use, is extensive and wide-ranging. Empirical studies concerning the application of cataloging codes and standards to records destined for local online catalogs, or for external networks or bibliographic databases, are comparatively less numerous, particularly as regards the Canadian library context. There are several recent, notable papers that have focused on areas relating to bibliographic description, access points, and implications of their respective application for computer-based systems. These include research into: bibliographic relationships used in cataloging and their implications for systems design (Tillett 1991a; 1991b; 1992a; 1992b); bibliographic data elements and their function in USMARC formats (Leazer 1992); variations in personal names and implications for authority control in automated catalogs (Weintraub 1991); and differences in personal name access points in OCLC records (Taylor 1992). A search of literature specific to the Canadian library context, and related to bibliographic records or to computerized catalogs reveals: annual surveys of mainframe and microcomputer-based integrated online library systems (IOLS) currently supported in Canadian libraries (Merilees 1993) and in school libraries (Lighthall 1993), respectively; and technical documents from ISM Library Information Systems, particularly MARC bibliographic and authority manu-

als specific to the Cataloging Support Services (CATSS) database, and the recently issued *ISM Minimum Standards for Original Bibliographic Records in CATSS* (1994). The latter lists fields that should be coded, if applicable to the item being cataloged, for the seven types of material provided for in MARC bibliographic formats.

But while descriptive literature concerning IOLS installations and MARC record content in ISM CATSS is readily available, the researchers were unable to identify any empirical studies of Canadian libraries linking the application of AACR2R to bibliographic records destined for local (in-house or external) networks or for bibliographic utility databases. While such research is geographically limited in its scope, the geographically *unlimited* nature of exchange of bibliographic records suggests that the quality of cataloging being contributed by Canadian libraries to utilities or to local, regional, or special-purpose networks will impact wherever copy is derived, and underlines the need for empirical study of the application of codes and standards.

METHODOLOGY

In a previous article (Howarth and Weihs 1994), we summarized the methodology for, and findings from, a 1992 national (Canadian) survey exploring the dissemination and use of AACR2R. The present research focused on those data that were derived from that survey specifically to address the question of the nature and extent of AACR2R use by a variety of types and sizes of libraries that also contributed catalog records to bibliographic utility databases or to local (in-house or external) networks. While it would have been interesting to consider standards used for cataloging in exclusively local online catalogs (with no access from outside the institution), the researchers were primarily concerned with the nature of records that, through contribution to utility or network databases, had the potential to be derived by other libraries.

The questionnaire asked respondents (identified by type of library and size of

collection in numbers of volumes) to indicate the bibliographic utility (Utlas, OCLC, RLIN, or WLN) and/or network (local, regional, special purpose) to which they contributed bibliographic records. Two additional choices were provided, namely, "Dobis" and "Not applicable." In 1992 the National Library of Canada, a number of government and special libraries, and a few college and university libraries were using the Dobis IOLS as either a standalone or networked system. The "Not applicable" was intended for respondents who, while they might have standalone, local systems, and might *derive* copy from a cataloging support system, did not *contribute* bibliographic records to a utility or network. Respondents other than "Not applicable" could circle as many selections as applied. The questionnaire also listed "Books" and ten categories of nonbook materials while asking respondents to indicate which code (AACR2R; AACR2-1978; AACR1-1967; "other") was used for those items collected and cataloged.

Data from questions concerning type and size of library, contribution of bibliographic records to utility or network databases, and choice of cataloging code used for various formats of material were analyzed (using PC-SAS) to obtain not only some picture of the potential "quality" of derivable bibliographic records for different media, but also to develop a profile of the types and sizes of libraries in Canada that were contributing cataloging to various utilities and networks. The exploration and determination of "quality" was limited by the fact that respondents were not asked about levels of cataloging (first to third), extent of the records (brief or full), application of codes to specified bibliographic elements (description; access points) or to particular kinds of records (bibliographic; authority), or use of and adherence to prescribed MARC formats and data structures. The survey was targeted as a high-level study, employing broad, general questions for obtaining an initial overview of the dissemination and use of AACR2R in Canadian libraries. As exploratory, hypothesis-generating research, the study could provide a sense of

the potential for quality of shared cataloging only to the extent that one could assume that application of AACR2R assured some degree of currency, consistency, and uniformity.

FINDINGS

A total of 336 replies were received from self-selected respondents to a survey circulated through the National Library of Canada's *National Library News*. As a previous article has summarized (Howarth and Weihs 1994), responses came from across Canada, from a variety of types and sizes of libraries, from some commercial cataloging suppliers, from both Francophone and Anglophone institutions, and from catalogers creating original records for a variety of book and nonbook formats. Of 336 returns, 334 surveys were completed inclusive of questions concerning "sets of codes or guidelines followed when creating a new bibliographic record" (question 5 of the survey instrument) and "to which bibliographic utility or network (in-house or external) does your library contribute bibliographic records" (question 10). Data were analyzed and findings were grouped and discussed according to record contributor profile, and use of AACR2R or other for contributed records. When the survey was distributed, the Canadian bibliographic utility now known as ISM Library Information Systems existed as Utlas International. Preserving the integrity of replies to the questionnaire, the following two sections refer to the former "Utlas" rather than to the current ISM Library Information Systems.

PROFILE OF RECORD CONTRIBUTORS

Figure 1 presents the percentage of respondents contributing records to a bibliographic utility or network, ranked from highest to lowest. Given that more than one selection could be circled, and based on an overall total of 391 responses, 39.1% ($N = 153$) did not contribute to any utility or network, followed by 23.8% ($N = 93$) contributing to a local, regional or special purpose network (labeled "Local" in figure 1).

Closely behind were Utlas subscribers at 22.8% ($N = 89$), Dobis libraries at 10% ($N = 39$), and the other three bibliographic utilities at 3.1% (OCLC; $N = 12$), 1% (RLIN; $N = 4$), and 0.3% (WLN; $N = 1$).

The relative strength of commitment to Utlas and to Dobis, in contrast to American-based utilities, was not surprising given the Canadian library context. One university library with a collection size of over one million volumes contributed to a network, to Dobis, and to every bibliographic utility except WLN. Eighty-nine respondents circled Utlas as a choice; of these, 54 (60.67%) contributed to Utlas *exclusively*, with the remaining 35 (39.33%) contributing also to one or more of OCLC, RLIN, Dobis, or a local network, but not to WLN. We began with a profile by type of library and size of collection of Canadian agencies contributing to Utlas (table 1). Almost half of those (45.45%; $N = 40$) represented so-called "smaller" libraries with collection sizes of fewer than 100,000 volumes. Largest representation by type of library came from government agencies (28.41%; $N = 25$), with university libraries following closely

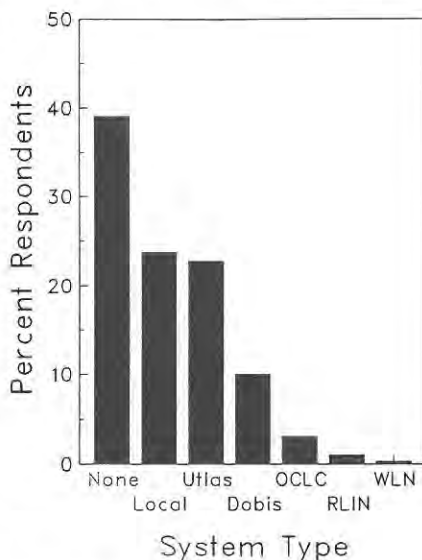


Figure 1. Percentage Contributing to Bibliographic Utilities or Networks

TABLE 1
 TYPES AND SIZES OF LIBRARIES CONTRIBUTING
 TO THE CANADIAN BIBLIOGRAPHIC UTILITY (UTLAS) [NOW ISM]

Library Type	Collection Size (No. of Volumes)				Total by Library Type
	< 100,000 Volumes	100,000 to 500,000 Volumes	500,000 to 1,000,000 Volumes	> 1,000,000 Volumes	
College					
Frequency	3	2	0	0	5
Percentage	3.41	2.27	0.00	0.00	5.68
Row percentage	60.00	40.00	0.00	0.00	
Column percentage	7.50	7.41	0.00	0.00	
University					
Frequency	6	7	1	9	23
Percentage	6.28	7.95	1.14	10.23	26.14
Row percentage	26.09	30.43	4.35	39.13	
Column percentage	15.00	25.93	16.67	60.00	
Public					
Frequency	0	8	2	5	15
Percentage	0.00	9.09	2.27	5.68	17.05
Row percentage	0.00	53.33	13.33	33.33	
Column percentage	0.00	29.63	33.33	33.33	
School					
Frequency	3	0	1	0	4
Percentage	3.41	0.00	1.14	0.00	4.55
Row percentage	75.00	0.00	25.00	0.00	
Column percentage	7.50	0.00	16.67	0.00	
Government					
Frequency	17	6	1	1	25
Percentage	19.32	6.82	1.14	1.14	28.41
Row percentage	68.00	24.00	4.00	4.00	
Column percentage	42.50	22.22	16.67	16.67	
Special					
Frequency	10	2	0	0	12
Percentage	11.36	2.27	0.00	0.00	13.64
Row percentage	83.33	16.67	0.00	0.00	
Column percentage	25.00	7.41	0.00	0.00	
Other					
Frequency	1	2	1	0	4
Percentage	1.14	2.27	1.14	0.00	4.55
Row percentage	25.00	50.00	25.00	0.00	
Column percentage	2.50	7.41	16.67	0.00	
Total	40	27	6	15	88
	45.45	30.68	6.82	17.07	100.00

Note: Frequency missing = 1 (one "other" [commercial agency] had no response for collection size).

behind (26.14%; $N = 23$), and public libraries ranking third (17.05%; $N = 15$). The contribution of records to Utlas, the most heavily utilized bibliographic utility of the four available to Canadian libraries, would seem to have been fairly evenly distributed across special, academic, and public library constituencies.

Sixty libraries (64.52%) contributed to a network (in-house or external) *exclusively*, while the remaining 33 respondents input records to a network and to one or more of Utlas, OCLC, RLIN, WLN, and Dobis. Of the 39 total contributors to Dobis, 17 (43.59%) did so exclusively, and 22 (56.41%) also input records to Utlas, OCLC, RLIN, and a network, but not to WLN. Three respondents contributed to OCLC exclusively, with the nine remaining OCLC users also entering records on Utlas, RLIN, Dobis, and a network, but not on WLN. No respondents contributed only to RLIN or WLN; the one WLN user that also input records into a network was a public library in British Columbia with a collection size in excess of one million volumes. Overall, 238 responses (60.87%) were circled by those contributing to some potential vehicle for sharing cataloging copy, either in the form of a utility or a "local, regional, or special" network. Allowing for the possibility that Dobis might have been employed as a standalone IOLS, and reassigning the 17 Dobis-only users to the non-contributing side, there was still a majority (56.52%) of contributors, as opposed to non-contributors ($N = 170$; 43.48%) to copy-derivable databases.

While more respondents participated in bibliographic utilities or networks than not, the relatively large number of non-contributors bore further exploration. Given that the highest percentage (67.67%) of responses to the survey ($N = 224$ of 336) came from libraries with collection sizes of fewer than 100,000 volumes, it was hypothesized that size was a determinant of contribution to shared bibliographic databases. That is, the smaller the library (as defined by collection size), the less likely that institution would have the need or perhaps the requisite resources to subscribe to a biblio-

graphic utility, such as Utlas, or to be part of a network. When responses for libraries with collection sizes greater than 100,000 volumes were grouped and compared with libraries holding fewer than 100,000 volumes, an association between contribution to Utlas and size of collection was detected using Pearson's Chi-square test ($p = 0.002$); libraries with collection sizes of fewer than 100,000 volumes were less likely to contribute records to Utlas than were libraries with larger collections. Using the same inferential test, statistical significance ($p < 0.001$) was also determined for libraries contributing to (in-house or external) networks. Libraries with smaller collections ($< 100,000$ volumes) were less likely to contribute records to a network than were those with collection sizes of more than 100,000 volumes.

To lend some perspective to the relative weighting of non-contributors versus contributors, size of collection was tested under the hypothesis that, while smaller libraries might support standalone systems, and might indeed subscribe to online bibliographic utilities or CD-ROM-based services for *deriving* cataloging copy, they might not perhaps have had the same resources (technological, staff, financial) as larger libraries to assume contributory record status. Again, an association between collection size and "Not applicable" (does not contribute to a bibliographic utility or network) responses was detected using Pearson's Chi-square test ($p < 0.001$); libraries with collection sizes of fewer than 100,000 volumes were more likely to be "non-contributors" to any bibliographic utility or network (or Dobis), than were larger libraries (as in $> 100,000$ volumes).

In summary, those libraries that subscribed to a bibliographic utility or participated in a network were more likely to derive records contributed by libraries with larger ($> 100,000$ volumes) rather than smaller ($< 100,000$ volumes) collection sizes. Given that 30.8% ($N = 69$) of all respondents ($N = 224$) with collection sizes of fewer than 100,000 volumes represented special libraries, and that only 13.64% ($N = 12$) of those contributing to

Utlas were special libraries, one negative implication for the probability that small libraries will be non-contributors to shared databases was that bibliographic records for highly subject-specific, or more ephemeral special library materials might not have been readily available online. The potential depth and richness of bibliographic databases was perhaps undermined. On the other hand, 22.77% ($N = 51$) of all libraries with collections of fewer than 100,000 volumes ($N = 224$) were government libraries, which themselves represented 28.41% ($N = 25$) of all respondents contributing to Utlas ($N = 88$, where frequency missing = 1 because of one non-respondent to size of collection). This proportionate representation might have indicated positively for the inclusion of a substantial number of government documents (normally bilingual), and other government library materials in the Utlas database. In either case, such speculation about database content could not be substantiated by survey data.

USE OF AACR2R OR OTHER FOR CONTRIBUTED RECORDS

The two primary destinations for contributed bibliographic records for which survey data were collected were bibliographic utilities (Utlas, OCLC, RLIN, WLN), and local, regional, or special-purpose networks. One intent of the study was to determine which Canadian libraries (characterized by type of library and size of collection) were using the current cataloging code, AACR2R, for creating original records for various formats of materials. Further, of these, how many were contributing those records to shared databases (bibliographic utilities or networks) from which other cataloging agencies could derive copy? From these two questions the researchers hoped to construct a baseline profile of the potential quality of original cataloging being done in Canadian libraries for various material formats, and the probable destinations for those records. A corollary was the formats of material for which standards other than AACR2R were being applied, and the des-

tinuation of those original cataloging records. In short, might those libraries subscribing to a bibliographic utility or participating in an internal or external network in 1992 have expected to find a substantial body of current-standard records for a variety of book and nonbook materials? Phrased otherwise, what was the potential *quality* of original cataloging records in shared databases from which bibliographic copy could be derived?

Table 2 is focused on the first primary destination, and summarizes the number and percentage of respondents contributing records to one or more bibliographic utility and using either AACR2R or some other code (data grouped to include AACR2-1978; AACR1-1967; or "other" [not specified]) to catalog various kinds of book and nonbook materials.

Because of the breakdown by material format, numbers were too small to apply inferential tests; nonetheless, some observations utilizing descriptive statistics could be made. While respondents were asked to circle a selection for each type of material format listed, several did not comply. Therefore, no overall total response rate for the question as a whole (survey question 5) could be supplied. Based on total responses given for each of the formats, however, AACR2R was being used by over 80% of respondents contributing original cataloging records to bibliographic utilities for, in rank order, microforms (85.51%), computer software (83.72%), books (83%), serials (82.09%), and cartographic materials (81.58%) (see column 2, table 2). While over 80% of all respondents indicated that they were using AACR2R for creating records for the following materials, sound recordings were contributed by 77.03% of respondents, 3-D materials by 75%, music by 72.73%, videorecordings by 72.15%, and graphic materials by 70.59% (see column 2, table 2). Bibliographic records for these latter material formats were slightly less likely to be contributed to a utility database than the former materials. AACR2R-standard original cataloging records for films were the least likely of all formats to be contributed to a bibliographic utility by 54.35% of respondents. This might have

TABLE 2
 RESPONDENTS CONTRIBUTING TO ONE (OR MORE)
 BIBLIOGRAPHIC UTILITY AND USING AACR2R OR OTHER TO CATALOG

Material Format	Contributing to Bibliographic Utility and Using AACR2R	Contributing to Bibliographic Utility and Not Using AACR2R	Total Responses for Contributing to Bibliographic Utility
	(No. Using AACR2R)	(No. Having Material but Using Other than AACR2R)	(Total Responses for Each Material Format)
	Percentage of Row Total on Line 2	Percentage of Row Total on Line 2	Percentage of Row Total on Line 2
Books	83 (282) 83% (85.45%)	17 (48) 17% (14.55%)	100 (330) 100% (100%)
Microforms	59 (158) 85.51% (88.76%)	10 (20) 14.49% (11.24%)	69 (178) 100% (100%)
Videorecordings	57 (189) 72.15% (80.76%)	22 (45) 27.85% (19.23%)	79 (234) 100% (100%)
Sound recordings	57 (170) 77.03% (81.34%)	17 (39) 22.97% (18.66%)	74 (209) 100% (100%)
Serials	55 (171) 82.09% (86.80%)	12 (26) 17.91% (13.20%)	67 (197) 100% (100%)
Computer software	36 (111) 83.72% (89.52%)	7 (13) 16.28% (10.48%)	43 (124) 100% (100%)
Music	32 (91) 72.73% (81.25%)	12 (21) 27.27% (18.75%)	44 (112) 100% (100%)
Cartographic materials	31 (98) 81.58% (85.96%)	7 (16) 18.42% (14.04%)	38 (114) 100% (100%)
Films	25 (96) 54.35% (73.28%)	21 (35) 45.65% (26.72%)	46 (131) 100% (100%)
Graphic materials	24 (77) 70.59% (81.91%)	10 (17) 29.41% (18.09%)	34 (94) 100% (100%)
3-D materials	15 (44) 75.00% (81.48%)	5 (10) 25.00% (18.52%)	20 (54) 100% (100%)

been a positive factor, nonetheless, given that 73.28% of those holding films in their collections used AACR2R to catalog them originally.

A kind of 80/20 rule appeared to apply to the rate of contribution of AACR2R-standard original cataloging to bibliographic utilities. With only one exception (films), plus or minus 80% of all respondents were utilizing AACR2R for original records for various formats of material being contributed to bibliographic utility

databases. Furthermore, with only one exception (films), over 80% of respondents were creating original cataloging records for book and nonbook materials using AACR2R, regardless of their destination. Both observations suggested that the quality of original cataloging for various media, while not to current standard in *all* cases, was nonetheless very largely based on AACR2R. A subscriber to a bibliographic utility, or participant in a local, regional, or special-purpose network

might have been reassured by the (\pm) 80% contribution of AACR2R standard records to be derived, while perhaps remaining cautious of cataloging copy for film titles. Depending on one's point of view, (\pm) 20% might have constituted an unacceptably high percentage of contribution of non-standard records to a shared database. Given the lack of previous baseline research, the relative "goodness" of 80% (current standard) or "badness" of 20% (non-current standard) rates of contribution was difficult, if not impossible to judge. This present research might assist with future assessment of the relative quality of database content by providing some initial benchmarks.

With reference to table 2, contribution of non-AACR2R original records to bibliographic utilities warranted further exploration. The researchers conjectured that so-called "small" contributing libraries, with collection sizes of fewer than 100,000 volumes might be less likely than libraries with collections of greater than 100,000 volumes, and with proportionately more staff and budget resources, to create original records using a standard other than AACR2R.

Because of the breakdown by individual material formats, numbers were inappropriately small for inferential testing. Nonetheless, descriptive statistics (see columns 2 and 3, table 3) seemed to suggest that, when cataloging for microforms, serials, computer software, music, and cartographic and 3-D materials, there was little difference between "small" (\leq 60%) and "larger" (\leq 40%) libraries in the percentage of respondents contributing non-AACR2R records to bibliographic utility databases. While not statistically verifiable, libraries with collection sizes of fewer than 100,000 volumes seemed more likely than agencies with more than 100,000 volumes to contribute non-AACR2R original cataloging for books (88.24% versus 11.76%), and videorecordings (81.82% versus 18.18%). So-called "small" libraries seemed only slightly less likely than "larger" libraries (\geq 100,000 volumes) to contribute non-AACR2R records for films (71.43% versus 28.57%), sound recordings (70.59% versus 29.41%), and graphic

material (70% versus 30%). With the exception of films (at 45.65%), less than 30% of those contributing to bibliographic utilities were using other than AACR2R.

Again excluding films, less than 20% of all survey respondents creating original records for various formats were not applying AACR2R. Given these observations, the number of non-AACR2R records being contributed to bibliographic utilities by libraries with collection sizes of fewer than 100,000 volumes was proportionately minimal, indeed! While it could not be substantiated through inferential measures, size of library did not appear to be a determinant of contribution of non-AACR2R records to bibliographic utilities. It might have been that libraries entering original records on shared utility databases recognized the need for maintaining current standards, expecting that same assurance for the records that they, in turn, might have derived.

Since the mid-1980s, with the rise in the number of local IOLS, concern for the continuing growth and viability of bibliographic utility databases has magnified. While many libraries have continued to derive cataloging copy from utilities, some have chosen to contribute original records selectively or not at all in a purported effort to save on subscriber costs. With this concern in mind, the researchers examined the nature and extent of contributions to local, regional, or special-purpose networks only, to the exclusion of bibliographic utilities. If libraries were not contributing original cataloging to utility databases, were they directing those records to other sources of shared records instead? For what kinds of material formats, by what types of libraries, and with which cataloging code(s) were these records being created?

Shown in table 4 are the number and percent of respondents by library type that used AACR2R for creating original records for various material formats, and that contributed these records exclusively to a local, regional, or special-purpose network. The final column in table 4 gives the overall total by format with percentage relative to the total number of respon-

TABLE 3

SIZE OF LIBRARIES CONTRIBUTING NON-AACR2R RECORDS TO BIBLIOGRAPHIC UTILITIES RELATIVE TO TOTAL LIBRARIES NOT USING AACR2R FOR CATALOGING

Column #1	Column #2	Column #3	Column #4	Column #5
Material Format	Collection Size <100,000 vols. Contributing Non-AACR2R Records to Bibliographic Utilities Percentage of Col. 4 and (Col. 5) on Line 2	Collection Size >100,000 vols. Contributing Non-AACR2R Records to Bibliographic Utilities Percentage of Col. 4 and (Col. 5) on Line 2	Total Contributing Non-AACR2R Records to Bibliographic Utilities Total No. (%) Contributing on Line 2	Total Using Other than AACR2R for Cataloging Total No. (%) Responses by Format on Line 2
Books	15 88.24% (31.25%)	2 11.76% (4.17%)	17 100 (17.00%)	48 330 (14.55%)
Microfilms	6 60.00% (30.00%)	4 40.00% (20.00%)	10 69 (14.49%)	20 178 (11.24%)
Videorecordings	18 81.82% (40.00%)	4 18.18% (8.89%)	22 79 (27.85%)	45 234 (19.23%)
Sound recordings	12 70.59% (30.77%)	5 29.41% (12.82%)	17 74 (22.97%)	39 209 (18.66%)
Serials	7 58.33% (26.92%)	5 41.67% (19.23%)	12 67 (17.91%)	26 197 (13.20%)
Computer software	4 57.14% (30.77%)	3 42.86% (23.08%)	7 43 (16.28%)	13 124 (10.48%)
Music	6 50.00% (28.57%)	6 50.00% (28.57%)	12 44 (27.27%)	21 112 (18.75%)
Cartographic materials	4 57.14% (25.00%)	3 42.86% (18.75%)	7 38 (18.42%)	16 114 (14.04%)
Films	15 71.43% (42.86%)	6 28.57% (17.14%)	21 46 (45.65%)	35 131 (26.72%)
Graphic materials	7 70.00% (41.18%)	3 30.00% (17.65%)	10 34 (29.41%)	17 94 (18.09%)
3-D materials	3 60.00% (30.00%)	2 40.00% (20.00%)	5 20 (25.00%)	10 54 (18.52%)

dents that used AACR2R to catalog respective material types. The final row totals number of responses by library type, and percentage relative to total number of responses ($N = 244$), bearing in mind that one library could circle code use (one only) for several or all types of materials. Table 5 has the same information, but with percent values in each cell relative to total number of libraries by type ($N =$). These two tables allow for comparisons of contributions of AACR2R records to net-

works relative to total responses to the survey question (question 5) on format and cataloging code, and to total types of libraries responding (question 2) to the 1992 survey.

Less than 20% of respondents using AACR2R to create original records for category of book and nonbook formats listed in the survey were contributing to local, regional, or special-purpose networks exclusively (see final column, table 4). College libraries represented the larg-

TABLE 4
 TYPES OF LIBRARIES THAT USE AACR2R AND CONTRIBUTE TO LOCAL, REGIONAL, OR SPECIAL-PURPOSE NETWORKS ONLY

Material Format	Library Type*												Total by Format (Total Using AACR2R)
	College		University		Public		Government		Special		Other		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Books	11	23.91	8	17.39	12	26.09	8	17.39	3	6.52	4	8.70	46 (282)
Microforms	7	26.92	7	26.92	3	11.54	5	19.23	2	7.69	2	7.69	16.31
Videorecordings	8	24.24	5	15.15	9	27.27	7	21.21	1	3.03	3	9.09	26 (158)
Sound recordings	8	33.33	5	20.83	7	29.17	2	8.33	1	4.17	1	4.17	16.46
Serials	5	16.13	8	25.81	7	22.58	5	16.13	2	6.45	4	12.90	33 (189)
Computer software	7	38.89	5	27.78	2	11.11	2	11.11	1	5.56	1	5.56	17.46
Music	5	33.33	3	20.00	5	33.33	0	0.00	1	6.67	1	6.67	24 (170)
Cartographic materials	6	42.86	4	28.57	1	7.14	2	14.29	0	0.00	1	7.14	14.12
Films	7	43.75	4	25.00	0	0.00	4	25.00	0	0.00	1	6.25	18.13
Graphic materials	5	38.46	4	30.77	2	15.38	0	0.00	1	7.69	1	7.69	18 (111)
3-D materials	1	12.50	3	37.50	2	25.00	1	12.50	0	0.00	1	12.50	16.22
Total responses by library type (% of N = 244)	70	28.69	56	22.95	50	20.49	36	14.75	12	4.92	20	8.20	15 (91)

*Number of possible responses to Q-10 = 6; percentage relative to total responses by material format.

†Not all respondents supplied an answer for every format; therefore, no overall total supplied.

TABLE 5
 TYPES OF LIBRARIES THAT USE AACR2R AND CONTRIBUTE
 TO LOCAL, REGIONAL, OR SPECIAL PURPOSE NETWORKS ONLY

Material Format	Library Type*											
	College (N = 38)		University (N = 49)		Public (N = 70)		Government (N = 66)		Special (N = 75)		Other (N = 26)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Books	11	28.95	8	16.33	12	17.14	8	12.12	3	4.00	4	15.38
Microforms	7	18.42	7	14.29	3	4.29	5	7.58	2	2.67	2	7.69
Video-recordings	8	21.05	5	10.20	9	12.86	7	10.61	1	1.33	3	11.54
Sound recordings	8	21.05	5	10.20	7	10.00	2	3.03	1	1.33	1	3.85
Serials	5	13.16	8	16.33	7	10.00	5	7.58	2	2.67	4	15.38
Computer software	7	18.42	5	10.20	2	2.86	2	3.03	1	1.33	1	3.85
Music	5	13.16	3	6.12	5	7.14	0	0.00	1	1.33	1	3.85
Cartographic materials	6	15.79	4	8.16	1	1.43	2	3.03	0	0.00	1	3.85
Films	7	18.42	4	8.16	0	0.00	4	6.06	0	0.00	1	3.85
Graphic materials	5	13.16	4	8.16	2	2.86	0	0.00	1	1.33	1	3.85
3-D materials	1	2.63	3	6.12	2	2.86	1	1.52	0	0.00	1	3.85
Total by library type (% of total responses N = 244)	70		56		50		36		12		20	
		28.69		22.95		20.49		14.75		4.92		8.20

*Number of possible responses to Q-10 = 6; percentage relative to number of libraries by type (N =).

est percentage of contributors (28.69%) in this category, followed by university (22.95%), public (20.49%), government (14.75%), "other" (8.20%), and special (4.92%) libraries, respectively. No school libraries qualified for inclusion, though very few school libraries responded to the questionnaire itself (as noted in a previous article). College libraries (N = 38) constituted only 11.31% of respondents to the 1992 survey (N = 336), suggesting that the relatively minimal percentage of college libraries contributing AACR2R records to networks only would have had little potential impact on the continued enhancement and viability of bibliographic utility databases. Special libraries, which represented the largest constituency of questionnaire participants (N = 74 of 336, or 22.02%), ranked the lowest of network contributors. This observation was not

surprising given the earlier discussions of the probability of smaller libraries (93.24% of special library respondents had collection sizes of fewer than 100,000 volumes) being "non-contributors" to any bibliographic utility or network.

Of the second largest body of responses to the 1992 survey, namely public libraries (N = 70 of 336, or 20.83%), 20.49% indicated that they contributed their original AACR2R records to a network only. In turn, 33.33% (N = 5) of the responses were for music, 29.17% (N = 7) were for sound recordings, 27.27% (N = 9) were for videorecordings, 26.09% (N = 12) were for books, and 25% were for 3-D materials, with all other formats coming in at less than 25% (see table 4, column 4). But when these response rates by format were compared relative to the total number of public libraries complet-

ing the survey ($N = 70$), they were reduced to 17.14% ($N = 12$) for books, 12.86% ($N = 9$) for videorecordings, 10% ($N = 7$) for each of sound recordings and serials, and less than 10% for all other formats (see table 5, column 4). This suggests that while public libraries might have been proportionate to all other types of libraries, the most likely to contribute original AACR2R records exclusively to local, regional, or local networks—logically not unexpected given that publicly funded libraries may be encouraged to be or even financially supported in cooperative efforts such as networks—the extent of this contribution was nonetheless minimal and unlikely detrimental to bibliographic utility database viability.

CONCLUSIONS

Based on data derived from a 1992 survey of Canadian libraries, the present research was focused to explore the nature and extent of AACR2R use by different types and sizes of cataloging agencies that also contributed original cataloging records for book and nonbook materials to shared databases, such as bibliographic utilities or local, regional, or special-purpose networks. The paucity of empirical research linking cataloging code use to the nature and potential quality of records in bibliographic databases from which cataloging copy can be derived provided impetus for the research. Of particular interest were areas relating to: a profile of contributors to utilities or networks; relative adherence to current cataloging standards—as epitomized by the application of AACR2R—by those contributing to utilities or networks; and a more recent concern with whether or not the “richness” of original cataloging records in bibliographic utilities is being seriously undermined by the number of libraries contributing to local systems exclusively.

Canadian academic, public, school, government, and special libraries were more likely to contribute original records to the CATSS database of the bibliographic utility Utlas (now ISM Library Information Systems) than to OCLC, RLIN, and WLN combined. While not asked

their reasons for subscribing to Utlas, respondents might have preferred access to a nationally based utility supporting both official languages (English and French), and containing more records for specifically Canadian materials than another bibliographic utility might be prepared or reasonably expected to maintain. Almost 65% of respondents contributing to local, regional, or special-purpose networks did so exclusively, with the remainder also entering records into a bibliographic utility database, or Dobis. Because the total number of network contributors ($N = 93$) just slightly exceeded the total for Utlas ($N = 89$), and the percentage of exclusive contribution to the former (64.52%) again slightly exceeded that to the latter (60.67% to Utlas exclusively), was there reason to support popular speculation that reliance on utilities has decreased as participants have found alternate sources for cataloging or have formed or joined other cooperative bibliographic networks? There was neither sufficient nor appropriate data from the present study to empirically test such speculation, although totals might have suggested at least a kind of “loyalty split” in 1992 between Utlas and local, regional, or special-purpose networks.

Many respondents contributed records to more than one bibliographic utility, or to a utility *and* a local, regional, or special-purpose database. The majority of respondents contributed original cataloging records to some potential source of derived copy, that is, to one or more bibliographic utilities or to some (in-house or external) network. Of those non-contributors, size was detected (using Pearson's Chi-square test) as a determining variable. That is, the smaller the library (holding fewer than 100,000 volumes in its collection), the less likely to contribute to any bibliographic utility or network, in general, or to Utlas or a local, regional, or special-purpose network, specifically.

While the breakdown of responses into material formats rendered numbers inappropriately small for inferential testing, descriptive statistics suggested that the majority of respondents who were contributing original cataloging to bibliographic

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utility databases were using the current AACR2R standards for those records. Those who were using other than AACR2R were more likely to be doing so for films, than for any other format of material. Size did not appear to be a factor for non-standard cataloging, though small libraries (fewer than 100,000 volume collection sizes) seemed more likely than larger libraries (greater than 100,000 volumes) to contribute records that were created for books and videorecordings using other than AACR2R.

The relatively low percentage (20%) of respondents (see table 4) contributing AACR2R-standard records for a variety of formats to local, regional, or special-purpose networks, exclusively, seemed to indicate that those libraries using the current code for original cataloging tended to distribute those records fairly broadly. In other words, AACR2R original records were not being confined to networks only, and in preference to bibliographic utility databases. Moreover, raw data revealed proportionately few libraries ($N = 69$ of 313 responses = 22.04%) contributed non-standard records to in-house or external networks, exclusively, and of this small number 66.67% ($N = 46$) were responses from libraries with collection sizes of fewer than 100,000 volumes. There were no responses from larger libraries with collections in excess of 500,000 volumes. The potentially negative implications for database quality in networks (in-house or external) through the creation of non-standard records would appear to have been minimal.

Overall, the research seemed to confirm that among the 336 self-selected respondents, there was an apparent commitment to create original records for a variety of material formats using the current code, AACR2R, particularly if that library was contributing records to a potential source for derived cataloging. While the smallest libraries of those surveyed were less likely to contribute records to either a bibliographic utility or network database, those that did maintained the same AACR2R standards for their records as did libraries with collection sizes of over 100,000 volumes. Given

the increasing potential for exchanging bibliographic records via the Internet, it may be reassuring to think that, at least in spirit and with all goodwill, cataloging agencies regardless of type and size may have recognized the need for, and the value of, the kind of quality derivable copy that can be created and maintained by using a recognized standard such as AACR2R.

The present research was intended to provide a baseline against which future studies of the relationship between aspects of cataloging code application and bibliographic database quality might be measured. The current, and ongoing activities in the development of cataloging standards, in the expansion in bibliographic utility services, and in the growth of networks—whether local, regional, national, or international—underline the continuing imperative for research into the intersection and mutual impact of these three integral elements of universal bibliographic control and access.

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Book Reviews

Lawrence W. S. Auld, Editor

A.V. in Public and School Libraries: Selection and Policy Issues. Ed. Margaret J. Hughes and Bill Katz. New York: Haworth, 1994. 110p. (ISBN 1-56024-461-5). LC 94-1849. Also published as *The Acquisitions Librarian*, no. 11, 1994.

The text of *A.V. in Public and School Libraries* is divided into two main parts, "A.V. Materials in the Library: Video and Spoken Word Cassettes" and "Focus on Children and A.V." In total, the book consists of nine chapters, each by a different author, representing a variety of library positions and types of libraries. The writing style of the various authors varies greatly, ranging from scholarly to chatty, and some chapters are written in the first person. Each chapter opens with a useful feature, a summary of the contents.

A.V. in Public and School Libraries is a "mixed bag" in that it focuses on audiovisual materials in a broader sense, and is not limited to the discussion of videorecordings. Unfortunately, the editors might have fared better by limiting the scope of the book to the discussion of videorecordings in public and school libraries. Although the fifth chapter ("Spoken Word Cassettes" by Joyce Fellows Murphy) is well written, and describes trends, cites statistics, and gives potential sources of information (jobbers) as well as professional sources of information, it is out of sync with the rest of the book, which focuses mostly on videorecordings. This chapter would be more appropriate if the thrust of the entire book was more general and discussed a wider range of audiovisual materials.

There is also some overlap among the various chapters in terms of the types of issues discussed (selection policy and

tools, circulation issues, budget considerations). This is often typical of a collection of articles, and is difficult to avoid when a specific topic is explored.

The first four chapters contain an insightful discussion of how developing a video collection differs from developing a collection of print materials. In the first chapter, "Video Selection for the Public Library: Special Needs," Margaret Hughes examines major issues, including who should be allowed to borrow videorecordings, whether or not a library's video collection should be cataloged, and the selection process. Additionally, the author offers a useful checklist for selecting videos (p. 13) and also suggests sources for cataloging help (p. 11).

In the third chapter, "Videos in Public Libraries: Free or Fee?," Barbara Berman explores the "fee or free" issue for lending videos in a public library. She also presents an examination of the difference between patrons who visit libraries to borrow videos and the "traditional" library patron. It is interesting to note that this situation is not unique to the United States—the author cites cases from both Ohio and Sydney, Australia.

The second part of the book is focused on children and audiovisual materials discussing children's video collections in both public and school libraries. There is a great deal of overlap among chapters 6–8. The eighth chapter, "Establishing a Children's Video Collection for the School or Public Library," by Kathryn M. Weisman, is the best of the three chapters on children and audiovisual materials. Her style of writing is scholarly, her recommendations are solid, and the information in the chapter is presented in a very organized manner. Weisman's chapter

covers selection tools (including reviews), selection policies, and technical information, such as video transfer. She explains what constitutes a video transfer, and the potential pitfalls involved with purchasing one. The last part of her chapter consists of a "highly selective" list titled "An Opening Day Collection of Children's Videos." The list is excellent, and includes title, distributor, duration, cost, and a short summary for each title.

In the book's last chapter, "Audiovisual Materials and Secondary Schools," Kathleen Laing focuses on learning styles in relation to various types of media. The author also discusses different types of media (videotape, video production, videodiscs, and interactive multimedia) and equipment. Well written and concise, this chapter complements the preceding chapter by Weisman.

A.V. in Public and School Libraries is an organized and coherent effort to bring together a body of knowledge to create a resource tool for public and school libraries to use when developing video collections. It offers information that will benefit those libraries just starting to build video collections, as well as those with established video collections. The various chapters include relevant information on the selection process, circulation policy (including borrowing periods and restrictions), and budgeting.—*Mary Beth Fecko, Rutgers University, Busch Campus*

The Classification of Fiction: The Development of a System Based on Theoretical Principles. By Clare Beghtol. Metuchen, N.J.: Scarecrow, 1994. 366p. \$39.50 (ISBN 0-8108-2828-6). LC 93-45409.

This book is adapted from the author's University of Toronto doctoral dissertation. The overall aims of the research presented in this work are "first, to inquire critically into various kinds of theoretical and methodological issues that arise in designing a fictional analysis system for online bibliographic retrieval, and second, to develop an operable preliminary prototype system using both established and experimental semantic and syntactic classificatory techniques" (pp. 270-71).

Little discussion of online retrieval is made; however, online retrieval aspects may be inferred from the examples presented. The author does succeed in the other aims.

The author discusses the importance of fiction in research, the differences between analysis of fiction and nonfiction, and the problems of classification in the fine arts and humanities. For primary works of literature "the principle of classification-by-creator" (p. 21), and this approach does not allow for the analysis of the content of individual works of literature or meet the needs of users seeking access to particular themes, characters, etc., in different literary works by different literary authors.

Other fiction analysis theories and systems are presented and examined. These include Haigh's adaptation of the *Dewey Decimal Classification*, Cameron's Fantasy Classification Scheme, Croghan's Classification for Science Fiction, Walker's "Problem Child" system (p. 58), and Pejtersen's Analysis and Mediation of Publications.

The general form and content characteristics of fiction, the subjects treated in critical works about fiction, and the "extent to which characteristics of both types of documents are appropriate for incorporation into a classification system for fiction" (pp. 94-95) are presented in the contexts of fictional and critical warrant. Data elements in fiction, the problems encountered in the analytic expression of these data elements, and the theoretical bases for an experimental fiction analysis system are examined.

The Experimental Fiction Analysis System (EFAS) that is presented is intended for fiction document analysis and computerization and is not intended for use in shelving items in any library's collection. The economic aspects of using EFAS are not covered. The major elements of the EFAS are Characters, Events, Spaces, Times, and Other. Each major element may be repeated as many times as needed, retroactive notation is applied to the individual data elements, and both relationships between and co-

Chosen Times

T1: seasons:
 cm(+322) [summer AD]
 {+ = AD; 322 is from UDC Table 1(g)}
 decade:
 cu(+197) [1970s AD]
 {197 is from UDC Table 1(g)}

Chosen Spaces

S1: name:
 ej(Ontario, Northern)
 {Ontario, Northern from LCNA, LCSH, or AACR2}
 physiographic designation:
 eq(253) [virgin (primeval) woods and forests]
 {253 is from UDC Table 1(e)}
 modern:
 ev(713) [Ontario]
 {713 from UDC Table 1(e)}

Chosen Events

E1: name:
 gm(Bestiality)
 {Bestiality is from LCSH}
 type:
 gq(306.77) [sexual practices]
 {306.77 is from DDC20 main schedules}

Chosen Characters

C1: name:
 jo(Lou)
 {Lou established according to AACR2}
 occupation:
 jpp(091) [bibliographer]
 social level:
 jpt(0622) [professional]
 racial/ethnic:
 jpv(112) [English Canadian]
 sex:
 jqt(042) [female]
 age:
 jqv(056) [adult]
 living/not:
 jrs [living]
 type:
 jst(572) [human being]
 {numbers 091, 0622, 042, 056 are from DDC20 Table 7;
 112 from DDC20 Table 5; 572 from DDC20 "Third Summary,
 Thousands Section"}

C2: name:
 jo(Bear)
 sex:
 jqt(041) [male]
 age:
 jqv(056) [adult]
 living/not:
 jrs [living]
 type:
 jst(599) [mammal]

Figure 1. Example of EFAS notation

occurrences of major data elements may be represented. In addition, EFAS allows for the interpolation of data from other bibliographic classification systems (e.g., *Universal Decimal Classification* [UDC] and *Dewey Decimal Classification* [DDC]) and of controlled vocabulary and expressions from other bibliographic tools (*Anglo-American Cataloguing Rules, 2nd ed.* [AACR2], *Library of Congress Subject Headings* [LCSH], and the Library of Congress Name Authority file [LCNA]). The complete schedules (including instructions and application rules), auxiliary tables, and sample coding sheets are included in the text. References to UDC and DDC are included, but the reader must examine these classification works separately to locate numbers that are to be used.

While space does not allow for a thorough analysis of all of the elements of EFAS, the example of EFAS notation (appendix 2, pp. 323–26) for Marian Engel's novel *The Bear* in figure 1 shows EFAS application. Explanations in curly brackets are made by the reviewer; parentheses in the notation are part of the schedules and notation; information in brackets appears in the text and is not part of the notation.

The relationships between the major elements and the co-occurrences among the major elements are enumerated. This results in the notations for this work of fiction illustrated in figure 2.

The [S1,E1,C1,2] etc., represent the co-occurrences between the main ele-

ments. The [C2]jkm] and [C1]jkm] represent a personal relationship between Character 1 and Character 2, respectively, with jkm specified. The meaning of the notation appears in the schedules.

The EFAS schedules and notation also accommodate ambiguous situations as well as transformations (one thing/condition/person turning into some other thing/condition/person). Data elements rather than subjects are classified in EFAS, attempts are made to provide for anomalous elements, and standard bibliographic and subject systems are used in and for the data elements. It should be noted that authority control is to be exercised on numbers and terms used in the parentheses after notation.

The author analyzes a small number of titles using EFAS and examines the success of the system for these titles. Much broader application needs to be made of EFAS before definitive statements about its success can be made.

This is an intriguing and complex study of a fiction classification system. Although EFAS is experimental and preliminary, it should provide a base for future research into the classification of fiction. This work is not intended for someone only casually interested in classification. One needs a sound knowledge of classification theory and principles to appreciate this work. This reviewer lauds Beghtol's work and looks forward to additional studies and research that might come from this system.—William A. Garrison, *University of Colorado*

- T1 cu(+197)cm(+322) [S1,E1,C1,2]
 S1 ev(713)eq(253)ej(Ontario, Northern)
 [T1,E1,C1,2]
 E1 gq(306.77)gm(Bestiality) [T1,S1,C1,2]
 C1 jst(572)jrsjqv(056)jqt(042)jpv(112)jpt(0622)
 jpp(091)jo(Lou) [C2]jkm] [T1,S1,E1]
 C2 jst(599)jrsjqv(056)jqt(041)jo(Bear) [C1]jkm]
 [T1,S1,E1]

Figure 2

Languages of the World: Cataloging Issues and Problems. Ed. Martin D. Joachim. New York: Haworth, 1993. 292p. \$39.95 (ISBN 1-56024-520-4). LC 93-38632. Also published as *Cataloging & Classification Quarterly* 17, nos. 1/2, 1993.

Catalogers are exposed here to myriad problems they will encounter when cataloging materials in different languages, and are presented with various approaches and solutions. Editor Joachim aptly acknowledges in his introduction that many questions are asked and answered in the book and proposals for further discussion and resolution also are made. Perhaps the book's organization could have been improved with subdivisions that more accurately reflect the cataloging issues discussed in the book: identification of language, authority work, descriptive cataloging, subject cataloging, transliteration, and eliminating backlogs. All articles are grouped under three vague, very broad headings: Specific Languages or Groups of Languages, Non-Specific Languages, and Viewpoint of the Patron.

In one article Nancy Morris cites linguists' prediction that within a century, 90 percent of the world's languages will be lost. She thereby emphasizes the important social role catalogers have to play in documenting, preserving, and providing proper access to "threatened" Pacific island languages. Mary Russell Bucknum recognizes the importance of preserving and cataloging sound recordings of American Indian languages like Siksika, Nez Perce, or Chukchansi, recordings that contain a wealth of information. Unfortunately, many of these recordings are of poor quality—field collectors often failed to identify the name of the language.

Ann Bein makes catalogers aware of the difficult authority work involved in establishing African names, which contain many different elements and can be entered under first, medial, or last element. Usha Bhasker illustrates the difficulty in establishing Indian names because India has seventeen official languages. In classical Sanskrit many authors may have the

same name. Virginia Ballance describes the National Library of Canada's bilingual policy of establishing authority records in both English and French.

Several articles rightfully deplore the inadequacy of *Library of Congress Subject Headings* in properly describing different ethnic groups and cultures. Bhasker suggests several changes. For example, she would change EAST INDIANS to ASIAN INDIANS, and INDIANS OF NORTH AMERICA to NATIVE AMERICANS (NORTH AMERICA). She laments the confusion of COOKERY, INDIAN intended to refer to Native American cooking, but sometimes used to refer to the cooking of India. Marielena Fina sees inherent bias in a subject heading like LIBRARIES FOR THE SOCIALLY HANDICAPPED for non-native speakers of English. Edward Seeley regrets that the Cleveland Public Library with its extensive forty-five language collection cannot offer bilingual access in the foreseeable future.

Some writers also complain of the inadequacy of the Library of Congress classification system, which is either inadequate or nonexistent for some subjects. Edward A. Jajko demonstrates its inadequacy for Islamic law as well as for the history of the Palestinian Arabs and Persian and Turkish literatures. George Johnston much prefers the University of Cincinnati's classification scheme for Greek and Latin literature to that of the Library of Congress, which classifies all works in Greek and Latin in PA, but all translations under subject, forcing the patron to look in two separate places. At the University of Cincinnati, every work in Greek and Latin is classified in PA with only biographies of an author and books dealing with several of an author's works in general by subject. Johnston recommends publication of a new edition of the 1928 PA schedule, which currently lacks instructions on how to subdivide the entries, has no table numbers to subdivide the entries, and lacks an indication of how commentaries on individual titles are to be shelved. Martha Crowe regrets the inadequacy of the classification scheme for 19th- and 20th-century Icelandic authors.

At Cornell, with its extensive Icelandic collection, LC's single classification numbers have been extended to provide better patron access.

Catalogers can learn from firsthand experience here about the difficulty of transliteration of some languages. William McCloy recognizes the difficulty of using two different transliteration tables for Chinese, the Wade-Giles transliteration table used in the United States and Canada and the pinyin transliteration table used everywhere else. Because Chinese romanization is based on pronunciation, the problem is compounded by the fact that the Chinese language has hundreds of dialects and regional accents. Michael Walter cites the difficulty of romanizing languages for which there are no transliteration tables. At the Bibliothèque Nationale, as acknowledged by Nicole Simon and Monique Choudey, many books are not romanized. All books acquired in non-Roman scripts are cataloged manually on cards in the vernacular.

As one can see, books in multiple languages present many varied problems to catalogers and sometimes cause backlogs. To reduce backlogs, Fe Susan Go argues for greater cataloging cooperation among libraries. She cites as an example the Vietnam Union Catalog grant to catalog Vietnamese materials, a cooperative venture between the Committee on Research Materials on Southeast Asia (COR-MOSEA) and the Australian National Library. Go also recommends minimal level cataloging for Southeast Asian materials to reduce backlogs, a practice followed by the Bibliothèque Nationale for all non-French books.

No solution described here is sacrosanct. Catalogers can obtain here a good glimpse of the depth and variety of problems in cataloging materials in many languages. It is hoped that catalogers can use the information imparted here to develop innovative solutions of their own when faced with dilemmas in cataloging these materials. The book can prove useful to catalogers as they confront the problems of language identification, authority control, classification, transliteration, descriptive and subject cataloging, and back-

logs of these materials in their own libraries.—*Bob Ivey, University of Memphis*

Electronic Access to Information: A New Service Paradigm. Ed. Win-Shin S. Chiang and Nancy E. Elkington. Mountain View, Calif.: Research Libraries Group, 1994. 83p. paper, \$10 (for postage and handling).

Publishing in the Information Age: A New Management Framework for the Digital Era. By Douglas M. Eisenhart. Westport, Conn.: Quorum Books, 1994. 296p. \$55 (ISBN 0-89930-847-3). LC 93-5581.

In July 1993, for approximately 60 participants from 38 of its member institutions, the Research Libraries Group (RLG) held a symposium to address service management issues of electronic access. Specifically, the two objectives of the symposium were "to explore opportunities for cooperative action . . . and to develop strategies for making the most effective use of both available technologies and electronic information itself in support of the . . . missions of RLG member institutions" (p. 1). *Electronic Access to Information* presents the symposium's six papers, along with group reports from brainstorming/discussion sessions and a brief description of three case-in-point projects that illustrate ways specific RLG members "incorporated technological advances in improving access to information" (p. 3).

The participants gave the symposium "rave reviews" (p. 2). But while there is much of interest here, there is little that is really new. For example, in his keynote address, "Knowledge Services in the Digitized World: Possibilities and Strategies," Douglas E. Van Houweling, vice provost for information technology at the University of Michigan, briefly covers ground that should be familiar to any library practitioner who has attended a professional meeting in the last several years: the merging of media in the digitized environment, the use of library services outside the spatial and institutional boundaries of the library, the trend toward individualized service without direct assistance, and the need to integrate information re-

sources and information technology. In "Local or Remote Access: Choices and Issues," Nancy M. Cline, dean of libraries at the Pennsylvania State University, discusses factors in determining which modes of access to specific electronic information resources a library might provide. She includes examples of decisions from her own institution: in one case, the Libraries chose to mount a heavily-used database on the library computer, searchable through the campuswide information network; in another case, they chose not to acquire the raw data files of a valuable resource when development costs of local search software would be out of line. These are interesting, though unsurprising, and are typical of decisions with which many libraries (including this reader's) are wrestling. In "Building Xanadu: Creating the New Library Paradise," following the apparently inevitable quote from Coleridge, Jerry D. Campbell describes results of a survey of users' expectations at Duke University. Unsurprisingly, Duke's library users want immediate full-text electronic access and speeded-up delivery of materials in traditional formats, too, along with an "information professional available," presumably electronically (p. 29). Campbell notes that the "toughest challenge of creating . . . the new library paradise really appears with the issue of finance" (p. 31). In her summary paper, "Xanadu Revisited: Clothing the Emperor for the New Library Role in the Electronic Library Paradigm," Law Librarian of Congress Kathleen Price expresses "doubt that a truly seamless web can be achieved for public patrons," and asserts "several truths," among them that "information is a commodity that must be paid for; librarians and publishers have provided added value . . . and deserve to succeed; we are likely to perform different services in a different manner in the future . . ." etc. (p. 58).

Two papers present more novel approaches to underlying problems. In "How Fair Is Use: When Is Publishing More Like Broadcasting?," legal publisher and attorney Kathryn M. Downing proposes the adoption of a different pricing

model for electronic information, one based loosely on the copyright enforcement practices of the American Society of Composers, Authors, and Publishers (ASCAP), which licenses its members' work for any sort of public performance. Downing contends that it is the nature of use that has changed in the electronic environment and that "now is the time to . . . begin to focus on the need to fairly remunerate the creators and purveyors of information . . . to think not in copies, but in *uses* [author's italics], all kinds of uses . . ." (p. 37). Shifting to an ASCAP-like pricing structure would be a radical change for publishers and libraries and not without its difficulties. "Obviously I am assuming we have overcome the antitrust issues," Downing comments in a breezy parenthetical aside (p. 39). That definitions and economic ramifications of ownership, licensing, and use of electronic information remain key unresolved issues is clear in the reports of Small Group Discussions, one of which notes—Downing's presentation notwithstanding—that "no one was eager to abandon the concept of fair use in the academic setting" (p. 69). In "Partners and Alliances," Robert C. Berring, professor and law librarian of the School of Law, University of California at Berkeley, asserts the value of librarianship, with its "spirit of equity and service" and its identification with the user (p. 46).

To save librarianship and the service values it embodies, Berring proposes that librarians form alliances with information vendors. Exactly how these alliances might work to the benefit of libraries and librarians is unclear from the essay. Berring draws on his experience in a law school library, in which vendors subsidize law students' access to online legal research systems; but this experience might not be directly applicable to all contexts, such as libraries serving humanists, education students, and others with more limited long-term financial prospects.

For this reader, specifics related to the first stated objective of the symposium—"to explore opportunities for cooperative action" (p. 1)—are mostly notable by their absence. The topic arises frequently, from Van Houweling's assumption (not proven,

and given unresolved questions of ownership and rights, not likely in the long run) that “collaborative purchase and shared access through technology provide one obvious way to reduce acquisitions expense” (p. 11), to one group report’s earnest statement that “libraries need to work with each other . . . in procuring electronic resources” (p. 62). The specifics of cooperating in this fluid technical and financial environment are complicated. The difficulties of reconciling assumptions about “fair use” and users’ right to information with current requirements to provide readily quantifiable, “bottom-line” evidence of economic value might increase the complications.

In contrast to the library-oriented focus of *Electronic Access to Information*, libraries rarely appear in *Publishing in the Information Age*, by Douglas M. Eisenhart. The author’s intended audience is his peers, managers in the publishing industry. The purpose of the work is to extend this audience’s understanding of the transformative changes that digital information technology is making in the publishing industry and to focus attention on the strategies necessary for publishers to thrive in the new media environment. As Eisenhart notes, “The new paradigm decouples publishing from its adherence to exclusively print formats and embraces the selecting, packaging, and delivery of information in all media formats” (p. 268). *Publishing in the Information Age* explores the implications of this decoupling.

Eisenhart structures the work around his formulation of the publishing industry’s basic elements, which he calls “the 7 M’s of publishing.” These include material, mode, medium, means, and market—“the five value-added M’s”—plus management and money—“the two M’s that form the essential infrastructure of all businesses” (p. 43). It’s a catchy, mnemonic structure—practically a publishers’ continuing-ed seminar waiting to happen. In analyzing the 7 M’s, the author presents what he identifies as “45 core concepts.” Among these are content-based publishing; the content franchise; multimodal publishing; convergence: publishing, broadcasting, and telecommunications;

the mediated environment; globalization and segmentation of markets; and intellectual property management programs.

Along the way, Eisenhart presents a synthesis of writing from many fields, in a successful effort to provide background on “the changing notion of information” and its related “broad and powerful metaphors, such as the information society, the information revolution, the Information Age, and the information industry” (p. 17). The reader encounters Claude Shannon, Koji Kobayashi, Irving Horowitz, Christopher Burns, Frederick Williams, Oldrich Standera, Daniel Bell, Theodore Roszak, Alice Schreyer, Peter Drucker, Ted Levitt, even librarianship’s own prophet of the paperless society, F. W. Lancaster (on p. 266—unfortunately without a cited source). There’s an explanation of the origin of the ubiquitous phrase “paradigm shift” (from Thomas Kuhn’s *The Structure of Scientific Revolutions*) and the concept’s application to the current state of the publishing world (pp. 36–40).

While much of this material will not be new to librarians, probably few of us would be familiar with every work and writer mentioned. Thus, Eisenhart’s synthesis of ideas about the Information Age, not all of them uncritical, is useful review reading. Also, some concepts Eisenhart discusses in terms of the publishing world—for example, value added by “information brokers,” establishing closer customer contact in order to respond to user needs and preferences, the role of strategic vision in a successful organization—obviously have implications for the library world. The most valuable aspect of Eisenhart’s work for librarians, however, is his point of view. Like Downing’s essay, *Publishing in the Information Age* shows us how the digital information environment looks from the point of view of another work community it is revolutionizing. And Eisenhart, like Downing, finally focuses on questions of ownership, licensing, and control of the use of intellectual property.

As a snapshot of where we are, and with some sections (particularly Downing’s essay) providing food for thought, *Electronic Access to Information* has

value for the practitioner, at a very reasonable price. But don't expect much guidance. Quite a different sort of work, *Publishing in the Information Age* provides a conceptual look at the retooling occurring in the publishing industry, as well as a review of the history of the so-called Information Age. As such, it is helpful and perhaps even critical reading for acquisitions librarians, who must understand and interpret for their institutions the ongoing changes in distribution and acquisition of media. Taken together, these works provide views of the emerging digitized media environment from several perspec-

tives. Neither publication answers some fundamental questions concerning the future of libraries, institutions held by a community or organization that provide access to information and media to members of that community, often as a right of citizenship, residency, or membership. As in the case of access to medical care, our society has not yet fully resolved the dual aspects of access to information—as a commodity to be purchased by those who can, and in some cases as a right. Naturally, these works reflect that fact.—*Carolynne Myall, Eastern Washington University*

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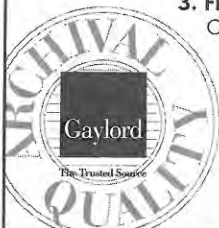
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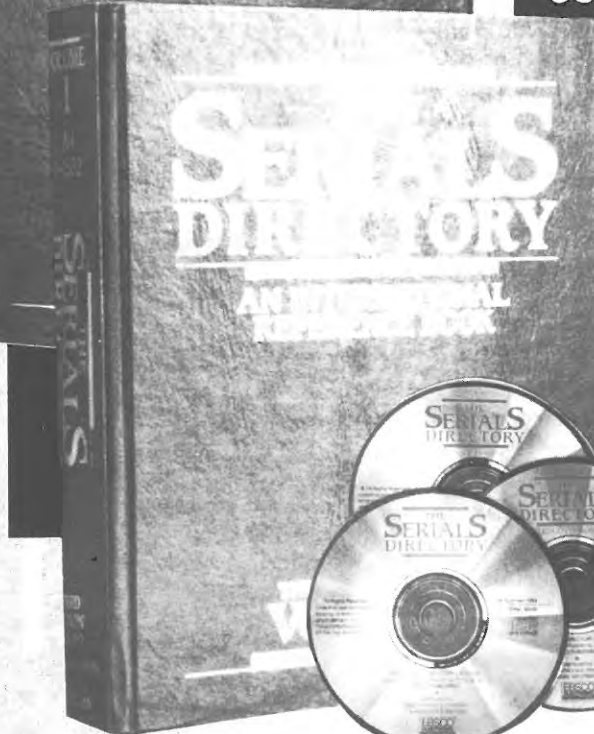
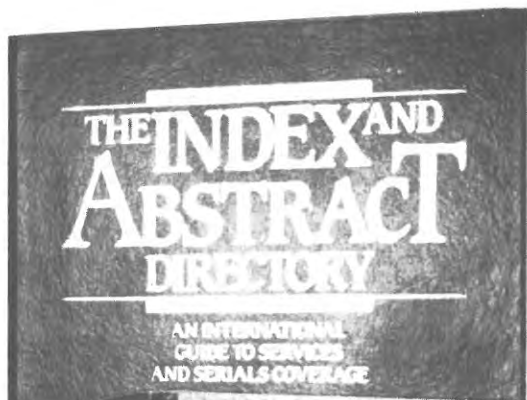
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3. Write the article in a grammatically correct, simple, readable style. Whenever possible avoid jargon and acronyms. Discursive notes are strongly discouraged. For spelling and usage consult the *Random House Webster's College Dictionary* (New York: Random House, 1991). Verify the spelling and accuracy of all names in an appropriate source. Consult *The Chicago Manual of Style*, 14th ed. (Chicago: Univ. of Chicago Press, 1993) for capitalization, abbreviations, usage of numbers, etc.
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6. Submit all references on separate pages at the end of the text, preceding any tables or illustrations.
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EDITORIAL POLICY

LRTS is the official journal of the Association for Library Collections & Technical Services (ALCTS), a division of the American Library Association. The following statement of editorial policy was adopted by the ALCTS Board of Directors, July 1, 1991.

PURPOSE

The purpose of *LRTS* is to support the theoretical, intellectual, practical, and scholarly aspects of the profession of collection management and development, acquisitions, and technical services by publishing articles (subject to double-blind peer review) and book reviews, and editorials and correspondence in response to the same.

AUDIENCE

The audience for *LRTS* is practitioners, students, researchers, and other scholars with an interest in collection development and technical services and related activities in all types of libraries.

FREQUENCY

LRTS is published quarterly, with the volume calendar corresponding to the calendar year. Numbers appear in January, April, July, and October.

SCOPE

The editor of *LRTS*, with the assistance of an editorial board, strives to achieve a balance among the articles published in

the journal so that over the volume each of the sections of ALCTS (Acquisitions, Cataloging & Classification, Collection Management and Development, Preservation of Library Materials, Reproduction of Library Materials, and Serials) is represented in the journal. Articles on technology, management, and education are appropriate to the journal when the application of these is to issues of interest to practitioners and researchers working in collection development and technical services. The scope of the articles published in *LRTS* is also guided by the "Mission and Priorities Statement" adopted by the ALCTS Board of Directors in 1990.

CONTENT

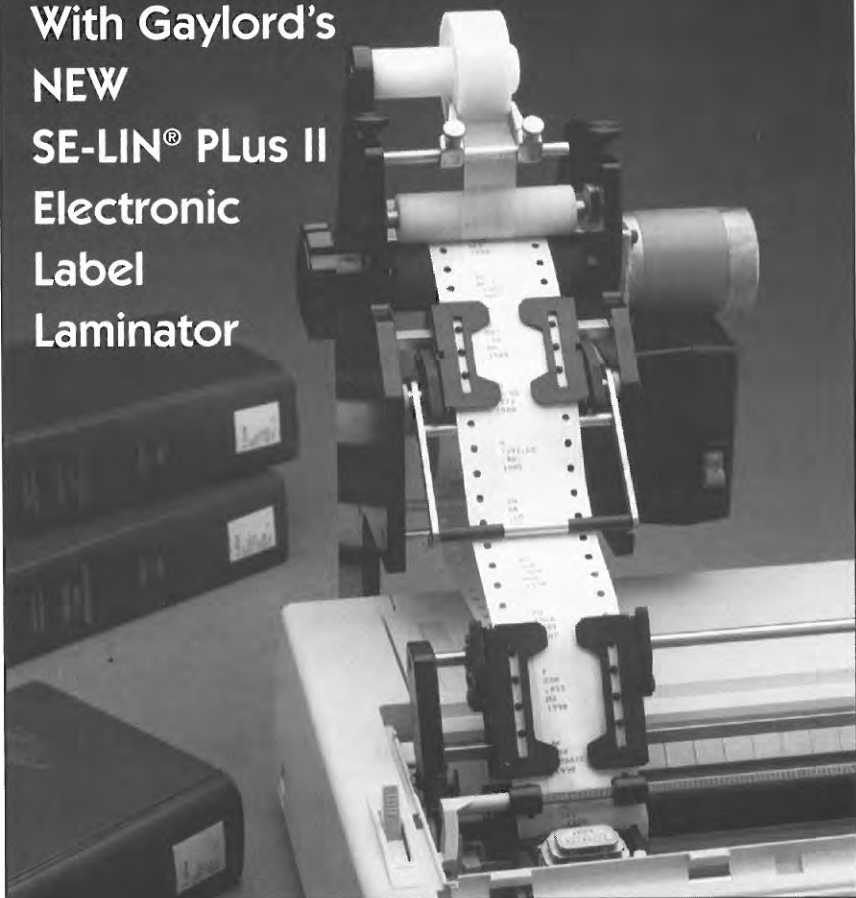
The content of *LRTS* is to include:

1. Articles that further the advancement of knowledge in the profession of collection management and development, acquisitions, and technical services by reporting the results of research or other scholarly activity.
2. Periodic literature review essays that discuss issues and trends of interest to the membership of ALCTS.
3. Notes that report unique or evolving technical processes.
4. Notes that report unique or evolving research methods.
5. Substantive book reviews of new publications of interest to the membership of ALCTS.
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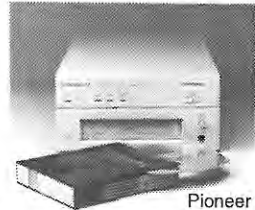


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