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# CARL UnCover2 or Faxon Finder? A Comparison of Articles and Journals in CARL UnCover2 and Faxon Finder

Janifer Holt and Karen A. Schmidt

*As the number of online searching systems and electronic document delivery services increase, librarians are faced with having to make decisions about which system to acquire. Faxon Finder and UnCover2 are two well-known systems currently available and competing for users. On the surface, these two systems appear to be more or less the same, and one might suppose that searching either would yield approximately the same kind of bibliographic citations for users. To test this assumption, seven subjects in various disciplines were searched in each system and then compared from the point of view of journal article overlap and journal overlap. For these seven disciplines the average overlap in journal articles was 29.9%; the average overlap in journals was 33.6%. The results of this preliminary study show a startling lack of overlap, suggesting that both systems cover different ground and that a standard and general purpose database system has yet to be found.*

**L**ibrarians are faced with a number of choices of online searching systems and electronic document delivery services that have developed in the last few years. Two well-known systems currently available and competing for users are Faxon Finder, developed by the Faxon Company, and UnCover2, from CARL Systems in Colorado. On the surface, these two systems appear to be more or less the same: created for the academic and corporate market, covering many thousands of journals, and offering author and title citation information available through easy keyword searching, as well as sophisticated document delivery services. Li-

brarians might suppose that acquisition of one or another of these two products would yield approximately the same kind of bibliographic citations for their users.

Discussions in the literature do not address this assumption. There are a number of articles that describe the two systems, including their capabilities, weaknesses, and ease of use. Kroeger (1990), for example, presents a thorough overview of the Carl UnCover system and makes recommendations for reference librarians as they guide users through the system. Faxon Finder is relatively new and has not yet undergone the rigorous testing that UnCover has seen. Leach and Tribble

(1993) provide a succinct description of not only the Faxon and Carl systems, but other similar systems as well. Their focus is on the document delivery component of these systems, not the contents of the databases. They do call, however, for a detailed examination of the contents of these databases as an important component in considering these systems as useful adjuncts to collection development and access strategies. Kurosman and Durniak's 1994 comparison of document delivery systems, including traditional interlibrary loan, does not provide a comparison of the contents of these databases as much as a quantified description of the delivery systems. Two other articles, by Jackson (1993) and by Wessling (1992), are useful for their general insights into issues related to access and document delivery, and the roles that systems such as Faxon Finder and UnCover2 play, but again they do not offer guidance on evaluating or choosing a specific system.

### THE COMPETING SYSTEMS

#### UNCOVER2

UnCover is a multidisciplinary journal article access database developed by CARL (Colorado Alliance of Research Libraries) Systems, Inc. The database was released in December 1988 to members of CARL. Since that time, UnCover2 has been acquired for additional libraries through gateway connections. Journals are sent by eight CARL libraries, both academic and public, to CARL Systems. These journals are checked-in and their tables of contents are entered into the UnCover2 database. As of 1990, nearly 10,000 journal titles, including selected government documents, and over 900,000 article titles were entered. UnCover2 covers nearly every subject, according to one review (Kroeger 1990).

In October 1991, CARL Systems introduced CARL UnCover2. It provides electronic document delivery as an additional service to UnCover. In September 1992, CARL Systems and Blackwell signed a letter of intent to develop and market UnCover2 jointly.

#### FAXON FINDER

In January 1993, Faxon Research Services (FRS) introduced a product similar to UnCover2 called Faxon Finder. Faxon, however, took a different approach from UnCover2 in building its database. Rather than relying on serials received in member libraries to build a database, Faxon defined a core list of journals using multiple resources, including the Faxon serial database and consultants and experts in various disciplines. Database coverage began with January 1, 1990. A preliminary goal was to include 11,000 journal titles—a goal that has nearly been met. The target audience for Faxon Finder is academic, research, business, and institutional libraries; journal distribution is fairly even among the disciplines.

Although both UnCover2 and Faxon Finder have roughly the same number of journal titles, UnCover2 has been criticized for not including more research-oriented journals. UnCover2 has the more current coverage of the two databases, with a reported 24-hour turn-around time for input into the database. Faxon inputs tables of contents for weekly journals within 24 hours, but tables of contents for journals other than weeklies reportedly take three to six days. Both products take data directly from the tables of contents. UnCover2 primarily indexes substantive journal articles, whereas Faxon Finder indexes a broader scope of items including, for example, editorials, letters to the editor, news briefs, and obituaries. Both systems provide access to articles primarily through keyword searching, although in the Faxon Finder system multiple word phrases are searched exactly as entered without allowing for intervening words, while the UnCover2 system does not impose this restriction. Both systems provide indexing of titles, subtitles, and other descriptive matter. Although users must learn search protocols unique to each product, both systems generally provide user-friendly access. Given these apparent basic similarities and noting the difference in years covered and method used for selecting journals for coverage, librarians might well assume that these two

TABLE 1  
SUPRAMOLECULAR CHEMISTRY

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	27	19	12	4	8	31	87.1	38.7	25.8
1992	19	16	10	7	3	26	73.1	38.5	11.5
1991	6	3	4	1	3	7	85.7	57.1	42.9
1990	8	7	2	1	1	9	88.9	22.2	11.1
Total	60	45	28	13	15	73	82.2	38.4	20.5

TABLE 2  
SUFFRAGE

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	14	8	18	12	6	26	53.8	69.2	23.1
1992	11	3	19	11	8	22	50.0	96.4	36.4
1991	16	6	22	12	10	28	57.1	78.6	35.7
1990	18	8	17	7	10	25	72.0	68.0	4.0
Total	59	25	76	34	34	101	58.8	75.2	33.7

TABLE 3  
MATTEL

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	2	0	6	4	2	6	33.3	100.0	33.3
1992	4	2	5	3	2	7	50.0	62.5	28.6
1991	2	1	5	5	0	6	40.0	80.0	0.0
1990	5	1	7	3	4	8	62.5	87.5	50.0
Total	13	4	23	15	8	27	48.1	85.2	29.6

products are essentially the same, and that searches in one or the other service would yield very similar responses.

#### STATEMENT OF THE PROBLEM

Are librarians getting the same basic product, whether they buy Carl UnCover2 or Faxon Finder services for their users?

Two research questions were generated: (1) What is the proportion of overlap between Faxon Finder and CARL UnCover2 when journal articles are compared on an article by article basis? and (2) What is the proportion of overlap in journals covered? It was expected that each system would have a relatively small number (25% or less) of journal articles that

TABLE 4

## AFDC

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	14	4	11	1	10	15	93.3	73.3	66.7
1992	23	14	9	0	9	23	100.0	39.1	39.1
1991	16	6	11	1	10	17	94.1	64.7	58.8
1990	5	1	5	1	4	6	83.3	83.3	66.7
Total	58	25	36	3	33	61	95.1	59.0	54.1

TABLE 5

## WILLA CATHER

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	0	0	11	11	0	11	0.0	100.0	0.0
1992	5	1	25	21	4	26	19.2	96.2	15.4
1991	1	0	16	15	1	16	6.3	100.0	6.3
1990	5	0	32	27	5	32	15.6	100.0	15.6
Total	11	1	84	74	10	85	12.9	98.8	11.8

TABLE 6

## CALVIN &amp; HOBBS

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	4	2	2	0	2	4	50.0	50.0	50.0
1992	1	1	0	0	0	1	100.0	0.0	0.0
1991	0	0	0	0	0	0	0.0	0.0	0.0
1990	0	0	0	0	0	0	0.0	0.0	0.0
Total	5	3	2	0	2	5	100.0	40.0	40.0

were unique. It was also expected that there would be a small number of journals unique to each product and that, regardless of the way in which journals were selected to be included for indexing (by member libraries or by a research team), the result would be roughly the same.

To answer these questions we looked at subjects in various disciplines, ap-

proaching the two databases as student users might approach them, and compared the systems from the point of view of journal article overlap and journal coverage overlap. Specifically, seven topics that would be of interest to undergraduate students were identified, and using exactly the same search strategies on the same day, lists of the matches to these

TABLE 7  
MAMMOGRAMS

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	14	8	13	7	6	21	66.7	61.9	28.6
1992	14	3	21	10	11	14	58.3	87.5	45.8
1991	10	2	17	9	8	19	52.6	89.5	42.1
1990	5	2	17	14	3	19	26.3	89.5	15.8
Total	43	15	68	40	28	83	51.8	81.9	33.7

TABLE 8  
TOTALS FOR ALL SUBJECTS SEARCHES, BY ARTICLE COUNT

Year	CARL UnCover2		Faxon			Comparisons			
	No. Cites	No. Unique	No. Cites	No. Unique	No. Overlap	Total Possible No. Cites	% Covered by CARL	% Covered by Faxon	% Overlap
1993	75	41	73	39	34	114	65.8	64.0	29.8
1992	77	41	89	53	53	130	59.2	68.5	27.7
1991	51	18	74	41	41	92	55.4	80.4	35.9
1990	46	19	80	53	53	99	46.5	80.8	27.3
Total	249	119	316	186	186	435	57.2	72.6	29.9

searches were produced. These lists were then compared to one another, both at the journal level and the article level, and the results were compiled from counts of the overlap. Only articles published from 1990 onward were selected, since Faxon Finder began its coverage in that year.

The seven topics selected (with their representative disciplines noted in parentheses) were Mammograms (medicine; health sciences); Cather, Willa (literature); Aid to Families with Dependent Children, searched as AFDC (social sciences); Calvin & Hobbes (popular culture); Supramolecular Chemistry (chemistry, sciences); Mattel, the toy manufacturer (business, economics); and Suffrage (political science, women's studies). The searching was conducted and completed in January 1994. In both systems, keyword searching was performed, using the article field provided and the terms listed above as topics.

## FINDINGS

### ARTICLE OVERLAP

For the seven disciplines under study, the average overlap was only 29.9%, with a low of 11.8% overlap for articles on Willa Cather and a high of 54.1% for articles on AFDC. The total overlap and the overlap by discipline are shown in tables 1 through 8. Also included in the tables are data on the total number of possible citations found by searching both systems and the percentage covered by both Faxon Finder and UnCover2 separately. The tables also show the percent of each discipline covered by each system. Overall, Faxon had better subject coverage than did UnCover2 (72.6% compared to 57.2%). Faxon did better in covering the subjects of Mammograms, Willa Cather, Mattel, and Suffrage. UnCover2 yielded better results for AFDC, Supramolecular Chemistry, and Calvin & Hobbes (although it should be noted that the Calvin & Hobbes

TABLE 9  
 JOURNAL TITLES COVERED BY UNCOVER2 AND FAXON FINDER:  
 OVERLAP AND UNIQUE TITLES

Subjects	In Faxon	In UnCover2	No. Overlap			
Mammography	26	13	19	44.8	22.4	32.8
Suffrage	30	26	32	34.1	29.5	36.4
Willa Cather	36	4	11	70.6	7.8	21.6
Sup. Chemistry	8	17	8	24.2	51.5	24.2
Calvin & Hobbes	0	3	2	0.0	60.0	40.0
AFDC	4	17	18	10.3	43.6	46.2
Mattel	6	4	8	33.3	22.2	44.4
Total	110	84	98	37.7	22.8	33.6

category yielded relatively insignificant results from both systems, a problem undoubtedly associated with the topic rather than the systems).

It also might be expected that overlap would grow with the years. If one assumes that the systems are relatively similar and are both growing, and that there are a finite number of journals, the overlap of journals covered might be expected to grow larger and larger. In fact, the results of this study reveal not only a lack of a discernible pattern to the overlap, but some anomalies that seem to defy explanation. For example, for the topic Willa Cather, no 1993 articles were found in UnCover2, out of 11 possible citations found by searching these two databases (see table 5). Similarly, for the topic Supramolecular Chemistry, UnCover2 included more than twice the number of citations found in Faxon Finder for 1993 (see table 1). Both of these topics represent aspects of core disciplines that one might expect both products to handle equally well. Data entry error might account for this discrepancy, but only a more detailed study of both Chemistry and American Literature on these systems could verify the reason for these differences.

#### JOURNAL OVERLAP

The average overlap in journals for all disciplines covered was only 33.6%. As

can be seen in table 9, the highest level of overlap with journals covered was for the topic AFDC, at slightly more than 46%. Not surprisingly, the article overlap by topic was roughly equal to the journal overlap by topic in most instances. Journal and article level overlaps did differ for the topics Willa Cather and Mattel. This is explained in part through indexing errors. In the case of Willa Cather, the UnCover2 system missed an entire 1990 issue of *Modern Fiction Studies*, a journal regularly covered by UnCover2.

In addition to looking at the overlap in journals covered, the quality of the journals indexed for these topics was considered. Subject specialists who work with these topics on a daily basis—one for each discipline—were asked their opinions about the two lists of journals that were generated from these searches. They were questioned about their overall opinion of each vendor's lists, about omission of important journals, and about the research level of the journals. These consultants agreed that both sets of titles from Faxon Finder and UnCover2 were suitable for both undergraduate and graduate users, but that important titles seemed to be missing from both lists. There is, however, one important caveat regarding this issue: the lists the consultants examined do not represent all of the journals that each system covers; rather they represent only those journals generated by the seven searches. Still, useful points did emerge.

Perhaps the most salient point for this review came from the Mattel list consultant who noted that neither system covered business reports that would produce useful citations.

Overall, the responses of the subject specialists indicated that the journals from both lists represented a reasonable overview of the subject in question. Faxon Finder was regarded as having a more thorough and broad coverage of the subjects than UnCover2, which was described in some cases as having haphazard coverage. This difference was not substantial, however, and most of the specialists noted that they would recommend either database to their users as long as the users did not consider the searches in these databases to be comprehensive subject searches.

### CONCLUSIONS

The results of this study mirror the different origins of these two systems. Both systems performed relatively well, but clearly cover different ground. The Faxon Finder product seems more systematic and does a good job covering the core journals, but not necessarily the fringes. UnCover2 reflects the strengths, interests, and biases of the contributing libraries. Quantitatively, based on this sample, Faxon Finder appears to be a stronger product than UnCover2, although it is disturbing to note how many unique articles each system carries. It is this startling lack of overlap among both articles and journals that is the essential finding of this study. A standard, general purpose database system has yet to be found, and it is not yet safe to make assumptions about the nature of journal databases. Users, then, should be cautioned about the results of searches drawn from these databases, for this reason and for the many other reasons librarians have already cited.

In considering the use of these two systems, a number of items should be noted. The first—that both systems yield entirely different results when search words are flipped or changed—should come as no surprise. Searching the term Mammogram, for instance, displayed 68

citations from Faxon Finder and 45 citations from UnCover2. However, when the term Mammograph was tested later, Faxon Finder produced 628 hits, while UnCover2 found 383. Women's Suffrage was substituted for the term Suffrage and yielded only 15 articles from Faxon Finder and 16 from UnCover2, compared to 76 and 69, respectively, for Suffrage. This suggests that it would be useful for the user (especially the uninitiated) to be aided with prompts suggesting other terms. Another observation is that citations in Faxon Finder include the pagination as part of the basic citation. This is very useful information that is lacking in UnCover2. The length of an article is often important to the user.

In our study, we also made a cursory review of the availability of the articles and the costs associated with document delivery. Two articles available through both databases were selected. One article from the field of supramolecular chemistry was available from both systems, but Faxon charged \$5.50 more in document fees and \$1.25 more in copyright fees than did UnCover2. Faxon also charged an additional mailing cost, using either U.S. mail or a courier service. Overall, the Faxon article was almost twice as expensive as the UnCover2 article. The other article, about mammograms, was unavailable from UnCover2 (with a note that the publisher forbids delivery of the article). Faxon made this article available for an \$11.00 document fee, a \$3.00 copyright fee, and a fee for choice in mailing options. This sample is obviously too small for general use, but does raise questions about the relative cost of material and the need for further study in this area.

The two vendors of these systems were polled for their views on the results of this study. Only Faxon responded, focusing on access and the ease of use of their system, but gave no explanation for the lack of overlap between the two systems. Both vendors seem intent on continuing the development of these systems. As other vendors enter the field it will be interesting to see what effect, if any, such newcomers will have on the UnCover2 and Faxon Finder systems.

### FUTURE RESEARCH

This research represents a relatively new area of exploration and could provide librarians with a great deal of information as they choose effective journal database sources. Research comparing these general services with subject-specific databases could help inform decisions about databases that might prove most helpful to users. How well do the general systems stand-up to the in-depth systems? Do smaller libraries miss out on a lot of material when they choose Faxon Finder, UnCover2, or a similar system, and if so, in what areas?

There are also a number of additional general systems that will reach the library market soon, and their databases need to be subjected to the kind of scrutiny seen here and in other studies. Other components of these kinds of tests include citation analysis of journals indexed, correlation studies between articles ordered and journals held within individual libraries, and error rate within databases. The cost issues associated with document delivery should be addressed as well.

### SUMMARY

Database searching and document delivery systems are appealing to both librarians and users for a variety of reasons. Users benefit from "one-stop shopping" and a good overview of a subject area.

User needs can be more readily satisfied without extensive journal holdings and cumbersome interlibrary loan procedures. While differences among systems can be expected, we are alerted by this study to the fact that the differences are more troubling and run deeper than search capabilities and logic-retrieval problems. The databases can and do have significant differences, and coverage can be less than expected. Librarians responsible for selection and use of these databases need to review the development of them and closely monitor their growth.

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# Subject Cataloging of Chicano Literature

Robert L. Mowery

*Subject headings and classification numbers in catalog records for books on Chicano literature are surveyed. Although Library of Congress subject headings containing the words Mexican American(s) appear in 58% of the records for collections and secondary works, they appear in only 39% of the records for works of individual authors. But these subject headings appear in a higher percentage of the records for both groups of books than do Bilindex subject headings, Library of Congress Classification numbers, and Dewey Decimal Classification numbers that associate these books with Mexican-American literature. Subject cataloging of the works of individual authors is especially problematic.*

Chicano literature has won a place in the curriculum of many American colleges and universities. Though once largely limited to courses taught by specialists on a few campuses, Chicano literature is now included in courses offered on many campuses. Many of these courses are contemporary American literature courses that emphasize the diverse cultural roots of the American experience. In addition to literature written by Native Americans, African-Americans, and Asian-Americans, such courses typically include works written by Chicano and other Latino authors. Many campuses also offer at least one course that focuses exclusively on Chicano literature. The study of Chicano literature is also an integral part of Chicano Studies programs, which have been established on various campuses.

Various types of patrons need to be able to identify Chicano literature holdings in an academic library. For instance,

a professor planning a course on Chicano literature might need a detailed overview of the library's holdings; similarly, a campus administrator preparing for an outside evaluation of the institution's Chicano Studies program might need the same sort of overview. A student trying to decide on a term paper topic on Chicano literature might ask about the relevant primary and secondary resources in the library, while a townspeople wishing to browse in the Chicano literature collection might ask about the extent and location of the library's collection. In each of these instances, a swift and effective way of identifying the library's holdings of Chicano literature is needed.

To what extent is this need met by the subject headings and classification numbers assigned to Chicano literature? The library literature is silent concerning this question. Thus, in an attempt to respond to this question, I surveyed the *Library of*

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*Congress Subject Headings (LCSH)*, *Bilindex* subject headings, Library of Congress *Classification (LCC)* numbers, and *Dewey Decimal Classification (DDC)* numbers in catalog records for the books listed in a recently published bibliography of Chicano literature (Schein 1993).

Although Schein lists 296 titles, 27 of these titles are periodical articles, duplicate entries, or anthologies containing comparatively few works of Chicano literature. Catalog records for 268 of the other 269 titles were available in the OCLC Online Computer Library Center's Online Union Catalog (OLUC) during July 1994. The Library of Congress (LC) created and input the catalog records for 212 of these titles (79.1%). Records for the other 56 titles were created or input by other libraries, many of which are located in the Southwest or California. A number of these records have also been modified by one or more additional libraries.

One catalog record for each title was selected for inclusion in this study. When two or more OLUC records were available for a given title, the record that was created and input by LC was chosen (because this is the record that is preferred by many cataloging departments in academic libraries). When none of the available records for a given title was created and input by LC, the record offering the most extensive subject access was chosen.

Schein's list contains two groups of books. Fifty-five books are collections of works by two or more authors or secondary works that focus on the works of two or more authors. I first surveyed the *LCSH*, *Bilindex* subject headings, *LCC* numbers, and *DDC* numbers in the OLUC records for these 55 books. The other 213 titles are works of individual authors and include fiction, poetry, drama, prose, and juvenile literature. I reviewed the subject headings and classification numbers in the catalog records for these 213 works second.

#### COLLECTIONS AND SECONDARY WORKS

I will begin by focusing on the subject headings and classification numbers in the

catalog records for the 55 collections and secondary works in Schein's list. These works include 45 collections and 10 secondary works.

Library of Congress subject headings that contain the words MEXICAN AMERICAN(S) appear in 32 of the 55 records for these books. These words appear in two or more headings in 28 of these 32 records. The words MEXICAN AMERICAN(S) are the entry words in one or more subject headings in 30 of these records. Several examples of these headings are listed below:

MEXICAN AMERICAN FICTION  
(SPANISH)—20TH CENTURY  
MEXICAN AMERICAN LITERATURE  
(SPANISH)—HISTORY AND  
CRITICISM  
MEXICAN AMERICAN WOMEN—  
LITERARY COLLECTIONS  
MEXICAN AMERICANS—DRAMA  
MEXICAN AMERICANS—FICTION  
MEXICAN AMERICANS—LITERARY  
COLLECTIONS  
MEXICAN AMERICANS—POETRY

While headings such as MEXICAN AMERICAN FICTION (SPANISH) and MEXICAN AMERICAN LITERATURE (SPANISH) clearly refer to Mexican-American literature, headings such as MEXICAN AMERICANS—DRAMA and MEXICAN AMERICANS—FICTION can be assigned to works written about Mexican-Americans by other authors. To clarify the question of authorship, the records with headings of the latter type typically also have headings like AMERICAN LITERATURE—MEXICAN AMERICAN AUTHORS or SHORT STORIES, AMERICAN—MEXICAN AMERICAN AUTHORS that contain the subdivision MEXICAN AMERICAN AUTHORS. This subdivision appears in one or more subject headings in 27 of the records for collections and secondary works. Many records therefore have both a subject heading containing the subdivision MEXICAN AMERICAN AUTHORS and a subject heading whose entry words are MEXICAN AMERICAN(S).

Although 32 records for collections and secondary works have LC subject

headings that contain the words MEXICAN AMERICAN(S), none of the titles of these books contains these words. However, 25 of these 32 titles contain the term "Chicano" (or the feminine singular term "Chicana," or the plural of either term). Because LC prefers the term MEXICAN AMERICAN(S), "Chicano" does not occur in any of the LC subject headings in these records. A "use" reference under the entry "Chicano authors" in the 17th edition of *LCSH*, for example, directs users to the heading MEXICAN AMERICAN AUTHORS, while a use reference under the entry "Chicano literature (English)" directs users to the heading AMERICAN LITERATURE—MEXICAN AMERICAN AUTHORS (*LCSH* 1994, 1: 884). In contrast, various California libraries and the Hennepin County Library, headquartered in Minnetonka, Minnesota, have adopted subject headings that contain the term "Chicano."

The records for nine collections have one or more subject headings containing the term HISPANIC AMERICAN(S). A note under the heading HISPANIC AMERICANS in the 17th edition of *LCSH* explains that this heading refers to U.S. citizens of Latin American descent (*LCSH* 1994, 2: 2260). Although the words HISPANIC AMERICAN(S) are the entry words in headings like HISPANIC AMERICAN WOMEN—LITERARY COLLECTIONS and HISPANIC AMERICAN LITERATURE (SPANISH), they appear in subdivisions in headings like AMERICAN LITERATURE—HISPANIC AMERICAN AUTHORS and AMERICAN POETRY—HISPANIC AMERICAN AUTHORS. Librarians need to remind patrons who are searching for Mexican-American literature that they might be able to find relevant material by using headings containing the broader term HISPANIC AMERICAN(S).

Forty-one of the 55 records for collections and secondary works have one or more *LCSH* containing the terms MEXICAN AMERICAN(S) or HISPANIC AMERICAN(S). It is surprising that these terms do not appear in any of the subject headings in the 14 other records for collections and secondary works, for the titles

of several of these works include Spanish words. The records for 4 collections have subject headings containing the word MINORITY. All four have the heading MINORITY WOMEN—UNITED STATES—LITERARY COLLECTIONS and all four also have the heading AMERICAN LITERATURE—MINORITY AUTHORS (with or without an additional subdivision). Such headings pose two problems: First, patrons might not think of such headings when searching for Chicano literature; and, second, searches by such headings might lead to titles that do not emphasize or even refer to Chicano literature. Similar problems are posed by the subject headings AMERICAN POETRY—TEXAS and CALIFORNIA—LITERARY COLLECTIONS, which appear in the records for other collections. The assignment of additional subject headings containing the term MEXICAN AMERICAN(S) would establish explicit links between these records and Mexican-American literature.

#### BILINDEX SUBJECT HEADINGS

During 1984, the California Spanish Language Data Base published a lengthy list of *Bilindex* subject headings that provide "authorized" Spanish equivalents of *LCSH* (*Bilindex* 1984). The *Bilindex* heading MEXICANO-AMERICANOS, for example, represents the authorized Spanish equivalent of the LC heading MEXICAN AMERICANS (it should be noted that, following LC usage, *Bilindex* headings do not use the word "Chicano"). The original list of *Bilindex* headings has been augmented by two supplements (*Bilindex* 1986, 1992). Though a third supplement has been announced, its publication has been delayed.

Six of the records for collections and secondary works examined for this study have *Bilindex* headings like MEXICANO-AMERICANOS—COLECCIONES LITERARIAS or MEXICANO-AMERICANOS—TEATRO whose entry term is MEXICANO-AMERICANOS; all of these headings are Spanish equivalents of LC headings that also appear in these records.

Five of these records also have *Bilindex* headings like LITERATURA ESTADOUNIDENSE—AUTORES MEXICANO-AMERICANOS that possess the subdivision AUTORES MEXICANO-AMERICANOS; again, all of these headings are Spanish equivalents of LC headings in these records. Three other records have *Bilindex* headings containing the word HISPANOESTADOUNIDENSE, the Spanish translation of the term HISPANIC AMERICAN, that appears in LC headings in these records.

Several other records for collections and secondary works have *Bilindex* headings like LITERATURA ESTADOUNIDENSE—CALIFORNIA or MUJERES DE MINORIAS—ESTADOS UNIDOS—COLECCIONES that do not explicitly refer to Mexican-Americans or Hispanic-Americans. These headings are the Spanish equivalents of LC headings that also fail to refer to Mexican-Americans or Hispanic-Americans.

Because LC did not assign any of these *Bilindex* headings, their presence in OLC records reflects the work of other libraries. Many of these records identify Texas A&M University—Kingsville as a cataloging source, usually as a modifier of records created and input by LC. Various other libraries (mainly public libraries) in such states as California, Florida, and Illinois have also added *Bilindex* headings to OLC catalog records. *Bilindex* headings provide a potentially valuable alternative for Spanish-speaking patrons who are unable to use English subject headings or prefer to use Spanish headings (Fina 1993). However, since *Bilindex* headings appear in only a fraction of the records for Mexican-American literature, searches by these headings will uncover only a fraction of the records for this literature.

#### LIBRARY OF CONGRESS CLASSIFICATION NUMBERS

Twenty-six of the 55 records for collections and secondary works have LCC numbers that are explicitly associated with Mexican-American literature. Six of these class numbers are:

- PS153.M4, history of Mexican-American literature
- PS508.M4, collections of literature by Mexican-Americans
- PS591.M49, collections of poetry by Mexican-Americans
- PS628.M4, collections of drama by Mexican-Americans
- PS647.M49, collections of prose by Mexican-Americans
- Z1229.M48, bibliography of Mexican-American literature

Note that all of these class numbers have the Cutter .M4, .M48 or .M49 for "Mexican." While 12 of the books in Schein's list have been classed in PS508.M4 and 5 in PS153.M4, no more than 3 others have been classed in any of the other numbers listed above. Though all of these class numbers are reserved for Mexican-American literature, none of them directly follows any of the others in the LCC schedules.

Seven books have been assigned PS numbers for Hispanic-American literature, and 4 of these 7 have been classed in PS508.H57, the number for collections of literature by Hispanic-Americans. Four other books have been classed within PQ7070–7079.2, the range for Spanish literature of the United States and Canada, where they are intermixed with the works of other Latino authors. The other 17 records for collections and secondary works have LCC numbers like PQ7087.E5 (English translations of Spanish-American literature), PS509.F44 (collections of American literature on feminism) or PS615 (collections of contemporary American poetry), which are not defined as numbers for Mexican-American literature. None of these records has an alternative LCC number.

#### DEWEY DECIMAL CLASSIFICATION NUMBERS

Although 50 of the 55 records for collections and secondary works have DDC numbers, only 18 of these records have DDC numbers for Mexican-American literature. Fourteen have DDC numbers that conclude with the seven-digit sequence

6872073. One of these numbers is 810.986872073, which can be analyzed as follows:

<b>81</b>	<b>American literature in English</b>
810.9	History, description, critical appraisal of works in more than one form
810.98	Literature for and by racial, ethnic, national groups
810.9868	Spanish Americans
810.986872	Middle America Mexico
810.986872073	United States

This *DDC* number has 9 digits to the right of the decimal point, and the 13 other *DDC* numbers that conclude with 6872073 have an average of 11.8 digits to the right of the decimal point. Thus, all of these numbers tend to be long. The sequence 6872073, which refers to Mexicans (or Middle-Americans) in the United States, carries the same meaning in the *DDC* numbers in 13 other records, most of which are built on the base number 81 (American literature in English) or the base number 86 (Spanish literature).

Four other records have *DDC* numbers that conclude with the 4-digit sequence 6872, which refers to Mexicans (or Middle-Americans). While this sequence has the virtue of being 3 digits shorter than 6872073, it fails to refer to the United States. This deficiency is offset by the fact that all 4 of the *DDC* numbers that close with 6872 are built on the base number 81, the base number for American literature in English. One such number is 810.986872, the class number for history and criticism of American literature in English for and by Mexicans (or Middle-Americans). The 14 *DDC* numbers that conclude with 6872073 and the 4 that conclude with 6872 are scattered throughout the numbers for bibliography, American literature, American poetry, American drama, American fiction, Spanish literature, and Spanish fiction. Fewer records have *DDC* numbers than *LCC* numbers (26 records) that are specifically associated with Mexican-American literature.

One record has the *DDC* number 860.8086873, the number for collections of Spanish literary works written by Spanish-Americans in the United States. Though this number refers to Spanish-Americans, it does not specifically refer to Mexican-Americans. Most of the *DDC* numbers in the other records for collections and secondary works are general numbers for collections of American literature, American poetry, and American short stories. These numbers obviously fail to associate these records with Mexican-American literature.

#### INDIVIDUAL AUTHORS

After completing my survey of records for collections and secondary works, I next surveyed the subject headings and classification numbers in the 213 catalog records for the works of individual authors included in Schein's list. These 213 records include 104 records for fiction, 70 for poetry, 13 apiece for prose and juvenile fiction, 10 for drama, and 3 for other genres.

*LC* subject headings appear in 71 of the 104 records for the fiction of individual authors, and 36 of these records have one or more subject headings containing the words MEXICAN AMERICAN(S). Many of these 36 records have headings such as MEXICAN AMERICANS—FICTION and MEXICAN AMERICANS—NEW MEXICO—FICTION, whose entry words are MEXICAN AMERICANS and whose final element is the form subdivision FICTION. These headings do not necessarily identify the works as those of Mexican-American authors, since such headings can also be assigned to works written about Mexican-Americans by other authors. Unlike the records for collections and secondary works, comparatively few of the records for fiction have headings like AMERICAN FICTION—MEXICAN AMERICAN AUTHORS, which specify authorship. In addition, only a third of the 104 records for fiction have even one subject heading containing the words MEXICAN AMERICAN(S).

*LC* headings appear in 37 of the 70 records for the poetry of individual

authors, and 27 of these records (39%) have one or more subject headings containing the words MEXICAN AMERICAN(S). The form heading AMERICAN POETRY—MEXICAN AMERICAN AUTHORS is especially common, occurring in 17 of these records. Four records that have this heading also have the heading MEXICAN AMERICAN POETRY (SPANISH). Topical headings occur much less frequently in the records for poetry than in the records for fiction, although the heading MEXICAN AMERICANS—POETRY appears in 5 records.

LC headings containing the words MEXICAN AMERICAN(S) also appear in the records for works by individual authors in the areas of drama, prose, and juvenile literature. The heading MEXICAN AMERICANS—DRAMA appears in several records for drama, and the heading MEXICAN AMERICANS—FICTION occurs in several records for juvenile works. More than half of the biographies and other prose works have headings like MEXICAN AMERICANS—ETHNIC IDENTITY and MEXICAN AMERICANS—CALIFORNIA—BIOGRAPHY, whose entry words are MEXICAN AMERICANS. Unlike the records for collections and secondary works, comparatively few of the records for the works of individual authors have subject headings containing the words HISPANIC AMERICAN(S).

During the past decade many voices have lobbied for the assignment of additional subject headings to works of fiction, drama, and poetry (ALCTS 1990; Olderr 1991; Hayes 1992), and in 1991 OCLC and LC inaugurated a program designed to add more subject headings to the records for fiction (Quinn and Rogers 1992; OCLC 1992). The impact of this program on the records examined in this study is unclear, for there are no conspicuous differences between the patterns associated with the subject headings for fiction published before and after the inauguration of this program.

#### **BILINDEX SUBJECT HEADINGS**

*Bilindex* subject headings appear in 31 of

the 104 records for the fiction of individual authors, and most of these headings contain the term MEXICANO-AMERICANO. Examples of these headings include the topical headings FAMILIAS MEXICANO-AMERICANAS—NOVELA and MEXICANO-AMERICANOS—VIDA SOCIAL Y COSTUMBRES—NOVELA and the form headings CUENTOS ESTADOUNIDENSES—AUTORES MEXICANO-AMERICANOS and NOVELA MEXICANO-AMERICANA (ESPAÑOL). *Bilindex* headings also appear in 23 of the 70 records for the poetry of individual authors; most of these headings contain the term MEXICANO-AMERICANO. Seventeen of these records have the form heading POESIA ESTADOUNIDENSE—AUTORES MEXICANO-AMERICANOS, and 4 also have the form heading POESIA MEXICANO-AMERICANA (ESPAÑOL). *Bilindex* headings containing the term MEXICANO-AMERICANO also occur in 6 records for the other genres of literature.

Like the *Bilindex* headings assigned to collections and secondary works, most of these *Bilindex* headings are the Spanish equivalents of LC headings found in these records. And, again like the *Bilindex* headings for collections and secondary works, most of these *Bilindex* headings are in records that name Texas A&M University—Kingsville or other libraries in California and other states as modifiers of records created and input by LC.

#### **LIBRARY OF CONGRESS CLASSIFICATION NUMBERS**

Although 212 of the 213 records for the works of individual authors have LCC numbers, none of these records has a class number that is designated for Mexican-American literature. The records that come closest to having such numbers are the 31 records that have the class numbers PQ7079 and PQ7079.2. Though these class numbers are reserved for individual authors of Spanish literature of the United States and Canada, they intermix the works of Mexican-Americans with the works of Cuban-Americans and other

American and Canadian authors of Spanish literature. Two children's books are classed in PZ73, where they are classed as Spanish juvenile belles lettres (but not as the works of Mexican-American authors). Five records for Spanish titles have numbers within PQ7297-7298.36, the range for individual authors of Mexican literature; however, four of these numbers are misleading since they are in records for books that were written by Sergio Elizondo many years after he immigrated to the United States.

More than 150 records for the works of individual authors have LCC numbers within PS3550-3576, the range for contemporary (1961-) individual American authors. These works, which represent nearly three-fourths of the works by individual authors in this study, are classed as works of American authors but not as works of Mexican-American authors. Just as the PS schedules do not classify individual African-American authors or Italian-American authors by their racial or ethnic identity, they do not classify individual Mexican-American authors by their ethnic identity. Though these schedules provide many Cutters for collections and for secondary works on Mexican-American literature, they class individual Mexican-American authors as American authors and intermix them (in alphabetical order) with other American authors.

Both the PQ schedules and the PS schedules instruct classifiers to class works "by and about Mexican-American (Chicano) authors writing in English or mixed English-Spanish" in PS. This note and similar notes appear in the literature schedules under PQ7070-7079.2, before PQ7100-7295 and under such PS numbers as PS153.M4, PS508.M4, PS591.M49, PS628.M4, and PS647.M49. In accordance with these instructions, many of the works classed in PS3550-3576 intermix Spanish and English. However, as noted above, the works of individual Mexican-American authors who write in Spanish are classed in PQ.

Two novels that were published during the 1970s are classed in PZ4, the general number for contemporary (1951-) individual authors of fiction in English. Al-

though these records have alternative numbers, they stand within PS3550-3576. Seven juvenile books are classed in PZ7, the general number for juvenile belles lettres. A few works have been assigned numbers such as E184.M5 and F870.M5, which are numbers explicitly associated with Mexican-Americans; however, these works are classed as history rather than literature.

The Chicano Studies Library of the University of California at Berkeley classes Chicano literature in a locally-created subclass PX. Unlike LC's subclass PS, subclass PX provides a range of numbers reserved for individual Chicano authors. PX enables these authors to be classed as Chicano authors and not simply as American authors. These PX schedules have, however, never been published, and PX numbers do not appear in OLC records.

#### **DEWEY DECIMAL CLASSIFICATION NUMBERS**

DDC numbers appear in the records for 164 of the 213 works of individual authors. Though 155 of these numbers are literature numbers in 810-818 and 860-868, none of them is specifically associated with Mexican-Americans or even with Hispanic-Americans. Most are general numbers, such as 811.54 (contemporary [1945-] American poetry), 813.54 (contemporary [1945-] American fiction), and 863 (Spanish fiction). The only works of individual authors that have been assigned DDC numbers associated with Mexican-Americans are two autobiographies classed in the 978-979; however, these books are classed as history rather than literature.

#### **OVERVIEW AND DISCUSSION**

Scholars have vigorously debated the definition of Chicano literature. Because the term "Chicano" first attained widespread use during the 1960s, some critics have traced the beginning of Chicano literature to this decade. Even Luis Leal, who argues for a much broader definition of Chicano literature, admits that the literature produced during the 1960s and 1970s is

the literature that can properly be called "Chicano" (Lomelí and Shirley 1989, xi). Leal and others, however, stress the continuity between this literature and the literature of earlier years. Limón, for example, locates various precursors of the Chicano poetry of the 1960s and 1970s in ballads and other poetry produced between 1848 and 1958 (Limón 1992, 7–77). Leal, by comparison, traces the origin of Chicano literature all the way back to the Spanish settlement of the Southwest (Leal 1979).

When Schein based her list of individual authors on the lists of authors included in "Chicano Writers: First Series" and "Chicano Writers: Second Series," edited by Francisco Lomelí and Carl Shirley (1989, 1992), she implicitly accepted the definition of Chicano literature adopted by these editors. Lomelí and Shirley accepted the definition proposed several years earlier by Martínez and Lomelí, who defined Chicano literature as "the literature written since 1848 by Americans of Mexican descent or by Mexicans in the United States who write about the Mexican-American experience" (Martínez and Lomelí 1985, xi; Lomelí and Shirley 1989, xv). Lomelí and Shirley covered the major authors and many of the minor authors of this literature in their "Chicano Writers" volumes. They also included a few authors who are neither Mexicans nor Mexican-Americans but whose works treat Chicano subjects and themes. More than 40% of the 116 authors in the "Chicano Writers" volumes were born during the 1940s, and three-fourths were born during the period 1930–1954. None of these authors was born after 1954.

Because Schein listed only books that were in print, she was able to list books for only 77 of the authors she identified. Again, more than 40% of this set of authors were born during the 1940s, while nearly 85% of them were born during the period 1930–1954. Although the editions Schein listed were published during the period 1968–1993, half of them were published during 1987 and 1993.

With this study I have shown that the *LCSH* in the *OLUC* records for the titles in Schein's list associate a higher propor-

tion of these records with Mexican-Americans and Mexican-American literature than do the *Bilindex* subject headings, *LCC* numbers, or *DDC* numbers in these records. *LCSH* containing the words MEXICAN AMERICAN(S) appear in 32 of the 55 records for collections and secondary works (58%), and all 32 of these records have at least one heading, such as AMERICAN LITERATURE—MEXICAN AMERICAN AUTHORS or MEXICAN AMERICAN FICTION (SPANISH), which explicitly refers to Mexican-American literature. *LC* headings containing the words MEXICAN AMERICAN(S) occur in 84 of the 213 records for the works of individual authors (39%), although many of these headings are topical headings. Thirty of these records have headings such as AMERICAN POETRY—MEXICAN AMERICAN AUTHORS or SHORT STORIES, AMERICAN—MEXICAN AMERICAN AUTHORS, which indicate that Mexican-Americans wrote these works.

More than 150 of the records in this study do not have any subject headings containing the words MEXICAN AMERICAN(S). Though 14 records have heading containing the words HISPANIC AMERICAN(S), many other records have headings such as DEATH—FICTION and SHORT STORIES, AMERICAN—NEW MEXICO that do not associate these records with Mexican-American literature. No subject headings appear in the records for 71 records, including 40 records for fiction.

*Bilindex* subject headings containing the term MEXICANO-AMERICANO appear in 6 of the 55 records for collections and secondary works (11%) and 47 of the 213 records for the works of individual authors (22%).

*LCC* numbers for Mexican-American literature appear in 26 of the records for collections and secondary works (47%), while *LCC* numbers for Hispanic-American literature appear in seven others. None of the records for the works of individual authors has such a number, although 31 of these records have *LCC* numbers for Spanish literature of the United States and Canada.

Although DDC numbers for Mexican-American literature appear in 18 of the records for collections and secondary works (33%), they do not appear in any of the records for the works of individual writers.

Other studies, such as those based on random samples of the titles in more exhaustive bibliographies of Chicano literature, might yield different results. Certain patterns uncovered in this study, however, would probably reappear in studies based on other samples. Just as many of the records for the works of individual authors in this study have, for example, no subject headings that refer to Mexican-Americans or Mexican-American literature, many of the records for the works of individual authors listed in other bibliographies probably also lack such headings.

Although LCSH in the records for the collections and secondary works in this study associate 58% of these titles with Mexican-American literature, the LCC numbers in these records associate only 47% of these titles with this literature, the DDC numbers only 33%, and the *Bilindex* headings only 11%. LC headings in the records for the works of individual authors associate 39% of these works with Mexican-Americans or Mexican-American literature, while the *Bilindex* headings in these records associate 22% of such works with Mexican-Americans or their literature. However, none of the LCC numbers or DDC numbers in these records are numbers for Mexican-American literature. Librarians who wish to guide patrons to their Chicano literature holdings need to recognize that many of the catalog records for this literature have neither subject headings nor classification numbers that are explicitly associated with this literature.

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# The Concept of Inadequacy in Uniform Titles

David Nelson and Jonathan Marner

*The call for cataloging simplification prompts the question: where do we simplify? One logical place to start is with those areas that present complicated decision points for catalogers. One potentially confusing interpretive task is the application of Library of Congress rule interpretation (LCRI) 25.10 dealing with the determination of an "adequate" title. The authors propose the elimination of the LCRI dealing with the determination of whether a title is adequate or not. They instead call for a simple application of the concept of the differentiating uniform title, if applicable, thereby increasing access points and cataloging speed, two key objectives of cataloging simplification.*

Continuing interest in the uniform title in cataloging is amply demonstrated by the number of articles that have been published on the subject over the past several years. In treating the use of uniform titles in cataloging practice, these articles have tended to be conceptual in nature, focusing on uniform titles as a concept, rather than pedagogical. One particular situation in the application of uniform titles warrants more extensive examination due to its perceived ambiguity. This is the concept of "inadequate titles" as contained in *Anglo-American Cataloguing Rules, second edition (AACR2)* rule 25.10 (Works in a single form). Here, elements of principles, rules, and practice intertwine in a complicated fashion. In this paper we focus on the definition, evolution, and application of the concept of "inadequate titles" within the context of the stated purposes of the uniform title. It is our intention to provide practical guidance to catalogers who encounter this situation, as

well as to provide a platform upon which improvements to the catalog code can be made.

## PRINCIPLES AND USES OF UNIFORM TITLES

A uniform title is defined as follows in the AACR2 glossary:

1. the particular title by which a work is to be identified for cataloguing purposes. 2. the particular title used to distinguish the heading for a work from the heading for a different work. 3. A conventional collective title used to collocate publications of an author, composer, or corporate body containing several works or extracts, etc., from several works (e.g. complete works, several works in a particular literary or musical form).

Based upon this, Vellucci (1990) and Smiraglia (1989) hold that three "functions" for the uniform title can be discerned: (1) identification, (2) differentia-

tion, and (3) collation. Interestingly, and importantly, it can be questioned whether the facet of identification is not a function but instead the intellectual process that leads one to construct a uniform title whose function then is to either differentiate or collate. That is, the process of identification can be considered an activity that precedes the assignment of a uniform title. Once this need for a uniform title is determined, then an appropriate uniform title, characterized as either differentiating or collating (or combining elements of both), can be assigned. In any case, the essential duality of the uniform title can be seen from the glossary definition.

The enumeration in AACR2 25.1 of the uses of uniform titles is not as clear on these two functions of the uniform title, emphasizing the collocating function (25.1A):

A uniform title provides the means for bringing together all catalogue entries for a work when various manifestations (e.g. editions, translations) of it have appeared under various titles. A uniform title also provides identification for a work when the title by which it is known differs from the title proper of the item being catalogued. The need to use uniform titles varies from one catalogue to another and varies within one catalogue. Base the decision whether to use a uniform title in a particular instance on:

1. how well the work is known
2. how many manifestations of the work are involved
3. whether the main entry is under title (see 21.1C)
4. whether the work was originally in another language
5. the extent to which the catalogue is used for research purposes.

Although the rules in this chapter are stated as instructions, apply them according to the policy of the cataloguing agency.

Note that this general statement is focused exclusively on the collocating function and does not mention the important differentiating function. This reflects the continuing presence of ideas from earlier codes, in which the concern was more or less exclusively with the collocating func-

tion. However, it is the Library of Congress rule interpretations (LCRI) that shift the focus of the uniform title to that of the differentiating role, especially with the language of LCRI 25.5B, ostensibly for serials and series only, but also pertaining to other situations. The uniform title can thus be seen as a type of umbrella that provides shelter for various purposes. It is within this context—i.e., the uniform title as a differentiating device—that the concept of inadequacy of titles becomes confusing when applied to sections 8, 9, and 10 of chapter 25. These sections will next be examined with respect to their interaction with this concept.

#### AACR2 25.8 WORKS

The collective uniform title "Works" is assigned to an item that consists of, or purports to be, the complete works of a person or corporate body (*Cataloging Service Bulletin* [hereafter *CSB*] 11, Winter 1981), including those that are complete at the time of publication. LC further provides that, in order to avoid potential conflicts, the date of publication should be added to every instance of "Works." If further differentiation is needed, the publisher's name can be added. Thus, this collective uniform title combines elements of both collocation (Works, etc.) and differentiation (dates). Note again that the differentiating function comes from the LCRIs, not AACR2 itself. This is a very important point.

Of particular importance in the context of this discussion is the fact that the "Works" uniform title is always assigned when a particular item's content is judged appropriate, i.e., when the item consists of an author's complete works. It is irrelevant whether the title proper of the item represents the item's contents or not; once the identifying process is complete, based on the item's content, the uniform title is automatically assigned. This is in contradiction to the concept of inadequacy, which will be examined later.

#### AACR2 25.9 SELECTIONS

AACR2 defines the use of "Selections" for

TABLE 1  
MULTI-FORM OR ONE FORM AUTHORS

Type of Work	Multi-Form Author	One-Form Author
Some plays	1. Plays. Selections	5. Selections
Complete plays	2. Plays	6. Works
Some or all plays + some or all other Works (not complete)	3. Selections	—
Complete works	4. Works	—

"items consisting of three or more works in various forms, or in one form if the person created works in one form only, and for items consisting of extracts, etc. from the works of one person." *CSB 11* (Winter 1981) extends authorship to corporate bodies. A slight terminological change appeared in *CSB 16* (Spring 1982), when "three or more works" was replaced by "partial collections." This appears to be only semantic and not a change in scope, since *AACR2's* glossary (1988, 616) defines collection as follows: "Three or more independent works or parts of works by one author published together."

The division of "Selections" authors into what can be called "one-form authors" and "more than one-form authors," based on the definition above, has been evolving. When developing a historical perspective, it is important to keep this distinction (and its changing definition) in mind, since at various points they have received different treatment with regard to adequacy of titles. *CSB 51* (Winter 1991) specifies that when deciding whether an author writes in one form or in more than one form, "assume that the author writes in two or more forms." *CSB 60* (Spring 1993) indicates that except in exceptional cases, when an established author is known to have written in one form only, it is to be assumed that an author writes in more than one form.

### Works and Selections

Having laid the basis with these definitional concepts, a comparison of "Selections" with "Works" can be meaningfully made. Starting with *CSB 13* (Summer

1981) "Selections" receives the same additions of date and publisher as does "Works." Until *CSB 51* (Winter 1991) (Winter 1991), assignment of "Selections" for "more than one-form authors" only was similar to "Works" in that it was automatic once the content of the item was judged appropriate without regard to the wording of the title proper. After this point, the concept of inadequacy (to be discussed below) was introduced to this category. It may be overlooked, though, that "one-form authors" of "Selections" (the minority of authors) have had to meet the more restrictive test of title adequacy since *CSB 16* (Spring 1982).

### AACR2 25.10 WORKS IN A SINGLE FORM

Collections of an author's work in one form are assigned a collective uniform title in accordance with the provisions of AACR2 25.10. If applicable, a title is chosen from the list provided in the section (Correspondence, Plays, Short stories, etc.) or the cataloger is empowered to formulate one (such as Posters). In lieu of a definition, these examples indicate that "form" is roughly synonymous with literary genre. A distinction must be made between various types of "selections" or "partial collections." This is related to the issue of one-form or multi-form authors. The possibilities may be summarized thus (see table 1): the criterion of inadequate title was first applied to "Selections" for one-form authors, then to "Plays" and "Plays. Selections," and finally "Selections" for multi-form authors.

TABLE 2  
 CHRONOLOGICAL OUTLINE OF TERM "INADEQUATE" OR "INDISTINCTIVE" IN CSB

CSB	AACR2	1 form 25.9	> 1 form 25.9	25.10	Indst.	No c.t.	Comments
13 (Su '81)	25.8-25.11			X	X	X	term 'inadequate' not mentioned
16 (Sp '82)	25.8-25.11						removed and applicable provisions moved into 25.9 and 25.10
16	25.9	X			X	X	
16	25.10	X		X	X	X	items not requiring a u.t. treated as 'single works'
30 (Fa '85)	25.10			X	X	X	term 'inadequate title' introduced; 'single works' terminology dropped; 'gathering point' concept introduced; 'indistinctive title' explained more fully
51 (Wi '91)	25.9	X	X		X		restricted to 'indistinctive' titles; existing 'selections' headings for titles now deemed adequate remain in force; assumption now that an author writes in >1 form
57 (Su '92)	25.9	X	X		X	X	'inadequate' substituted for 'indistinctive'
60 (Sp '93)	25.9	X	X		X	X	one-form authors further defined
60	25.10			X	X	X	restricted to 'partial' collections
61 (Su '93)	25.10			X	X	X	'partial' removed

ind = indistinctive

no c.t. = no collective title

### Inadequacy

One of the more interesting applications of the rules for collective uniform titles is for the form headings, involving the cataloger formulated titles: Works (25.8), Selections (25.9), or from the approved list of form headings (see AACR2 25.10). We have to apply from the CSB 13 the concept of the "inadequate title" when determining whether a work should receive a uniform title for a form. It is interesting to note the amount of change in dealing with this very problematic area of

uniform title assignment. The idea of a selective application of uniform titles, based on the quality of the title proper, first appeared in LCRI 25.8-25.11 (see table 2). The concept (but not the term) was introduced in the collective section, but as applying only to 25.10 (Works in a single form). It was moved to 25.10 and given the term "inadequate" in CSB 30 (Fall 1985).

These interpretations prescribe situations in which a title proper is considered "inadequate" or "indistinctive," and thus a

collective uniform title must be given. Section 25.8–25.11 states that, for collections covered by 25.10 (Works in a single form), a collective uniform title is assigned in two instances: (1) the title proper is “indistinctive” or (2) there is no collective title proper (1.1G). In all other cases, no collective uniform title is assigned, “disregarding the wording of other title information, parallel title, etc., that indicates that the item is a collection.” While the definition of a collective title proper is defined in the cited section (see AACR2 1.1G), the concept of an “indistinctive” title is elucidated only by means of the examples given. Two examples each of distinctive and indistinctive titles are given in CSB 13 (Summer 1981). The indistinctive titles, thus requiring a collective uniform title, are as follows: (1) *Correspondence entre Victor Hugo et Pierre-Jules Hetzel*; and (2) *Uncollected stories of William Faulkner*. The titles that are deemed distinctive, and thus not requiring uniform titles, are these: (1) *The birds and other poems*; and (2) *Birthday of the infanta and other tales*.

It is interesting to note that the term “distinctive” was applied to titles by Seymour Lubetzky in his 1941 paper, “Titles: Fifth column of the catalog.” Lubetzky distinguished two types of titles: individual, or “distinctive,” and general, featuring words such as “diary, letters, poems, etc.” He then went on to state that “the former, ‘proper titles,’ are necessary and convenient guides to their books . . . and should therefore have title entries; the latter, ‘common titles’ have no such value—they depend for their identification on their authors and subjects and should therefore have author and subject entries but *no* title entries” (italics ours). This is the first articulation we found of the concept and the ensuing cataloging practice for “distinctive” titles.

The next appearance of this topic was in CSB 16 (Spring 1982), when the language was moved from 25.8–25.11 to 25.10, with some rewording of the text. First, the example concerning Victor Hugo’s correspondence was dropped. Further, the titles not requiring a uniform title were described as thus: “in all other

cases of a collection of works in a single form, treat the item as though it were a single work.” The provisions under this rule were further extended to 25.9 (Selections) in those cases where an author writes in only one form. This clause was repeated in section 25.9. Since this time the examples and definition of the concept have remained in 25.10, with references in 25.9 as to its applicability to “Selections.” CSB 30 (Fall 1985, 25.10, p. 20) replaces the term “indistinctive” and introduces the concept of inadequacy as an umbrella term for the two situations previously enumerated. A theoretical basis is given for the rule: The purpose of the rule is to provide a sensible gathering point in the catalog for items whose titles are more or less inadequate. Thus, if a collection of the selected works of an author has an adequate title, the rule should not be applied. The two examples are then repeated. The language about considering certain titles of collections as though they were “single works” is dropped. The provision mentioning applicability to 25.9 is dropped, but 25.9 language remains in force.

No changes were made to these provisions during the next five years or so. Then, CSB 51 (Winter 1991) both expanded and restricted the applicability of the inadequate title concept with regard to 25.9 (Selections.) Previously, the works of an author who writes in one form only were viewed in light of the concept; now partial collections of an author writing in more than one form are also considered. Further, the assumption is now to be made that an author writes in multiple forms. However, the types of titles proper to be judged were restricted; previously “inadequate” titles fell under the purview of 25.9, but now “indistinctive” has been substituted and we return to the earlier wording. Thus the “no collective title proper” category now applies to 25.10, but not to 25.9. Eighteen months later, in CSB 57 (Summer 1992), the language in 25.9 was changed back to “inadequate,” thus making its provisions uniform with those of 25.10.

A cataloger’s judgment is called into play to decide whether a title proper of a

collection indicates its nature, or whether a uniform title such as "Selections," "Novels," or "Correspondence," should be used. The LCRI explicitly states that the inclusion of an author's name does not make the title distinctive. Examples include:

Spencer, LaVyrle. Selections. 1993  
 Spencer, LaVyrle. Three complete novels. 1993

Compare then:

Gore-Booth, Eva, 1870–1926. Plays  
 Gore-Booth, Eva, 1870–1926. Plays of  
 Eva Gore-Booth

#### COLLECTION LACKING A COLLECTIVE TITLE PROPER (AACR2 1.1G)

AACR2 defines the term "collective title" in the following manner: "a title proper that is an inclusive title for an item containing several works." Item 1.1G indicates the various possibilities of transcribing the title proper in a bibliographic record; 25.10 specifies the use of a collective uniform title if no collective title proper is present.

#### WHAT TO DO

In an effort to simplify what is clearly a confusing situation for catalogers, RI 25.9 tells the cataloger to assume that an author writes in two or more forms. The scope of the rule was expanded in CSB 51 (Winter 1991) to include partial collections by authors who write in more than one form; thus, all situations covered by 25.9 (Selections) are to be considered in light of the "inadequate title" criteria listed in 25.10. It is interesting to note that in earlier LCRIs all of the provisions of 25.10 were applied to 25.9.

CSB 51, however, intentionally or not, stated that 25.10 applies to 25.9 in cases when "the title proper of the collection is indistinctive." Thus, the second category, that of the absence of a collective title proper, was no longer valid for Selections. This was changed with CSB 57 (Summer 1992), when "inadequate" was substituted for "indistinctive," so that today both situations again fall under the provenance of

both 25.9 (Selections) and 25.10 (Works in a single form). Obviously finding the situation still murky, CSB 60 (Spring 1993) again revised the provenance of RI 25.9 and 25.10.

LCRI 25.9A applies to: (1) partial collections of three or more works in two or more forms when the author writes in two or more forms; and (2) partial collections of three or more works in one form when the author writes in only one form. Catalogers are to restrict the application of the second condition to well-established authors whose works are known to exist in only one form. For the purpose of applying 25.9A and 25.10A, catalogers are to assume that the authors have written in two or more forms.

LCRI 25.10A applies to partial collections of three or more works in one form when the author writes (or is assumed to write) in two or more forms.

#### TERMINOLOGICAL DIFFICULTIES

The removal of the term "distinctive" in both LCRI 25.9A and LCRI 25.10A occurred in CSB 57, where the term indistinctive was replaced by "inadequate." Rewritten slightly, CSB 60 states:

The purpose of the rule is to provide a sensible gathering point in the catalog for items whose titles are more or less inadequate. Thus, if a collection covered by 25.10A has an adequate title, the rule should not be applied.

The term distinctive/indistinctive is then reserved for use as a category of titles (CSB 60 [Spring 1993]):

(1) consider that the title is inadequate and that consequently this rule should be applied to the following cases: (a) The title proper of the collection is indistinctive (normally do not consider that the presence of the author's name in the title makes it distinctive) (b) the collection lacks a collective title proper (1.1G) (2) Consider that the title is adequate in all other cases.

CSB 13 (Summer 1981):

Under any of the collective uniform titles ("Short stories," Laws, etc.) other than

"Works" or "Selections" . . . a difference in titles proper would separate originals from translations and likewise would separate unrevised editions as well as the various publications of a single edition. Such collective uniform titles are also not adequate for the proper identification of a work being used in a secondary entry. Because of these inadequacies, apply collective uniform titles with the principle found in 25.5C always in mind. The "appropriate designation to distinguish" between one work and another (or to bring them together) will usually be the title proper of each work. Note, however, that the designation should be tailored to fit each case, so that there are possibilities other than the title proper (editor, translator, publisher, compiler, etc.) and that the title proper, if used, may be shortened. Do whatever makes the most sense in the particular case.

A major usage restriction in "Selections" was implemented with *CSB 51* (Winter 1991), which stated that "Selections" will now be used only if "the title proper of the collection is indistinctive (cf. LCRI 25.10) or if the works in the collection are translations. For the period 1981–1990, the collective uniform title 'Selections' was routinely assigned to partial collections of works in more than one form. On records for multipart items created before 1991, continue to accept the collective uniform title 'Selections' although its use may not be in accord with current policy." Thus many authority records exist for collections with distinctive titles that remain unrevised. *CSB 57* (Summer 1992) substitutes the word "inadequate" for "indistinctive," thus bringing it in line with the language cited in 25.10. For example: Battles, Ford Lewis. Selections. 1993 400 Battles, Ford Lewis. Irenaeus, Against heresies. Clement of Alexandria. The exhortation to the Greeks; and, Quis dives salvetur? 1993

The substitution of "inadequate" for "indistinctive," as mentioned above, means that 25.9 is also covered by both categories.

#### AACR2R 25.10 WORKS IN A SINGLE FORM

Although found in 25.10 (Works in a single form), we have seen that this concept is essential to the scope of "Selections" ever since *CSB 51* (Winter 1991). In a sense, then, this is an explication of certain situations following the principle in 25.2A 2), where a uniform title is deemed necessary when "the title proper needs the addition of other elements to organize the file."

#### THE OVERALL PROBLEM

The fundamental problem, as we see it, is that a work with the exact same contents can receive two different cataloging treatments, depending on whether an "indistinct title" or "inadequate title" is present. For this reason, it can be questioned whether this distinction is a useful cataloging device—for if the concept of Works or Selections is deemed advisable, then the further determination not to use the uniform title—after determining that Works or Selections is necessary, if the title is indistinct—seems unnecessarily complicated and, basically, backwards. Using this distinction, a cataloger is to first determine that a uniform title is needed and then proceed to determine from another set of criteria that the uniform title is not needed. Also, in the interests of cataloging simplification, it seems advisable to drop this particular directive given the vagueness of the RI. The concept of "inadequacy" with regard to titles can be related to the dual nature of the uniform title: as a device of both differentiation and of collocation. While designating some titles proper as "adequate" may obviate the need for collective uniform title for differentiation purposes, it can be argued that this does not do justice to collocation purposes. As observed at the beginning of this article, there is also the interesting fact that the code concerns itself with the matter of collocation and that it is the LCRIs that introduce the concept of differentiation to the uniform title in the situations being covered by 25.8–10. By definition, a uniform title is a collocating device.

The evolving nature of principles and

uses of uniform titles has resulted in a system (not necessarily an unwise one, in the authors' view) that combines elements of both differentiation and collocation, sometimes both in the same uniform title. It was pointed out above that AACR2 really only addresses the collocating function of the uniform title. For example, collocating uniform titles are given in these cases: (1) the "Hamlet"-type titles, to bring together various manifestations of the same work; and (2) the collective uniform titles represented in chapter 25, sections 8-11. The differentiating elements of uniform titles can, on the other hand, be seen in these cases: (1) the 25.5B-type titles, to break conflicts and otherwise differentiate for primarily, but not exclusively, serials and series; and (2) the addition of dates to Works and Selections. Thus, the current practice of assignment of "Works" combines both elements: the collective uniform title itself to link the particular item to similar items, and the date to differentiate the particular item. "Selections" is constructed the same way, whereas the 25.10-type title (Works in one form) is exclusively a collocating device. If differentiation is needed, this is picked up by looking at other elements of the catalog record, and not borne by the uniform title alone. Such elements as the title proper, date of publication, and so on, stand as differentiating elements.

Thus, when certain items are deemed to have "adequate" titles and do not receive a collective uniform title, the collocating function is not served at all. It could be argued that not every item need bear a combination of titles, let alone a uniform title that carries the exclusive weight of placing the item in a context by explicitly stating both collocating and differentiating headings. However, if such a purpose has been employed for similar items and if a method of doing so is already in use, it seems to the authors that such a mechanism should be employed. This is the situation regarding inadequate titles, as the authors see it. If the already well-established uniform titles in 25.9 and 25.10, namely "Selections" and "Works in one form," are to be meaningful, then they should be applied as uniformly as possible

and all instances should be designated as such, not just those whose titles are "inadequate."

While a particular collection of an author's works can certainly become well-known in its own right, even this "uniqueness" should not obviate the need for a uniform title. A unique (as opposed to collective) uniform title could be constructed in such cases, although this is not something the authors are particularly advocating here. More to the point, the existence of the above-mentioned situation and the presence of a "distinctive" title proper would not seem to preclude the assignment of a collective uniform title (such as "Selections"). Such an assignment would fulfill Cutter's point about relating the particular item to others in the catalog. The LCRI now operates under an "either-or" policy: either an adequate title or a collective uniform title. While not necessarily meaning to set a precedent for all similar cases, the authors feel that in this situation, when precedent has already given the cataloging community a justification for and means of applying this in similar situations, no artificial distinction between adequate and inadequate titles is needed. However, such an approach restricts access to the item by robbing it of a collocating link to similar items. The "either-or" policy that is currently applied here can be said to be inappropriate, or inadequate, to the situation.

The reader might feel that, regarding the catalog record, the authors belong to the "more is better" school of thought—which, indeed, may be true. And, in this age of budget cutbacks and cataloging simplification, perhaps this is marching to a different and contrary drummer. Nonetheless, it can be argued that this proposal is actually in consonance with the "more-better-faster-cheaper" trend in cataloging. Currently, time is being spent in first identifying whether an item represents a collection of three or more independent works, then whether or not the title proper is adequate or not. It seems to the authors that the dual goals of more access and greater productivity (replacing here the worn-out quality versus quantity discussion) would be served by the abolish-

ment of the second phase of this process, namely, determination as to title quality. Abolishment of this concept—or, at the very least its clarification—is called for. Catalogers will still use judgment in determining whether an item is a collection or not, but once that intellectual decision is made, the more-or-less automatic assignment of a collective uniform title as called for in 25.9 and 25.10 would be made.

### CONCLUSION

Full circle can now be made back to the dual purposes of uniform titles—namely, differentiation and collocation. We do not argue that all uniform titles should contain elements of both, as Works and Selections now do. However, when the categories of collective uniform titles are available (such as for Selections and Works in a single form), when their application aids the collocation purpose, and when doing so would result in reduced cataloging time, such a course should be followed.

CSB 60 mentions that a collective uniform title is used as a “gathering point” for inadequate titles. Why not also have a gathering point for items whose titles are adequate, if we may use this term? Users

might not want only to identify a particular collection, but might also be curious to see all collections (whether in one form or many) by the same author. This can only be accomplished by the assignment of the uniform titles provided in 25.9 and 25.10.

Finally, two more points can be made in favor of this proposal. First, the quality of the title of the collection is already disregarded for one type of material—translations (see AACR2 25.11). Secondly, many authority records already exist—from the era 1981–1990 where “Selections” was used more liberally—that have headings contained in the corresponding bibliographic records; this proposal would do away with these inconsistencies and return to the guidelines present during this earlier era.

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# User Persistence in Displaying Online Catalog Postings: LUIS

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*User persistence in displaying postings is a significant human factor in design of computer-driven information systems, including online catalogs. Expert opinion and one study of users of a first-generation online catalog have suggested that users normally display no more than 30 to 35 postings. In this article we report a replication of the first-generation online catalog persistence study. The follow-up study was on a second-generation system with a larger database. The replication found that more second-generation system users than first-generation system users reported overload (26% versus 11%). Second-generation system users considered 100 postings (instead of 15) "too many." Analysis of transaction logs from the second-generation system revealed that partially persistent users typically displayed 28 postings, but that overloaded users did not outnumber totally persistent users until postings retrieved exceeded 200. The findings suggest that, given sufficient resources, designers should still consider 30 to 35 postings typical persistence, but the findings also justify treating 100 or 200 postings as a common threshold of overload.*

Computer-based information retrieval systems are constantly expanding, making more and more information available to users instantly. While the increased size of databases is generally welcomed, with it comes a growing potential for information overload. For example, title searches on "social science" retrieve 277 postings from one NOTIS-based catalog of 750,000 bibliographic records and 413 postings from another catalog of 1,400,000 records.

Queries to other databases of differing sizes have produced similar results (Prabha 1989). Faced with large retrievals, users must decide whether to persist in displaying results or to abandon their search. How online catalogs and other computer-driven information systems help users cope with overload is a key component of their design.

The problems of information overload and user persistence in displaying post-

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ings are significant because most use of information systems is discretionary. Users usually face little or no penalty for abandoning a search that might prove fruitful if pursued (Wiberley and Daugherty 1988). Users who are not provided assistance when faced with large retrievals are likely to become frustrated and stop their searches. Reports from user surveys sponsored by the Council on Library Resources and opinions of experts have called for design features that will assist users in reducing postings (Kidder 1983; Marchionini and Shneiderman 1988; Markey 1983a; Markey 1983b). Leading researchers have proposed creative design innovations for coping with overload without benefit of relevant empirical data on user behavior (Kinnucan 1992; McGarry and Svenonius 1991).

An initial question for system designers is, How many postings do users typically persist in displaying? This question is crucial because features that compensate for overload should apply only when the number of postings retrieved exceeds what most users find to be too many. Application at lower levels wastes system resources. Determination of a typical level of persistence is particularly important for systems that are open to all persons and do not require sign-ons or passwords that might load into the system a profile of the user's tendencies and proficiency.

In some contexts the term "postings" means the number of discrete records of information that a search retrieves; in other contexts, it means the records themselves. What a system displays depends on its design and the size of the search result. The initial response to a search can range from just the number of postings retrieved to full records of all retrievals. If all postings cannot be shown in some form on the first screen, the user faces a decision about expenditure of effort: is it worth the effort to display additional postings to find the information sought?

In 1990, Wiberley, Daugherty, and Danowski reported results of a study of user persistence in scanning postings in LCS (Library Computer System), a first-generation online catalog, as it was configured in Illinois in 1987. The study ob-

served users doing searches, questioned them about what they had done, and then analyzed the system transaction log of those searches. The study found that:

1. Users reporting overload were likely to have experienced overload in the past, and they preferred finding significantly fewer postings than other users. These suggest users reporting overload have information-processing capacities or search styles that inhibit persistence.
2. Although respondents to the questionnaire gave 15 as the median number of postings they considered to be "too many," transaction log analysis showed when searches retrieved between 15 and 30 postings, users displaying all postings outnumbered users who displayed none.
3. User persistence fell off significantly when the number of postings exceeded 30. When a search retrieved 30 or fewer postings, more users displayed all postings than displayed none.

While a useful beginning, these findings could be generalized only with caution because LCS contained a design feature that seemed to inhibit persistence. Instead of displaying screens of postings by a series of numerically consecutive commands (i.e., 1, 2, 3, 4, . . . n) or by simply depressing a single key, the user displayed screens of postings in groups of ten by issuing commands of PG2, PG3, PG+, PG2, PG3, PG+, and so on. Transaction logs showed many users did not employ PG+, but used PG4, PG5, and the like.

Studies of behavior in a particular working environment are limited because system features differ and local configurations often contain unique elements. Nevertheless, such studies in a normal working environment are important for understanding persistence because experimental settings might change motivation and significantly alter results. Given the ease of paging through postings, users who persist only a minute or two beyond what they would do in their normal working environment might display twice the number of postings. Because trying hard

Search Request: S=SOCIAL SCIENCE		LUIS
Search Results: 2661 Entries Found		Subject Guide
LINE:	BEGINNING ENTRY:	INDEX RANGE:
1	SOCIAL SCIENCE	1 - 191
2	SOCIAL SCIENCES	192 - 382
3	SOCIAL SCIENCES	383 - 573
4	SOCIAL SCIENCES--DATA PROCESSING	574 - 764
5	SOCIAL SCIENCES--MATHEMATICAL MODELS	765 - 955
6	SOCIAL SCIENCES--METHODOLOGY	956 - 1146
7	SOCIAL SCIENCES--METHODOLOGY	1147 - 1337
8	SOCIAL SCIENCES--PHILOSOPHY	1338 - 1528
9	SOCIAL SCIENCES--RESEARCH	1529 - 1719
10	SOCIAL SCIENCES--RESEARCH--EVALUATION	1720 - 1910
11	SOCIAL SCIENCES--SIMULATION METHODS	1911 - 2101
12	SOCIAL SCIENCES--STATISTICAL METHODS	2102 - 2292
13	SOCIAL SCIENCES--STUDY AND TEACHING--GREAT BRITAIN	2293 - 2483
14	SOCIAL SCIENCES--STUDY AND TEACHING SECONDARY	2484 - 2661
-----		
COMMANDS:	Type line # to begin display within index range	
	H Help	
0 Other Options		
NEXT COMMAND:		

Figure 1. LUIS Guide Screen.

and doing extra are desirable characteristics, particularly in experimental settings, subjects might exhibit abnormal persistence, even in carefully designed experiments.

Because studying persistence in a working environment is advantageous, the investigators decided to replicate their LCS project by studying use of the University of Illinois at Chicago's (UIC) LUIS system in spring 1992. At that time, UIC's LUIS was a NOTIS 5.0-based online catalog with 725,000 bibliographic records made available on terminals in UIC's libraries as part of a "Library Menu." Other options on the Library Menu included: the statewide catalog of Illinois, ILLINET Online; periodical indexes; electronic mailboxes to library departments; and catalogs of other libraries.

Because LUIS, unlike LCS, allows natural language searching, including keywords and assigned subjects, and has a larger database than LCS, LUIS users on average retrieved more postings than LCS users. The richness of the LUIS transaction logs permitted exploration of more issues than was possible with LCS, including assessment of partial persistence and anticipated futility points.

#### DESCRIPTION OF LUIS

LUIS users may search by author, title, subject (Library of Congress or Medical Subject Headings), keyword, or call number. To do so users key the letters *a*, *t*, *s* or *sm*, *k*, or *c*, respectively, followed by an equal sign or a blank space, and then words, letters, or numbers that fit the search mode. Because displays of call number search results differ from all other displays of results by not giving a number of postings retrieved and allowing virtually infinite paging forward or backward, call number search results were not analyzed in this study.

If an author, title, or subject search retrieves more than 50 entries or postings, the results are displayed in a guide screen (see figure 1). Guide screens have up to 14 lines. Each screen line gives a range of index line numbers and the beginning entry for the first index line in that range. When a guide screen line number is entered, the system displays an index screen (see figure 2) with up to 14 index lines beginning with the lowest number listed on the guide screen line. All keyword searches and non-keyword searches retrieving 50 or fewer postings initially

Search Request: S=SOCIAL SCIENCE  
 Search Results: 2661 Entries Found

LUIS  
 Subject Index

```

-----
SOCIAL SCIENCE
1  *Search Under: SOCIAL SCIENCES

SOCIAL SCIENCE AND MANAGEMENT
2  MANAGEMENT PERSPECTIVES FROM THE SOCIAL SCIE <1981>
3  SOCIOLOGY OF MANAGEMENT <1989>

SOCIAL SCIENCE ASSOCIATIONS
4  INTERNATIONAL ORGANIZATIONS IN THE SOCIAL SC <1961>
5  INTERNATIONAL ORGANIZATIONS IN THE SOCIAL SC <1964>

SOCIAL SCIENCE FEDERATION OF CANADA--HISTORY
6  SOCIAL SCIENCES IN CANADA 50 YEARS OF NATION <1991>

-----
Continued on next screen --
COMMANDS:      Type line # to see individual record
                F Forward                      H Help
0 Other Options G Guide
NEXT COMMAND:

```

Figure 2. LUIS Index Screen.

display their results on an index screen.

Index screen lines point to individual records. In this study, virtually all individual records were either bibliographic—book or serial—or authority records. Bibliographic records give the call numbers of cataloged items, control numbers for uncataloged items, and shelf locations for uncataloged periodicals.

To display an item listed on an index screen, a user enters the number to the left of the item. For example, to retrieve "SOCIOLOGY OF MANAGEMENT" in figure 2, the user enters "3." To display additional screens of index lines, a user either enters "F" (for Forward) or simply presses the return/enter key. To move backward among screens of index lines, the user enters "B" (for Back), which can be repeated by pressing the return key until an "F" command returns the system to its default. Each screen has running instructions that list codes and commands available from that screen.

LUIS arranges search results in helpful orders. Generally, this means in alphabetical order (e.g., author search results list authors in alphabetical order and, under authors, titles of their works in alpha-

betical order), although keyword searches list works in reverse chronological order by year and, within a given year, alphabetically by title.

#### COMPARISON OF LUIS WITH OTHER ONLINE CATALOGS

Because different systems have different basic designs as well as local variations, generalization of research findings about one installation is limited. For example, findings from the study of user persistence in displaying LCS postings are limited because LCS commands to display additional screens of postings are counterintuitive. To assess the extent to which findings from the present study of UIC's LUIS can be generalized, the investigators compared it via the Internet to four other widely used systems—DRA, DYNIX, GEAC, and VTLS—as each was configured at two or more sites (a total of ten) in 1993. This comparison sought to delineate design features that might impinge on persistence. These features fell into two categories: those affecting overall user fatigue and those relating more directly to persistence. Similarities and differences among systems point to where

the findings of this study can be applied and where further research is needed.

Simplicity of search keys and ease of initiating a search seem likely to affect overall user fatigue. Regarding search keys, LUIS appears to be a relatively easy system to use because most of its commands consist of one letter. More importantly, a user can initiate a search from any LUIS screen. In some other systems, a user must select a search mode from an introductory screen and then enter the search from a different screen for that search mode. Unlike LUIS, in some systems, keyword searching takes the user to a different database, uses search codes whose format differs from other search codes, and displays the results without summary and in no apparent order, one bibliographic record at a time.

In addition to features affecting overall fatigue, some impinge more directly on persistence. Some systems, like LUIS, give the total number of postings retrieved, while others do not. The latter place the match nearest to the user's search key in the initial display and allow the user virtually unlimited movement backward or forward from that display within the helpful order retrieved. Numbers of postings for each line in the display are given, but, of course, each of these numbers is smaller—sometimes much smaller—than the result of the entire search. (LUIS does not allow movement before the beginning or past the end of the postings retrieved.) Related to this difference is Blair's concept of the user's "anticipated futility point" (AFP), the largest retrieved set of documents the user is willing to begin browsing (Blair 1980). A system that does not display total number of postings retrieved might not stimulate the user's AFP the way a system displaying total postings would.

Also affecting persistence is the number of levels between the initial display and the bibliographic records with call numbers. In general, up to three displays may appear before records with call numbers: total number of postings retrieved, a summary guide to postings retrieved, and single-line citations to item records. The more displays before a bibliographic re-

cord, presumably the less likely it is a user will persist to show the call number. LUIS has at most two displays before bibliographic records: summary guide and index screens. Otherwise an index screen precedes bibliographic records.

A third feature affecting persistence is ease of movement among displays. LUIS and some other systems facilitate persistence by allowing users to advance through like displays simply by depressing the enter/return key. Other systems require depressing a letter like *N* (for Next) and then depressing the enter/return key.

A final feature affecting persistence is the order in which results are displayed. Most systems display results in helpful orders. Those that do not presumably make persistence harder.

LUIS's display of total number of postings retrieved differentiates it from some other systems. This difference limits application of the findings of this study. At the same time, findings about LUIS can be applied to persistence in displaying other search results where the number of postings is given. An example from DRA (see figure 3) does not show total postings but gives individual line totals; for line 227, for instance, 48 postings under "Social sciences — Philosophy (LC)" are listed.

Presumably, findings from this study suggest how users would react to line 227. LUIS and systems like it that display total number of postings are widespread. While results of this study do not apply to all systems, they apply to many.

### SAMPLING PLAN

The sampling plan for this project followed the model designed for the online catalog project sponsored by the Council on Library Resources (Miller and Baratz 1982) that was also used in the investigators' LCS study. User sessions were observed and questionnaires distributed at terminal locations—sites of a single terminal or a cluster of terminals. Terminal locations were studied on a scheduled basis, each location at least once. The data collection period was ten weeks during spring semester 1992 (February 3–March

Your search: S=SOCIAL SCIENCE

Holdings highlighted for EXAMPLE LIBRARY

LINE #	# of titles	Subjects
221	64	Social sciences -- Periodicals. (LC)
222	1	Social sciences -- Periodicals -- Bibliography. (LC)
223	3	Social sciences -- Periodicals -- Directories. (LC)
224	1	Social sciences -- Periodicals -- directories. (MeSH)
225	6	Social sciences -- Periodicals -- Indexes. (LC)
226	2	Social sciences -- Periodicals -- Indexes -- Periodicals. (LC)
227	48	Social sciences -- Philosophy. (LC)
228	1	Social sciences -- Philosophy -- Congresses. (LC)
229	1	Social sciences -- Philosophy -- Dictionaries. (LC)
230	3	Social sciences -- Philosophy -- History -- 20th century. (LC)

(More)

Enter: Line # (1,2,3, etc.) to see works associated with your search.  
 N to see Next screen P to see the Previous screen.  
 B to Backup. ST to start over.  
 (UP ARROW) to recall previous searches.

&gt;&gt;

Enter ? for HELP.

Figure 3. DRA Index Screen.

6 and March 16–April 17, with semester break, March 7–15, excluded). Each day of the semester was divided into three four-hour time blocks: morning, 9 a.m.–1 p.m.; afternoon, 1 p.m.–5 p.m.; and evening, 5 p.m.–9 p.m. Available data on online catalog use showed that the morning and afternoon time blocks for Monday through Friday were the ten periods of highest activity. Observation during these ten time blocks was then assigned to terminal locations in proportion to level of activity: the more heavily used a location, the more time allocated for observation of sessions and questionnaire distribution at that location. By observing activity at different locations at varying times during fifteen days in 1990 and eleven days in 1991, the investigators were able to estimate proportional levels of activity.

At the beginning of a sampled time block, a research assistant observed the first user-session that began during that time block, and, at the session's end, gave the user a questionnaire. The number on the questionnaire served as the session or case number and was used to label the transaction log data for that session. The assistant then repeated this process for each succeeding user whose entire session

could be observed. Thus, assistants did not question users who began their sessions while another user was being observed. Excluded from this study were individuals using the system via dial-access from remote terminals. Libraries included were the Main Library (covering arts, humanities, applied science, and social science), Architecture & Art Library, Mathematics Library, and Science Library.

#### IDENTIFYING TRANSACTION LOG RECORDS OF OBSERVED SESSIONS

Because users do not indicate when they begin or end LUIS sessions at public terminals, research assistants observed the sessions. Their observer's log recorded: logon ID of terminal used, user's gender, and beginning and ending time of session. Observers used clocks synchronized with LUIS. Exactness in noting when sessions began and ended was sometimes limited by distance from terminal and traffic between observers and terminals. Users might not enter their first LUIS command until several minutes after arriving at the terminal. Similarly, noting a session's end could be complicated by two factors.

First, the observer could not record the end of a session until the user left the terminal, but the user might remain at the terminal for some time after issuing a final command. Second, the observer had to distribute the questionnaire as soon as the user left the terminal.

At the time of this study, public terminals offered several services—including LUIS—listed on a “Library Menu.” Users connected to LUIS by selecting it from the menu. An IBM/VM/Pass-Through Facility made the connection, and its log recorded both an ID for the terminal (the same ID observers logged) and the address of the LUIS port that was accommodating the session. The LUIS port number identified the transaction log. Using the logon ID and the LUIS port number, the two investigators most familiar with LUIS were able to locate the LUIS transaction log of observed activity. To do this, they ascertained whether a distinctive block of searching occurred in the LUIS log concurrent with the observed time of the session. Concurrent was defined as at or within two minutes of the time recorded by the observer. In identifying concurrent activity, the investigators allowed for the possibility that users might delay entering a LUIS command for more than two minutes after they arrived at a terminal or that they might remain at a terminal for more than two minutes after they issued their last command. In allowing for these possibilities, the investigators were careful to make sure all other elements demarcated the session clearly. Of 850 observed sessions, 574 were demarcated. In 42 of these, the observer recorded a beginning time more than two minutes earlier than the first transaction. In none of these cases, was the observed ending time more than two minutes later than the last transaction. In 33 cases, the observer recorded an ending time more than two minutes later than the last transaction. In none of these cases was the observed beginning time later than the first transaction. In 23 cases, the observed ending time was earlier than the last transaction, but continuity of content showed that the observed ending time was incorrect.

In identifying a distinctive block of

searching, the investigators sought to find a series of commands that occurred between the observed beginning and ending times of the session but was temporally separate from other recorded commands. New connections to LUIS at or within two minutes of the observed beginning of the session were considered the start of a distinctive block of searching. Drops from LUIS at or within two minutes of the observed end of the session were considered the end of a distinctive block of searching. Where there was no new connection or drop, the investigators considered activity temporally distinct if it was separated by at least three minutes from previous or subsequent activity. This follows earlier research (Tolle 1983) and the investigators own experience (Wiberley, Daugherty, and Danowski 1990).

When the break in activity was less than three minutes, the investigators did not separate activity on either side of the break into different sessions unless they found a change in search mode (a, t, s, k, etc.) or both agreed that there was distinctive content. Differentiation by search mode was operational. A search using one mode was considered different from a search using any of the other modes. Distinctive content means a change in the topical focus. For example, the observer reported two users at the same terminal less than three minutes apart. Inspection of the relevant transaction log found no break in activity greater than three minutes. The log recorded a title search “Bible” followed by display of 146 postings at intervals averaging 26 seconds between commands. Ninety-three seconds after the last of these postings was displayed, the log recorded a title search “Bughouse Blues.” The investigators split the transaction log data into two sessions on either side of the 93-second break. In evaluating searches with unfamiliar content, the investigators looked for differences in the LC classes of items retrieved.

A total of 850 users were observed. LUIS transaction log data could be reliably demarcated for 574. Virtually half of these (286) were separated by time alone. The start or finish of roughly one-fourth (136) were separated by time and by both

content and mode at the other terminus. Over 10% (73) were separated by time at one terminus and by content alone or by mode alone at the other. The remaining 15% (79) were separated by content and mode or by content alone and mode alone at one or both termini. Transaction log data for 189 cases did not exist either because users reported using other systems (68) or because the system was apparently not accessible (121). For the remaining 87 cases, the investigators could not reconcile transaction log data with session times recorded by the observers.

#### EDITING AND ANALYZING THE TRANSACTION LOG

LUIS transaction logs provided nearly all data elements needed for their analysis: time of transaction in hour, minute, and second; the system's record of the command entered by the user; the number of postings retrieved; the screen type that displayed the search result (e.g., in figure 4, T/I [Title Screen Index] and BR/V [Brief View]); and, finally, Search String Entered (e.g., "T=CHIRAL"; "10" for the record listed as number "10" on an index screen; "F" for Forward). While the number of postings retrieved was recorded, one crucial element was not: the number of items on index screens that users displayed. This number was used as a measure of persistence. To supply this information, a member of the project team replicated all the searches and noted number of lines displayed wherever users displayed index screens. Replication of the searches occurred during fall semester 1992, approximately seven months after the users actually did the searches. During that time the database grew overall by roughly 19,500 records, thus changing the results of some searches.

To assess the impact of this change, the investigators examined for 100 sessions the search sequence that retrieved the largest number of postings (the type of sequence central to the present study). This examination revealed that in 60 cases there was essentially no change between spring and fall 1992 in the number of postings retrieved. (In 53 cases the num-

ber was exactly the same; in 7 the number retrieved had decreased in the fall and was no more than one screen initially.) For the 40 cases where replication retrieved a larger number of postings, the investigators replicated the searches again in late spring 1993. They assumed changes in displays between fall 1992 and spring 1993 would suggest how well reenactment in fall 1992 mirrored displays in spring 1992. Between fall 1992 and spring 1993 the database grew by about 24,800 records.

Five of the 40 spring 1993 replications retrieved the same number of postings as fall 1992. In 27 of the remaining 35 cases, the search retrieved more postings in 1993, but replicating the user's commands showed that the number of postings displayed was unchanged. In the remaining 8 cases where replication displayed a different number of postings from the original, the median absolute change per search was 3 postings (some replications retrieved fewer postings, making use of an absolute number preferable). The median absolute change per screen was 0.85 postings. The median number of screens displayed per search was 4.5. In summary, the analysis indicates that in approximately nine out of ten cases the exact number of postings the user displayed is known. In the remaining 10%, the difference was fewer than 4 postings.

As in their LCS study, the investigators decided that, in counting the number of postings displayed, no user would be credited with displaying more postings than a search sequence retrieved. In other words, repeated displays of a given index line or bibliographic record were not counted. Similarly, in searches where the user displayed all postings retrieved and replication retrieved a larger number, the study's analysis credited the user with displaying the smaller (original) number.

#### METHODS OF DATA ANALYSIS

This study worked with two kinds of data: (1) questionnaire data, which included both the user's report about what happened in the observed session and responses to questions about his or her aca-

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
14:35:42	UI	BR	<CLR>		INT	1/2	
14:36:04	UI	BR	FIN T	7	T/I		T=CHIRAL
14:41:05	UI	BR			INT	1/2	T=CHIRAL
14:42:29	UI	BR	FIN S	12	S/I		S=CHIRAL
14:47:30	UI	BR			INT	1/2	S=CHIRAL
14:48:23	UI	BR	FIN S	12	S/I		S=CHIRAL
14:53:27	UI	BR			INT	1/2	S=CHIRAL
14:53:42	UI	BR	FIN S	12	S/I		S=CHIRAL
14:57:51	UI	BR	FIN A	0	NEF/A	1/1	A=CHIRAL
14:58:56	UI	BR	FIN K	17	K/I		K=CHIRAL
15:03:58	UI	BR			INT	1/2	K=CHIRAL
15:04:16	UI	BR	FIN K	17	K/I		K=CHIRAL
15:04:27	UI	BR	FOR		K/I		F
15:04:46	UI	BR	BAC		K/I		B
15:09:48	UI	BR			INT	1/2	B
15:10:05	UI	BR	FIN K	17	K/I		K=CHIRAL
15:10:46	UI	BR	FOR		K/I		F
15:10:55	UI	BR	BAC		K/I		B
15:11:07	UI	BR	FOR		K/I		F
15:12:59	UI	BR	FIN K	1.068	K/I		K=ORGANIC CHEMISTRY
15:13:01	UI	BR	<ENTER>		K/I		
15:13:06	UI	BR	<ENTER>		K/I		
15:13:08	UI	BR	<ENTER>		K/I		
15:14:03	UI	BR	FIN S	0	NEF/S	1/1	S=ORGANIC CHEMISTRY SYNTHESIS
15:15:27	UI	BR	FIN K	1.068	K/I		K=ORGANIC CHEMISTRY
15:15:30	UI	BR	<ENTER>		K/I		
15:15:37	UI	BR	<ENTER>		K/I		
15:19:21	UI	BR	<PA1>		INT	1/2	
15:20:19	UI	BR	FIN K	1.068	K/I		K=ORGANIC CHEMISTRY
15:20:22	UI	BR	<ENTER>		K/I		
15:20:40	UI	BR	DIS O		OTH	1/1	O
15:21:12	UI	BR	REV		REV	1/1	R
15:23:19	UI	BR	FIN K	1.068	K/I		K=ORGANIC CHEMISTRY
15:23:21	UI	BR	<ENTER>		K/I		
15:23:36	UI	BR	MSG SRCH A		K/I		A=
15:23:42	UI	BR	HEL		K/I/H	1/1	H
15:23:52	UI	BR	DIS O		OTH	1/1	O
15:24:19	UI	BR	FIN A	0	NEF/A	1/1	A=COTTON, F.
15:25:06	UI	BR	INVLD CMND		NEF/A	1/1	COTTON F
15:25:16	UI	BR	FIN A	15	A/I		A=COTTON F
15:25:51	UI	BR	FOR		A/I		F
15:26:14	UI	BR	BAC		A/I		B
15:26:42	UI	BR	FOR		A/I		F
15:27:08	UI	BR	INVLD CNTX		A/I		
15:27:13	UI	BR	BAC		A/I		B
15:27:45	UI	BR	DIS #		BR/V	1/1	B 1
15:28:20	UI	BR	DIS I		A/I		I
15:29:28	UI	BR	DIS #		BR/V	1/1	B 9
15:30:08	UI	BR	DIS I		A/I		I
15:30:39	UI	BR	DIS #		BR/V	1/1	B 10

(1)= Time; (2)= Database Name; (3)= Catalog View Mode; (4)= Type of Command issued by User (search mode); (5)= Number of Postings Retrieved; (6)= Resulting Screen Type; (7)= Screen Number; (8)= Character String Entered.

Figure 4. LUIS Transaction Log.

demographic background and past use of computers, libraries, and library systems; and (2) transaction log data. Each kind of data was analyzed separately, and elements of the two data sets were combined and analyzed. Questionnaire responses were keyed to disk on a PC computer using

SPSS's Data Entry software package, then analyzed using SPSS-PC, version 4.0. Frequencies, cross-tabulations, and correlations were run as appropriate for the types of variables. Analysis of the transaction log data was more complicated.

Two premises governing selection of

transaction log data for analysis in the LCS study were also applied in the present study. First, persistence can be inferred only in searches that retrieve more than one screen of postings. That is, without at least two screens of index records retrieved, the user has no opportunity to display an additional screen and show persistence. Second, the search sequence retrieving the highest number of postings in each session (Session's Highest Number of Postings) was the focus of analysis. The investigators focused on the SHNP because users' persistence with it seemed more indicative of the limits of their persistence than their behavior with smaller retrievals; and, the volume of transaction log data dictated limitation of initial analysis to selected search sequences.

Given the selection of data for analysis, it is useful to compare SHNP retrievals with other search results. Table 1 summarizes this comparison. The mean number of postings retrieved by SHNP search sequences was 583, whereas the mean number retrieved by non-SHNP searches was 90. The mean number of postings displayed from SHNP retrievals is 35, while it is 9 for all other retrievals. Despite these differences, it is important to note that SHNP sequences constitute roughly 19% of all retrievals, so behavior with SHNPs is not only indicative of limits of persistence, but also constitutes one-fifth of all searches.

In analyzing LCS data, the investigators assumed that users normally sought a call number when they searched. Other research has assumed (Tagliacozzo and Kochen 1970) or documented this (Markey 1984). From this assumption it followed that users will display at least one bibliographic record with a call number, if a search retrieves an item sought. Furthermore, if a search does not retrieve an item sought, users who are not overloaded will exhaust all possibilities by displaying records for all items retrieved.

Presuming users normally seek a call number, their responses to SHNPs that retrieve more than one screen of postings can be divided into four categories. First, the user might display all postings either as index records or as bibliographic re-

ords, or as some combination of the two. Such a user could be described as totally persistent. Second—and at the other end of the scale—the user might not display any bibliographic records nor any index records. Such a user could be described as overloaded. Third, a user might display some index records, but no bibliographic records. Such a user could be described as partially persistent. Finally, the user could display one or more bibliographic records, but not display all records. Such a user could be called a record displayer. The persistence of record displayers could not be assessed because the bibliographic record(s) the user displayed might have been just what was sought, obviating the need for further persistence. Consequently, the behavior of record displayers will not enter into the discussion of persistence.

In analyzing persistence, the project team established rules for counting postings displayed by total persisters and partial persisters. Postings initially displayed by the system were counted in the user's total only if the user displayed a subsequent screen. For counting postings in cases of total persistence, the count equaled the number of postings displayed whether those postings were displayed as index screen lines or bibliographic records. In cases of partial persistence, the count equaled the number of index screen lines displayed.

Besides the basic rule for counting postings displayed, three others were applied. First, in some sessions, searches retrieved the highest number of postings more than once; in these cases the investigators analyzed the user's response that showed the most persistence. For example, in a session where the user twice retrieved the SHNP of 216, displaying 20 postings in one sequence and 49 in another, the user's persistence would be counted as 49. Second, unlike LCS, LUIS summarizes with guidelines the results of author, subject, and title searches that retrieve more than 50 postings. This study did not count guidelines displayed on guide screens toward the total number of postings displayed. While a guide screen, like an index screen, contains a list of

TABLE 1

## SELECTED COMPARISONS OF SHNP RETRIEVALS WITH NON-SHNP RETRIEVALS

	No. of Retrievals	% of Retrievals	Range of Postings Retrieved	Mean No. of Postings Retrieved	Mean No. of Postings Displayed
SHNP searches	520	19	1-16,873	583	35
Non-SHNP searches	2,214	81	1-5,000	90	9

numbered options, the investigators decided that, because guide screen lines were summaries of index lines rather than single-line citations to individual records, they were too different to be equated to index lines. Third, in some sessions the SHNP was part of a subject search sequence with a cross-reference. In some sessions the cross-reference was the SHNP; in others the user, in effect, concluded the SHNP sequence by displaying a cross-reference. Display of a cross-reference could be considered a manifestation of further persistence. But because the process of retrieving bibliographic records through cross-references differs substantially from the process of retrieving bibliographic records through an author, title, subject, or keyword search, the investigators decided not to include in data analysis those sessions where cross-references were the SHNP or where their display terminated the SHNP.

As stated above, inferences about user persistence can be drawn from those who are totally persistent, partially persistent, and overloaded. One measure of the limits of user persistence is comparison of those totally persistent and those overloaded. The number of postings at which the overloaded outnumber the totally persistent can be seen as one limit of persistence. A second measure of persistence is the number of postings that partial persists display. The relationship to persistence here is direct: users display some postings, but not all; the number they display is the extent of their persistence. Comparison of totally persistent and overloaded was the principal measure used in the study of LCS. In the present study, a far higher

incidence of partial persistence made that category as important a measure of persistence as comparison of the totally persistent and the overloaded.

While inferences about persistence cannot be drawn from those who display bibliographic records, the behavior of these users contributed data for identifying the anticipated futility point of online catalog users. The anticipated futility point, a concept advanced by David C. Blair, is "the maximum number of retrieved documents that an inquirer would be willing to *begin* browsing through. It represents the largest retrieved set of documents he is willing to look at" (Blair 1980). Anytime users display a bibliographic record, they show willingness to examine a retrieval. Cases where users display at least one bibliographic record can be added to cases of partial persistence and total persistence and the three compared to cases of overload to identify the maximum number of postings an online catalog user would be willing to begin browsing.

Finally, for cases where users responded to the questionnaire, the investigators examined the transaction log to compare users' behavior with their reports about what happened during their sessions. This comparison focused on whether the user was totally persistent, overloaded, or partially persistent. The investigators compared the characteristics, ascertained by the questionnaire, of users in the three groups. The investigators also noted how members of the three groups answered the question: "In any of the searches you just performed, did you find too many entries?"

TABLE 2  
COMPARISON OF FINDINGS FROM LUIS AND LCS  
QUESTIONNAIRE RESPONSES

	Observed Sessions	Questionnaires Returned	% Return Rate	% Reporting Overload in Observed Session	Postings Reported To Be Too Many in Observed Session	% Reporting Overload in All Searching	Reported General Threshold of Overload (Number of Postings)
LUIS	850	490	58	26	147	51	100
LCS	748	418	56	11	13	35	15

### RESULTS OF DATA ANALYSIS

#### RESULTS OF ANALYSIS OF QUESTIONNAIRE DATA

Analysis of questionnaire data showed that 490 of the 850 users observed returned at least a partially completed questionnaire (a return rate of 58%). Of these 490, 439 were usable, and their data were the basis for the subsequent analysis. Key comparisons with the authors' study of LCS users' responses to similar questions are summarized in table 2.

Among respondents, 88 or 26% reported experiencing postings overload during the observed sessions. Compared to a 1987 study of a comparable sample of LCS users at the same institution, this is an incidence of overload that is 136% higher. In the LCS study, 11% of respondents reported overload for the observed sessions.

Analysis of the LUIS users' responses shows that 147 postings was the median number reported to be too many by those acknowledging overload in the observed session. This contrasts with a median of 13 reported in the earlier LCS study, meaning that reported overload use of LUIS is 11 times higher than that reported by LCS users.

In the current LUIS study, 51% of respondents affirmed experience of overload at some time. This is up from the 35% who answered "yes" to this same question in the LCS study. In all, 361 users or 82% (both those who had and some who had not experienced overload) responded to the question, "In general, what number

entries [postings] would you consider to be 'too many?'" The median reported was 100 postings. In the earlier LCS study the median response was 15 postings.

Reported overload in the observed sessions was significantly correlated with having previously experienced search overload ( $r = .38, p < .001$ ). This suggests that overload potential is to some extent a general user trait, as was observed in the earlier LCS study, in which the correlation between these two variables was  $r = .35$ . This overload trait could be due to general information processing capacity or to consistent search styles over time, or to a combination of factors. Overloaded users reported searching more by subject ( $r = .41; p < .001$ ) and by keyword ( $r = .34; p < .001$ ) rather than by author, title, or both combined.

Reported search mode, however, was not associated with the reported number of postings. Moreover, reported overload was not associated with the number of postings. This further suggests that overload is more of a user trait than system-centered. There were no significant associations between reported overload and perceptions of the understandability of the display format, ease of use for scanning multiple postings, or the clarity of the order of presented postings.

Even though overload is a user trait, not a system-based feature, it is not a demographically based trait; there were no significant associations with gender, age, academic status, or majors. Experience with other computer technologies was also not related to reported overload,

nor was frequency of library use. This suggests that propensity for overload is not related to academic demographic variables.

In addition, reported overload was not related to the perceived importance of the search, nor to the need motivating the search, whether for a course taken or taught, thesis or dissertation research, independent research, or recreational reading. Success in finding what the user was looking for was likewise not associated with reported overload. Taken together, these findings suggest that overload has little to do with the system and the structural factors contextualizing the search, and more to do with the user's conceptualization of the search problem. Those who report using more general searches (subject and keyword) are more likely to report overload than those who report using more specific searches (author and title).

Finally, users who reported overload in the session observed were significantly less likely to be either very frequent (daily) users or very infrequent users (four times per year or less). Instead, they were moderately frequent users (weekly or monthly) ( $\chi^2 = 11.68, p < .03$ ). This was the reverse of what occurred in the prior study of LCS users, in which moderate users were less likely to report overload.

#### RESULTS OF ANALYSIS OF TRANSACTION LOG DATA

The results of our analysis of the transaction log data are summarized in table 3 with columns for overloaded, totally persistent, and partially persistent users. Given that all users in the first row retrieved or displayed more than one screen of postings, the first three rows roughly show how many users displayed two to four screens of postings.

As was true of some users of LCS, nine LUIS users reported retrieving too many postings yet displayed all retrieved. This again suggests some users can feel overloaded yet be totally persistent. More puzzling, at least initially, are the 23 users who reported they had not found too many

postings yet displayed no postings from their SHNP. While some of these users might have misunderstood the question, it is possible that most recalled only that they had displayed a bibliographic record retrieved by a non-SHNP sequence. Their satisfaction with display of a bibliographic record might have dominated their memory of the session. Seventeen of the 23 displayed at least one bibliographic record at some point during their sessions.

Because the LUIS database was much larger than the LCS database and because LUIS allowed both keyword and subject searching—neither of which were possible on LCS in 1987—search results in the LUIS study were generally much larger than those for LCS. The largest single retrieval by users of LCS was 420 postings. In March alone, 114 LUIS searches exceeded that number of postings. Among all LCS searches, only 326 retrieved more than one screen of postings. In March alone, 432 LUIS searches retrieved more than 14 postings, the maximum for one screen.

Large search results in LUIS led to capturing more instances of overload, total persistence, and especially partial persistence than was possible for LCS (50 vs. 45 overload; 59 vs. 47 total persistence; 56 vs. 13 partial persistence). Given the large number of partially persistent and the direct measure of persistence that partial persistence provides, transaction log data analysis can begin with them. Most partial persisters displayed 28 or fewer postings (28 was also the median number of postings displayed by partial persisters). Here it is worth noting that most of the users who displayed 28 or fewer postings could have displayed far more. The SHNPs for the 31 users who displayed 28 or fewer postings included just 6 that were 50 or fewer and 11 that were 100 or fewer. Seventeen of the 31 who displayed 28 or fewer postings had retrieved more than 200.

One could argue that partial persisters were not overloaded, but that by displaying some postings they were able to ascertain that the search they had done was on the wrong track. On the other hand, behavior in the wake of partial persistence

TABLE 3

REACTIONS OF OVERLOAD AND LEVELS OF PERSISTENCE AMONG USERS WHO REPORTED OVERLOAD (o), DID NOT REPORT OVERLOAD (p), AND DID NOT RESPOND TO QUESTIONNAIRE (n)

Postings Retrieved in Session	Users Who Displayed No Index Lines and No Bibliographic Records (Overloaded)	Users Who Displayed All Postings (Totally Persistent)	Number of Postings Displayed by Partial Persisters*	Users Who Displayed Some Index Lines and No Bibliographic Records (Partially Persistent)
11-14	n	p p n n n	7-14	o o o o p p p p p p p p n n n n n n n
15-28	p p	o p p p p p p p p p p n n n n n n n n n n n n	15-28	o o o p p p p p n n n n n n n n
29-42	p n	o o p p p p n n n n n n n n n	29-42	p n n n
43-60	o	o p p p p	43-60	o o p p p n n
61-100	p p p	o o p p n	61-100	o p p n n n
101-200	o p n n	o o o p p p p n	101-200	o p p p n n n
201-300	o o p p p p n n n	n	201-300	
301-	o o o o o o o o o o p p p p p p p p p p p p n n n n n n	n	301-	p

\*Partial persisters displayed only some of the postings retrieved. Each letter (n, o, p) represents one user.

suggests overload is a factor for many. Thirty-two percent ended their sessions without trying another search; thus they left the terminal without a call number. An additional 25% immediately performed another search, using the same search mode and same term or terms that were in the search that retrieved the SHNP, but adding one or more terms. For example, one user who partially persisted in displaying the results of "K=FRANCE" immediately followed that with a search of "K=FRANCE AND WAR." Such additions to the SHNP search string seem clearly to be an effort to reduce the results.

Although the behavior of partial persisters is important evidence for system designers to consider in deciding when to provide users with help in managing large retrievals, it is not the only evidence. As stated earlier, the median response to the

question "In general, what number entries [postings] would you consider to be 'too many?'" was 100. And comparison of users who displayed no postings with those who displayed all shows that the totally persistent outnumbered the overloaded until the number of postings retrieved exceeded 200. Overall, when 200 or fewer postings were retrieved, totally persistent users were more than four times more numerous than those overloaded (57 vs. 13). When behavior of totally persistent and overloaded LUIS users is considered along with questionnaire data on general attitudes toward persistence, they suggest far greater persistence among online catalog users than behavior of LUIS partial persisters indicates or previous evidence has provided. Important comparisons between findings from LUIS and LCS transaction log data are summarized in table 4.

TABLE 4

## COMPARISONS OF FINDINGS FROM LUIS AND LCS TRANSACTION LOG ANALYSES

	Database Size	Search Modes Studied	Observed Sessions	Sessions with Transaction Log Data	Largest Number of Postings Retrieved	Median Number of Postings Displayed by Partial Persisters	Postings Level Where Overload Exceeds Total Persistence
LUIS	725,000	a, k, s, sm, t	850	574	16,873	28	200
LCS	425,000	a, t, a/t	748	667	420	—	30

It is useful to compare data on total persisters and partial persisters. The distribution of SHNPs for each is similar in several respects. The median number of postings displayed is nearly 33 for total persisters, compared to 28 for partial persisters. These data suggest that systems should help users who retrieve more than three screens of postings. On the other hand, behavior of users who retrieved 43 or more postings suggests that for a notable number of these users persistence continues up to 200 postings. Only 8 users who retrieved between 43 and 200 postings displayed none, while 18 displayed all and another 20 partially persisted by displaying between 43 and 200 postings. Above 200 postings the evidence goes in the opposite direction: 37 users displayed no postings; 3 displayed some or all.

Finally, the data allow us to assess how often SHNP retrievals triggered the anticipated futility point (AFP) among users of LUIS. Because the AFP is the maximum number of postings a user would be willing to begin browsing, the question that has dominated this discussion so far—how many postings does a user display?—is not relevant. Rather one asks at what level of postings retrieved do more users abandon their searches rather than display at least one additional screen of index lines or one bibliographic record. In answering these questions, data about partial persisters are cast in terms of SHNP—that is, the number of postings retrieved, not number of postings displayed. Evidence about users who displayed bibliographic records can also be considered. In less than one-seventh of

the cases studied did the SHNP trigger the AFP (see table 5). Even at the highest SHNPs, more users continue their searches than abandon them. This suggests that the anticipated futility point for a majority of online catalog users might be very high, exceeding 5,000 postings.

The high AFP is surprising because the concept captures a common experience of information seekers, one that librarians experience personally and observe in users' behavior. One would assume it generally obtains at a much lower level. Indeed, for purposes of discussion, Blair posited it was 50 postings. Although the data in table 5 call into question an AFP of 50, different system features might result in different AFPs. Thus, Blair defined AFP in terms of the number of documents a user was willing to begin to look at. Deciding to look at a document is far more daunting than deciding to look at an index screen entry or a bibliographic record. Furthermore, Blair's discussion of the concept presumes a retrieval system that did not display brief information about documents, but simply a number of documents. The present study's data suggest that the more item-specific information a system initially displays, the greater the persistence of users in displaying additional records.

Comparison of user reactions to SHNPs greater than 50 is relevant here. When author, title, and subject searches retrieve more than 50 postings, LUIS first displays a guide screen. When keyword searches retrieve more than 50 postings, LUIS first displays an index screen. Index screens include short citations to individ-

TABLE 5  
EVIDENCE OF LEVELS OF ANTICIPATED FUTILITY POINTS (AFP)

Postings Retrieved in Session	Overloaded Users (AFP Exceeded)	Postings Displayers (AFP Not Exceeded)
1-42*	5	77
43-100	4	54
101-200	4	44
201-1000	23	74
1001-4999	9	41
5000-	5	13
Totals	50	303

\*Where postings retrieved exceed one screen.

ual items retrieved (see figure 2); guide screens summarize groups of postings and have more limited or no item-specific information (see figure 1). Users who retrieve more than 50 postings are significantly (likelihood ratio = 19.97,  $df = 3$ ,  $p < .0002$ ) more likely to display additional screens when the system initially displays an index screen rather than a guide screen. In 95% of SHNP keyword searches that retrieved more than 50 postings, users displayed one or more additional screens. But in author, title, and subject searches that retrieved more than 50 postings, 61%, 83%, and 90% of users, respectively, displayed additional screens. The greater persistence in displaying keyword results is additionally noteworthy because the keyword searches retrieved more postings than the author, subject, and title searches: a median of 399 postings for keyword searches as opposed to 357 for subjects, 380 for title, and 181 for author. This result suggests that systems that display no item-specific information, but only number of postings, or that lead users to entire documents rather than brief bibliographic information might lower users' AFPs.

#### DISCUSSION

The investigators' study of LCS suggested that user persistence extended to 30 postings (Wiberley, Daugherty, and Danowski 1990). This is only slightly different from their earlier review of the literature,

which suggested that above 35 postings overload was more common than persistence (Wiberley and Daugherty 1988). The present study offers evidence to support these generalizations, but also provides evidence that users will frequently persist far beyond 35 postings and that overload does not clearly set in until the number of postings retrieved exceeds 200.

The number of instances of greater persistence by users of LUIS than by users of LCS suggests that the user-friendly features of LUIS—arrangement of postings in helpful orders, ease of movement among screens, and simplicity of commands—make a difference in helping users persist. Whether alternative system designs can encourage even greater persistence remains to be investigated. It is possible, for example, that users persist more on systems that, unlike LUIS, do not give a total number of postings retrieved, but rather display numbers of postings retrieved for each index line or guideline. Such systems do not risk overwhelming the user with the totality of a large result, but display results in smaller, presumably more manageable units.

At the same time that transaction log evidence shows greater persistence by LUIS users than by LCS users, questionnaire data show a higher percentage of users of LUIS reported experiencing overload than had users of LCS (26% vs. 11%, or 136% higher). In view of both the larger size of the LUIS database (725,000 vs. 425,000 bibliographic records) and LUIS's provision

of subject and keyword searching—not available in LCS—this higher percentage is not surprising. It supports projections that growth in size of databases and in power of search engines will increase incidence of overload (Dean 1988).

In the LCS study, the median response to the question “In general, how many matches would you consider to be ‘too many?’” was 15. Yet most users who retrieved more than 15 postings and did not display a call number displayed 30 postings. This difference led the investigators to urge caution in use of questionnaire data for system design. Likewise, the findings of the present LUIS study also point toward cautious application of questionnaire data, but suggest as well that user responses can help in interpretation of transaction log data. The behavior of partial persisters on LUIS suggests that 28 postings is the limit of persistence. At the same time, comparison of behavior of totally persistent and overloaded users suggests persistence extends to 200 postings. Questionnaire data can help in choosing between these divergent figures. First, the median response to the question, “In general, what number entries [postings] would you consider to be ‘too many?’” was 100. Furthermore, analysis of other questionnaire data suggests that users’ information-processing capacity or search styles affect persistence more than system features. These findings from user responses point designers toward choosing a larger number of postings as a threshold for triggering features that help users cope with overload. In choosing a higher threshold, the general principle that provision of help is costly and should be minimized to save resources also applies.

### CONCLUSION

We can summarize this study by saying that the behavior of LUIS users who display some but not all postings retrieved corroborates earlier evidence that users will display no more than 30–35 postings; but behavior of LUIS users who display all postings compared to those who display none shows that the former outnumber the latter until the number of postings

retrieved exceeds 200. In terms of online catalog design, these findings suggest that, given adequate resources, systems should provide help to users who retrieve more than 30 postings. However, if resources are lacking, help is not essential until retrievals exceed 200.

The findings reported here are, of course, based on user behavior on a single system. Comparison of LUIS’s features with those of other systems suggests it is relatively easy to use and causes comparatively little overall fatigue. By displaying total numbers retrieved by a search, LUIS differs from other systems that do not give a total number retrieved but display numbers of postings for each line of the guide screen that first appears. Further research on users’ behavior on other systems will enable us to assess the impact of different design features on user persistence.

In analyzing transaction logs, we have become increasingly aware of their richness. The present analysis is just a first step in interpreting them. We anticipate that further analysis will refine, if not revise, some of our current conclusions. Working with these logs has been an exciting but exhausting process. Among other things, extraction of the observed sessions from the raw transaction logs took hundreds of hours. We have often, only half-jokingly, compared the cost to that of extracting isotopes for the bomb.

Given the value of our data, we hope to share them with other investigators after we have finished working with them. Likewise, we hope that in the future there will be a way for us to access similar data about the users of other systems. Library and information science needs a repository for transaction log and survey data similar to the Inter-University Consortium for Political and Social Research.

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# Notes on Operations

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## Closing the Loop: How Did We Get Here and Where Are We Going?

Marion T. Reid

*In this paper I address two primary topics in library materials acquisitions in the electronic age: How did we get here? and Where are we headed? To obtain sufficient background for this, I interviewed 15 key people who represent vendors of library materials: 3 subscription agents and 12 traditionally monograph vendors. I asked three questions: (1) Briefly, what is the history of library automation within your company—both automation to support internal operations and automation to provide services to libraries? (2) What is your prognosis on how technology is transforming the roles of acquisitions librarians? and (3) How do you compare the characteristics and qualifications of the acquisition librarian of 25 years ago with the characteristics and qualifications of today's acquisitions librarians? This paper is based on both my interpretation of the collective wisdom of the individuals I interviewed and on more than a decade of personal experience as an acquisitions librarian.*

### HOW DID WE GET HERE?

#### TWENTY-FIVE YEARS AGO

In 1969 the acquisitions librarian worked primarily with manual systems. There were a few exceptions to this standard (e.g., the University of Michigan Library's book order system, which relied on key-punched cards), but the vast majority of library acquisitions people plowed through the *National Union Catalog (NUC)*, *Books in Print*, and (if nothing was found) *Publisher's Weekly* and *Forthcoming Books*, *Book Publishing Record*, *Cumulative Book Index* and, if all else failed, publishers' catalogs. They waited expect-

tantly for the next five or six volumes of *NUC Pre-56 Imprints* to arrive. They checked the card catalog to make certain that the requested item was not already in the library and to see whether related editions were already in the collection. They also checked the order files to make certain that the item was not already on order or in process. Each purchase order had between seven and ten copies. All vendor copies were mailed by U.S. post; rush orders were sent via air mail.

Communication with vendors took place through U.S. mail. There were no 800 phone numbers. There were no library-generated credit memos. Letters

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were usually customized for the particular problem at hand. Less formal libraries sent form letters instead.

Library staff repeated keyboarding at point of creating the order request, the purchase order, and for all label creation. Every record creation and every insertion in, consultation of or removal from a file provided opportunity for yet another human error. It would often take a staff member in a large library up to three months to resolve a large serial invoice before it could be approved for payment.

There were few electrical outlets within technical services. With luck, an acquisitions department might be outfitted with an electronic calculator. If the library had an electric typewriter, it was most likely used by the secretary in the director's office.

Although some research libraries had several librarians within their acquisitions area, the acquisitions librarian often experienced an acute sense of professional isolation, for there were no others on the library staff who could easily discuss the details of acquisitions. The only ways to obtain new acquisitions information were from library literature, from the few vendor representatives who actually knew something about the book business (most had previous experience as salespersons, but not within publishing or library arenas), and at professional meetings—primarily those of the American Library Association, as there were no Charleston, National American Serials Interest Group or Feather River conferences.

In 1969 those vendors who used electronic technology had crude, unsophisticated systems that automated in-house tasks such as purchasing, receiving, and invoicing. One vendor interviewed recalled pictures of staff from yesteryear lined up at the huge Rolodex files, awaiting their turns to check or update a customer's address.

Title databases were highly inaccurate by today's standards. There was no authority control on orders; for the most part the vendor simply forwarded to the publisher the bibliographic information provided by the ordering library. As with acquisitions departments in libraries, every key-

boarding and filing point provided another opportunity for error.

## THE 1970s

During the early 1970s the consortium now known as the OCLC Online Computer Library Center, Inc., was rapidly adding members. The OCLC database was viewed as a cataloging system for the catalogers alone. Acquisitions librarians, who sought to use it as a verification tool, had to bargain for any searching time at the Beehive terminals. With the arrival of OCLC, machine-readable cataloging (MARC) records became widely available. Vendors, some of whom had provided catalog cards or selection slips to libraries for quite some time, were now able to provide libraries with more bibliographic information in the most complete, widely accepted format.

Vendors began to develop more sophisticated in-house systems. Some provided libraries with the opportunity to dial into their title databases. Others provided libraries with fiche copies of their databases and updated them frequently.

Some vendors developed proprietary acquisitions systems. Some offered free software to customers who provided the concomitant hardware, while other vendors leased hardware to their customers, as well. Some vendors, if the volume of a library's order was large enough, loaned hardware to the institution.

Toll-free 800 telephone numbers also came into being during the 1970s, making it possible suddenly for acquisitions staff to actually talk with customer service representatives. Vendors began assigning library accounts to individual customer service representatives, and acquisitions staff and vendor staff began acknowledging each other as human beings.

International Standard Book Numbers (ISBNs), which had been created in the 1960s, were for the most part unreliable until Bowker in the late 1970s began requiring that to have a work listed in *Books in Print* a publisher had to supply the ISBN along with other pertinent bibliographic components and pricing information.

## THE 1980s

During the 1980s, the personal computer appeared and vendors were able to provide libraries with more sophisticated database information to be kept in-house and frequently updated by disk or CD-ROM.

In the serials arena, scientific, technical, and medical publishing exploded. Publishers raised prices significantly on an annual basis, inflation aside. Currency exchange began to put U.S. libraries at a disadvantage in purchasing foreign materials. The massive serials cancellation projects began.

More and more libraries followed suit with a trend that had begun in the late 1970s: purchasing online automated library systems. Library materials vendors began to create custom interfaces with library automated systems so that acquisitions librarians could order electronically by disk, by tape, or by telephone. Serials check-in systems were the last component to be developed for many library automated systems. Serials vendors devised ways for libraries to use their large databases to support local serials check-in.

As for standards, the Book Industry Systems Advisory Committee (BISAC) moved from defining what a paper purchase order should look like to talking about electronic ordering standards.

Where were the publishers in all of this? The publishers were the last to automate. They did not think of themselves as distributors. The impetus for publishers' automation came not from libraries or vendors of library materials, but from bookstores.

During the 1980s fewer than a dozen members of the American Association of Publishers joined together to develop PubNet as a mechanism for college bookstores to acquire textbooks more easily by ordering using the ISBN number. Eventually, publishers saw the economies in this application of technology and expanded the lists of titles available through this system. Today library materials vendors can order through PubNet and immediately determine availability and date of receipt. One vendor told me that his

order time to obtain books ordered through PubNet cut by 50 percent the time it took for him to order by mail. The limitations of using PubNet, however, are that it is not comprehensive for all major publishers and that one must have a book's ISBN number to order.

## THE 1990s

Today many libraries are into their second generation of automated systems, while many vendors are into their third or fourth generation. More than ever before, computing power costs less and has more capacity. One vendor estimates that between 1971 and 1992, his orders increased ten-fold, while his computing power increased 320 times. We are beginning to take advantage of the automated world: we are no longer simply mimicking manual processes with our automation.

Library materials vendors are more commonly using the MARC record format for their databases. Some are enhancing those records with table-of-contents information or with reviews. More vendors are using their databases to produce collection development tools—customized electronic catalogs by subject or by subject and geographic area.

Electronic ordering is much more common. Many vendors are available through the Internet, and some libraries are sending batch transmissions using FTP (file transfer protocol) through the Internet. BISAC and SISAC discussions are focusing on how to implement a standard for electronic interface. Acquisitions librarians communicate regularly with each other via e-mail, listserv discussion groups, and electronic newsletters. The keyboard is their professional safety net.

Today, library acquisitions exists at all levels of technological advancement. Many of the older systems, even those from the early 1970s, are still in operation because some libraries still need them. Many school libraries, public libraries, small academic libraries, and special libraries have not yet taken the plunge into having an integrated automated system.

We are all part of society at large, and we are all affected by the pressures and

environment of our world. Within the past decade greater value has been placed on timeliness and efficiency. We want to place orders more quickly and efficiently; we want to interact with each other more quickly and efficiently; and we want to accomplish our "paper flow" more quickly and efficiently. In this world of downsizing, rightsizing, and reengineering, there is greater pressure to do more with less. Fortunately, a considerable decrease in costs has accompanied the incredible increase in computing capacity that we have seen. The environment, our culture, and our current values are forcing us to look closely at our own organizations to figure out how we can use technology more efficiently. More and more we are using technology to release us from tedious tasks and to become more accurate.

#### WHERE ARE WE GOING?

Collectively, we have begun to utilize technology effectively. To best address the question *Where are we going?* I will talk about who we are, what our product is, and how we are relating to each other.

#### WHO WE ARE: THE ACQUISITIONS LIBRARIAN

Acquisitions librarians are no longer immersed in the nitty-gritty details of reviewing every order and assigning vendors. They must be technologically adept, yet in that technological environment they can no longer make decisions independently. One side effect of an integrated automated library system is integrated decision-making when changing, or even tweaking, the system.

Librarians are beginning to look more to vendors for outsourcing technical processing. This trend will force acquisitions librarians to become generalists—to have more of an overview of selection and of acquisitions by many means, including interlibrary loan, electronic document delivery and online databases, cataloging, and end processing.

Acquisitions librarians must be able to grasp not only the details, but also the overview. They must make their needs

known. They must be able to analyze a problem, come up with alternatives, select and implement one, scrap it if it doesn't work, and then adopt another solution. Acquisitions librarians must be decision-makers.

Acquisition librarians must be able to use business methodologies. As they buy more and more services, they must be able to analyze internal costs and compare them with the vendor's unbundled pricing so they can realistically compare in-house and outsourced costs. The acquisitions librarian must be a business person.

#### WHO WE ARE: THE VENDOR

Today more than ever, the library vendor is selling service, value-added service. Being a library materials vendor is a precarious business. In the past, when the business was primarily selling things (books), a library could easily switch from one vendor to another if not satisfied. Today, the complexities of approval plans have made quick switches more difficult so that when a vendor assumes acquisitions and cataloging functions, quick switches will not be made easily.

Vendors—library materials vendors, vendors of bibliographic information, and library systems vendors—must focus both on helping librarians reduce their internal costs and on selling books, subscriptions, cataloging information or library systems to the library. The challenge for vendors is to be successful at getting the customer to pay for value-added service on a sustained basis.

#### THE WHAT: THE INFORMATION BUSINESS

We are in the information business, and information is changing because of technology. The number of formats information comes in continues to expand. Today, we are buying not only books, journals, microforms, and tapes, but CDs, CD-ROMs and videos, and database access, as well. More and more we are buying information customized for the user's immediate need: we are negotiating CD-ROM

and online database contracts and we are assigning IDs and passwords to our users.

Libraries have begun to buy information at the article level and at the table of contents level. Soon we will buy it at the chapter level and perhaps even at the paragraph level.

Many of the new formats we work with, such as hypertext and interactive multimedia, will lead us to ways of carrying intellectual property that we cannot now imagine. This is the most exciting part of what we can do with technology. We will have different ideas expressed in different ways: new ideas that cannot even be expressed now.

#### THE HOW: TECHNOLOGY

Technology is changing the way we conduct our business and the way we move information. Acquisitions librarians and vendors already rely on multiple technologies to communicate, to conduct business. Our communications methods will include (1) interactive access (library staff accessing vendor files, vendor staff accessing library files), (2) e-mail, to communicate informally; (3) e-mail, to move documents, (4) file transfer protocol (FTP) to move files, and (5) electronic data interchange (EDI) to move transactions from computer to computer without human intervention.

These methods of communication are currently possible via the Internet. There is talk of charging for Internet use. How would that affect us? Will vendors begin to collect the toll on the information highway?

While there is much information available on the Internet, it is often not easy to find. Reference librarians and catalog librarians as indexers will begin to create navigation tools so that people can find the information they need more easily. There are intellectual property rights questions here for both the information on the Internet and the navigation tools developed. There are marketing questions for the libraries in which the navigation tools are developed. Will the acquisitions librarian become a marketing agent for materials "published" in the library?

In the not-too-distant future libraries

will have electronic kiosks where the acquisitions librarian can insert a card with a list of information wanted and download it to diskette. Depending on the amount paid, and on the purchase provisions, the information bought may automatically erase after a certain number of uses or after a certain amount of time. Imagine the acquisitions implications of purchasing information in this manner for the library, or with library funds for a user.

EDI exists, but its use is not an accomplished fact in the world of library acquisitions. Publishers are now sending advance shipping notices to bookstores so that, when the store receives a shipment, staff can wand the license plate or barcode over the box, know immediately what is supposed to be in the box, and add that information to their automated system. No library has yet teamed up with its systems vendor and its library materials vendor to do this.

We must take full advantage of electronic invoicing capabilities. We must move the BISAC X12 discussions along. We must all be trading partners of the X12 and of the international standard EDIFACT transaction sets so that we can communicate at a standard level, no longer needing proprietary interface for every electronic data interchange.

We need more partnerships: partnerships of librarians, vendors (materials vendors, systems vendors, outsourcing vendors), and publishers to cooperatively advance the development needed to adopt the common standard which will allow us to move files transactions, documents, and information easily.

#### WHERE'S THE LOOP?

Perhaps the model in figure 1 will help describe the loop. In this figure, every line represents a loop. For example, there is a loop between the acquisitions librarian and the library materials vendor, a loop between the library materials vendor and the publisher, a loop between the acquisitions librarian and the publisher, and so on. In some cases, more than two players participate in a loop, and there are many loops and sub-loops.

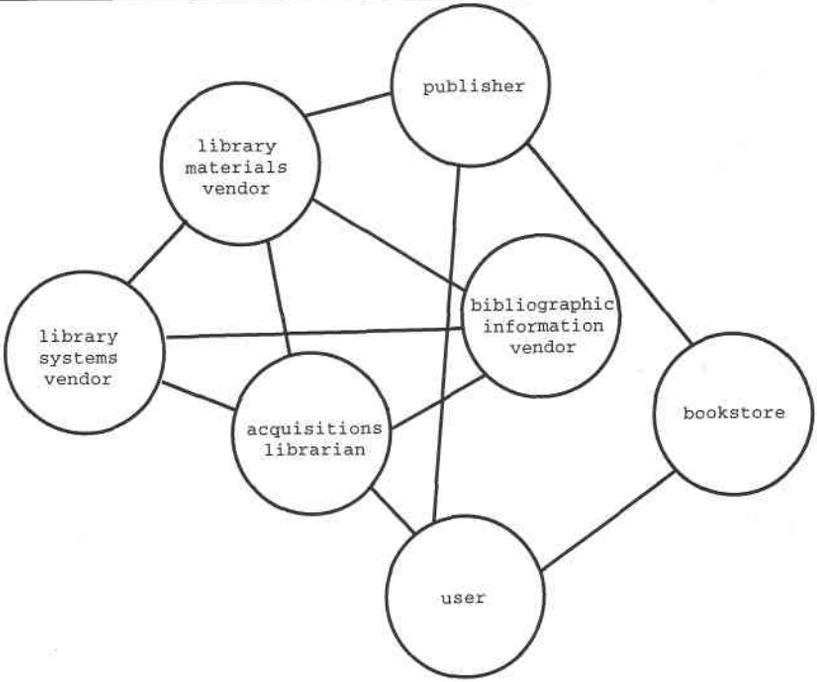


Figure 1. Where's the loop?

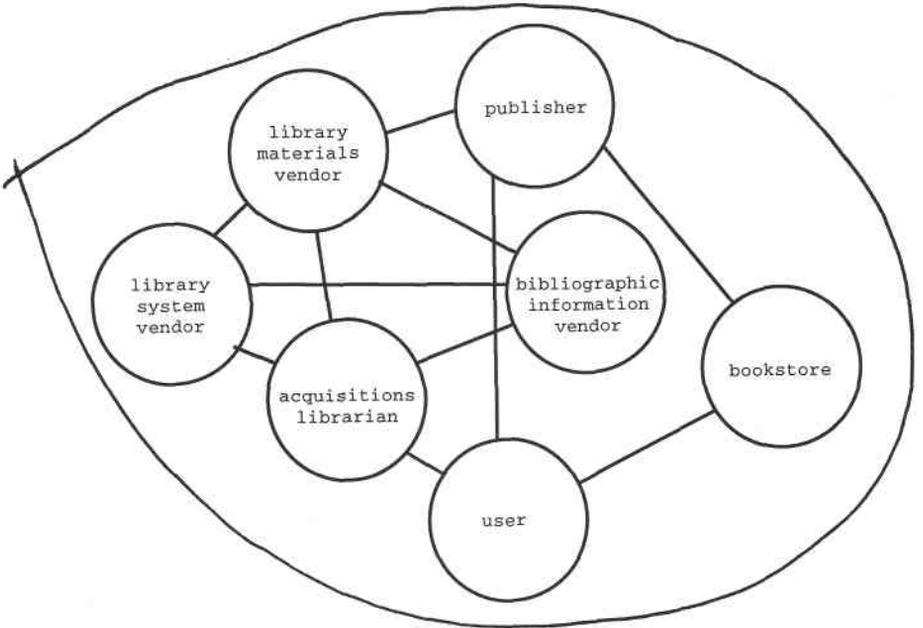


Figure 2. The loop.

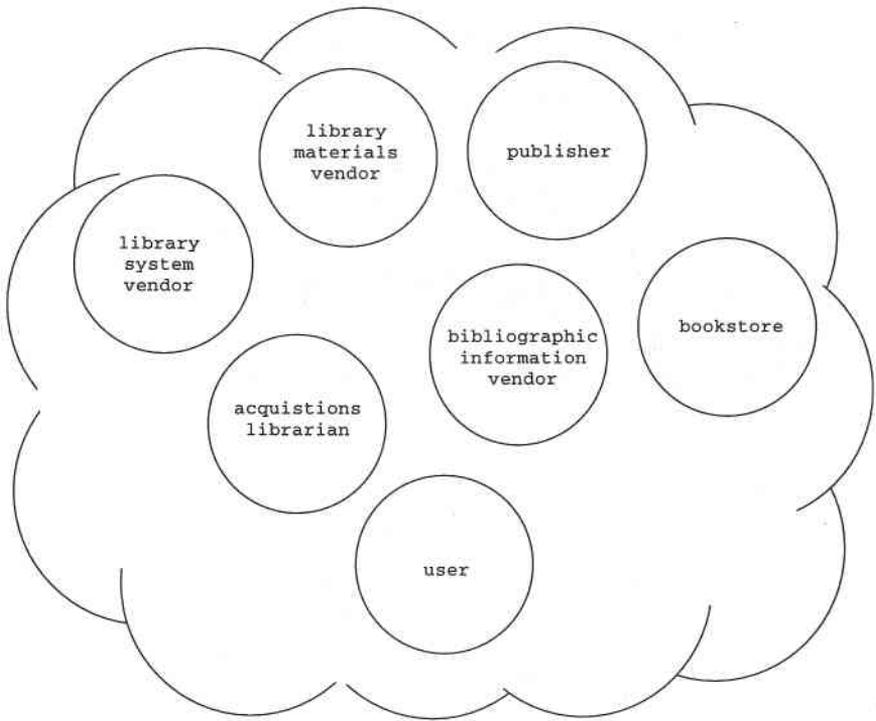


Figure 3. The cloud.

More acquisitions vendors are coming into the loop of technical processing. More librarians are coming into the publishing loop. Publishers are marketing products for the end user.

I believe the loop is better illustrated by figure 2. All of the players I have mentioned—and more that you will be able to identify, depending on your situation—should be within the loop.

Yet a better graphic representation, I think, is that shown in figure 3: the cloud. In the world of telecommunications and

ATM connectivity, connections are represented by a cloud rather than by point-to-point lines. I like this idea.

Assuming that we have a standard that allows us to interchange electronic data easily, I think that this depiction of all of us as partners floating in a communications cloud is a good one. Our boundaries and our basic interactions must change. We have the technology. As partners within the scholarly information industry, we must work together to do this.

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# The Internet and Collection Development: Mainstreaming Selection of Internet Resources

Samuel Demas, Peter McDonald,  
and Gregory Lawrence

*Methods for developing efficient and systematic identification, evaluation, and selection of Internet resources are presented. It is argued that the principles and practices of selection, when adapted coherently and systematically to networked information, amply serve to integrate this emerging electronic milieu into collection development strategies. Key collection policy issues are identified and an excerpt from a collection policy statement is included. A working taxonomy of Internet-accessible resources, developed as a tool to aid in adapting selection practices to Internet resources, is presented. Methods of incorporating Internet selection into the day to day activity of academic library collection development programs are outlined, including training, specifications for a selector's workstation, selection strategy, and the need to facilitate communication among selectors. This work is presented as an example of the kind of applied research and development work the authors believe is needed to complement and extend the largely theoretical approach to selection of electronic resources that characterizes the literature of collection development.*

A common refrain among librarians is that the Internet is like a gold mine. It has also been characterized as a flea market. One must sift through a chaotic mish-mash of information lacking standards, quality controls, or guidelines to find just a few "nuggets," i.e., scholarly resources worth delivering as part of an academic library's resources and services. This paper is about the work of a group of "Internet Prospectors" at the A. R. Mann Library at Cornell University who set out to develop a methodology to assist collec-

tion development in this sifting process. This advance team of selectors conducted a one-year project to adapt the principles and practices of collection development to the world of Internet resources, thus setting the stage for mainstreaming selection from the Internet into ongoing collection development activity.

The popularity and utility of the Internet for current, informal personal and professional communications in academia is well documented. However, use of the Internet for dissemination and retrieval of

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refereed scholarly publications and other substantive information resources of enduring value is still limited, due to issues associated with protection of intellectual property rights and the economics of electronic publishing, and to the rudimentary nature of network organization and retrieval tools. Many networked resources are incomplete or out of date, too many sites are not reliably maintained or are poorly organized, and it is hard to keep up with the burgeoning number of new sites and resources. Nonetheless, academic libraries are beginning to assist their patrons in making effective use of the explosion of Internet-accessible resources, and to integrate networked resources into library collections.

While some faculty, staff, and students genuinely enjoy cruising the net and serendipitously discovering useful information resources, many do not have the time or patience. Whether they know it or not, what many Internet users are demanding is the kind of selection and organization that libraries have traditionally brought to the world of published information resources. For example, Robin Raskin, the editor of the technophilic publication *PC Magazine*, complained in her April 26, 1994, editorial:

With today's proliferation of online information, finding what you want is nothing short of a major victory. Eventually, the information highway will sort itself out. Using it efficiently and economically will become second nature. Meanwhile, an eminent scientist and long-time friend of the family once remarked, "If I was ever in close competition with another scientist, and I wanted to get a year ahead, I'd just go out and buy them a computer." True words, but if I really wanted to put them on idle, I'd add an Internet connection to the gift.

Clearly, the information highway will not magically "sort itself out." It is the societal mission of librarians to select, organize, and provide access to published information resources, and librarians are beginning to apply their information organizing skills to the Internet. The "proliferation of online information" will continue, and we believe librarians must

address the challenge of making qualitative selections according to carefully considered selection criteria and collection policies. The net effect should be to integrate network-accessible resources into qualitatively selected collections.

This paper is about the methods used by one library to mainstream selection of Internet resources into its collection development process as an academic research library. This process is not presented prescriptively, but as an example of a systematic approach, which others may find useful in designing their own strategies for Internet selection.

### THE CHALLENGE TO COLLECTION DEVELOPMENT

Applying the principles of selection to Internet-accessible resources is but one part of a larger challenge: learning how to select among a wide variety of potential access mechanisms. Increasingly, the same information resources are available in a variety of formats, including print, microform, CD-ROM, magnetic tape, and via the Internet. Internet resources may be downloaded (copyright and contractual regulations permitting), archived, and made accessible from local servers; or they may be made locally accessible via a pointer or other Internet connection to remote servers. Thus, in addition to evaluating the quality and utility of the information itself, we must develop methods of determining, for each resource, the optimal storage, delivery, and preservation mechanisms.

Adapting the principles and practices of collection development to the emerging information environment can seem a daunting task. However, it is made easier by breaking the challenge into manageable units of investigation—that is, by gaining in-depth experience with each new access mechanism and publishing format as it emerges. Comparisons of methods, criteria, and strategies for various formats and access mechanisms will provide the experience necessary to produce an updated body of collection development theory and practice. The new collection development will enable libraries

to weave these multifaceted strands into an intellectually cohesive, user-friendly "collection" of library resources. A brief description of the state of the art in collection development for the electronic library and of the overall approach taken at Mann Library will provide the context for the work reported in this paper.

### COLLECTION DEVELOPMENT FOR THE ELECTRONIC LIBRARY

#### THE STATE OF THE ART

Systematic selection of Internet-accessible resources has not been treated in the literature. Thus far, most writing on collection development and electronic resources consists of theoretical discussions of the challenges confronting libraries and the concept of collections as we adapt to new technologies. The broad collection issues related to the electronic library (e.g., text mutability, potential for cooperative collection development with virtual collections, access versus ownership, and the library's role in the evolving system of scholarly communication) are treated, for example, by Atkinson (1989, 1990), Buckland (1992), Lancaster (1982, 1993), Lynch (1991), Reed-Scott (1990), Shreeves (1992), and Zhou (1994). While there is general agreement that the concept of library collection building will somehow expand to incorporate access to networked information, there is little concrete guidance on how to achieve this goal. Harloe and Budd (1994) offer a welcome prod to bibliographers to get beyond fretting about the oversimplified dichotomy of access vs. ownership, and on with the complexities of beginning to actually build collections/connections which include networked resources. However, thus far little of a practical nature has been written about exactly how collection strategies, selection methods, and criteria are changing to assimilate networked resources.

Meador and Cline (1992) point out correctly that the bibliographer, long rooted in the culture of the book, is one of the last in the field to have become involved in more than a peripheral way with automated systems. Lancaster (1982) has

predicted that with the advent of the paperless society the acquisitions and selection functions of libraries are likely to decline in importance. We do not envision a paperless society and are convinced that the need for methods—both human- and software-based—of qualitative selection and customized filtering will be even greater in the electronic milieu. Dowd (1990) argues convincingly that the essential mission of the library "imposes . . . on us the obligation to winnow a vast output of records in many forms, and to construct a combination of collections and services that will provide effective access for our users." The importance of selection in the electronic world has also been emphasized by Summerhill (1992) and Atkinson (1989).

There have been many calls for bibliographers to equip themselves with the skills and tools, including a bibliographer's workstation, to help handle the selection of electronic resources (Meador and Cline 1992; Zhou 1994; and Welsch 1989). Even a casual perusal of professional development programs offered for bibliographers in recent years clearly indicates a closer focus on selection of electronic resources. We believe most bibliographers by now accept electronic publications as part of the universe from which they select, and seem ready to engage in systematic work to develop new collection policies, selections strategies and criteria, and collection development processes.

Even so, much of the actual selection of electronic resources generally, and networked information in particular, is done by staff with assignments in systems and public services. Bibliographers are starting to assert the need for a cohesive process of selection addressing materials in all formats, and are just beginning to develop practical methods for coordinating the complex process of selecting information content available in a variety of formats and access mechanisms. Demas (1989) calls for the mainstreaming of selection of electronic resources, and has described (1994) a conceptual model for selection of electronic resources and an organizational framework for coordinating selection and implementation efforts.

## A CONCEPTUAL MODEL AND ORGANIZATIONAL FRAMEWORK

Mann Library's approach to collection development for the electronic library was developed by the library staff over the past decade as one means of effecting a conceptual and practical integration of print and electronic publications into one intellectually cohesive set of library resources and services. The basic elements are briefly outlined here to provide the collection development programmatic context within which the Internet prospecting took place.

A taxonomy of genre of information resources was evolved to categorize information resources according to their characteristics, how they are used, and similarities in systems of access. Information genre include bibliographic, numeric (including spatial and geographic information), full text, applications software, sound, and image. As one part of our total selection effort, a group of selectors, called genre specialists, were designated to become expert on the publications in all formats in a given genre. The genre specialist identifies and evaluates new information resources, selects those that fall within the collection subject scope and meet quality standards, and determines the most appropriate mechanism of access.

An important part of the selection recommendation is determining what publishing medium and what delivery mechanism (i.e., hardware, software, and telecommunications configuration) is most appropriate for a given resource. As a selection aid in choosing the optimal mechanism of access for a particular resource, genre specialists use a system of "tiers of access" (described in Appendix A) to indicate the level of access that should be provided for each selection. Resources to be delivered over the campus network are accessible via the Mann Library Gateway. This user-friendly front door to the electronic library lists the library's electronic resources and makes connections to them accessible via the campus network.

Selection recommendations are pre-

sented to the Electronic Resources Council (ERC), an administrative review board made up of representatives of the major functional units of the library. The ERC assesses the impact of each selection on library policies and operations before it is selected, and determines if the library is capable of handling the resource. The ERC also serves as a forum for coordinating activities among the functional units of the library in acquiring, organizing, and providing services for new electronic formats. The function of the ERC is to focus the library's efforts to mainstream, or operationally and conceptually integrate, new genres and formats into the library's resources and services.

Collection building at Mann Library involves two full-time and three part-time (contributing 40% of their time) bibliographers. In addition, six professional staff from other library divisions have part-time selection responsibilities amounting to less than 40% of their duties. Selection responsibility among these eleven staff is divided by genre (five genre specialists), subject, and other specializations (e.g., government information). Consultation among selectors—for example, between genre specialists and subject specialists—is essential in this complex publishing environment and the model developed to facilitate selection of electronic resources.

Internet resources cut across all genre and subjects. The essential task of the Internet Prospectors was to pave the way for the integration of selection from the Internet into this overall collection development model.

## PROJECT GOALS

The ultimate goal of the Mann Library in undertaking the Internet Prospectors Project was to expand the dimensions of our collection building efforts to incorporate networked resources. Rather than begin by training all genre specialists and selectors, the Internet Prospectors were appointed as an advance team to identify and explore the questions attendant to mainstreaming the selection of "titles"

available on the Internet. This gave the library a base of experience on which to build an ongoing program of collection development for networked resources. The primary activity of the Internet Prospectors was to identify and evaluate, from an academic library collection development perspective, all of the available Internet-accessible resources pertaining to agriculture, biology, and human ecology. The specific goals of the team were to:

1. identify and evaluate the resources currently available and establish a baseline for ongoing systematic selection of Internet resources;
2. set the stage for the mainstreaming of the selection of Internet resources by developing selection strategies and assessing selector training and equipment needs;
3. establish preliminary collection development policies and guidelines for networked resources;
4. select a critical mass of representative Internet material for "addition to the collection" (presentation of these recommendations to the ERC would then precipitate action in mainstreaming Internet resources in terms of acquisitions, cataloging, computing and telecommunications, as well as public services); and
5. begin to build Internet navigation skills among selectors.

#### PROJECT METHODS AND OVERVIEW

The Internet Prospectors team consisted of four librarians, all with defined selection duties in print format. In the fall of 1992, prior to beginning their formal prospecting, the team received training from colleagues at Cornell in the use of file transfer protocol (FTP), Telnet, and Gopher. A series of brown bag lunches, open to all professional staff, was held during the fall semester as a forum for staff to exchange information about Internet resources and tools.

From January through June 1993, the team members aggressively explored and mined the Internet to identify all informa-

tion resources of potential interest to Mann Library clientele. A taxonomy of Internet resources (see Appendix B) was used to categorize all potentially relevant resources that were encountered. Each team member took responsibility for systematically exploring the Internet in one or more taxonomic categories. Internet Prospectors were asked to identify relevant resources, raise the selection and collection policy questions they provoke, identify selection resources and the elements of a selection strategy, and build a base of experience in particular categories of Internet resources. Once this groundwork had been laid by the Internet Prospectors, selection responsibility was passed on to the logical genre specialist.

While conducting selection, team members made printouts of sample pages from, or gathered descriptive information on, all pertinent Internet resources discovered. These were filed in a set of folders that were organized by taxonomic categories and centrally stored. During the spring semester 1993, team meetings were held approximately every two weeks to discuss the findings in each category. These team selection discussions of Internet resources were the most useful part of the entire project. Title by title decisions were made concerning which resources should be recommended for access through the library ("addition to the collection," whatever form that might take), which titles should not be selected, and why. Out of the discussion of individual "titles" in each category, preliminary collection development guidelines and selection criteria were extrapolated for the taxonomic category as a whole.

During the course of the project, over 1,000 titles were perused, and over 250 relevant resources were identified and discussed in detail. A total of 41 titles were ultimately selected from this exercise and presented to the ERC for mainstreaming into the Mann collection. After examining the collections and operations issues raised by selection of these resources, the Internet Prospectors was disbanded. Based on what we had learned, Internet selection was integrated into ongoing collection development activity.

### PROJECT ASSUMPTIONS AND PARAMETERS

To focus our efforts and make our prospecting and selection task manageable, we adopted the following assumptions and parameters:

1. The subject, language, and geographic parameters of the existing Mann Library collection apply equally to Internet-accessible resources. We did not consider resources in subject areas outside the collection scope of Mann Library.
2. Our emphasis in selecting Internet resources was at the individual "title" level (e. g., specific documents, bibliographic files, numeric files, genetic sequence files, and newsletters).
3. By extension, we decided, initially, not to point to whole collections of resources, such as gopher servers, via the library's Gateway. Instead, we selected and provided access to specific resources (titles) within such collections. We recognize that this perspective is contrary to the trend in libraries to set up Gopher or Web servers that point to other Gopher/Web sites which contain resources of potential interest, which in turn point to other servers, etc. These pointers to other servers are very useful tools, and they certainly play an important role in a library's information services program. We firmly believe that no one should stand in the way of the public's access to cyberspace, and applaud and support those who are constructing the elaborate network of Gopher and Web servers.

However, we do not believe that this is ultimately the best way for libraries (as opposed to computer centers, associations, government agencies, academic departments, and individuals) to make their contribution to organizing and providing access to Internet-accessible resources. We believe that title by title selection of high quality resources is one of the most important values librarians can add in providing access to information resources, including those accessible

via the Internet. A careful selection of resources is the touchstone of the electronic library.

4. The titles selected would, in some sense, be "added to the collection" as individual titles. Using the concept of "tiers of access," mentioned above, Internet resources would be selected for delivery via the Mann Library Gateway and designated as either "Tier 1" or "Tier 2" (see appendix A).
5. Our focus was exclusively on the selection of resources appropriate for our clientele and "collection," and not on the impact of these selections on library operations. While we noted the major technology, acquisitions, cataloging, public service, and preservation implications of our selection decisions, we made no attempt to address these issues before implementing our selection decisions. These would be evaluated by the ERC during implementation.
6. Titles examined were, with few exceptions, free of charge. Commercially available information services and resources which are Internet-accessible (e.g., DIALOG, Mead Data files, Compuserve, and America Online) were not included in this exercise.
7. All policy and resource recommendations are considered preliminary and are made to stimulate discussion among the professional staff concerning the place of Internet resources in the collection.

### TAXONOMY OF INTERNET RESOURCES

At the heart of librarianship, and therefore at the heart of our approach to integrating the handling of electronic publications, is the development of systems of classification. Librarians routinely employ and develop classification systems based on subject, agency or publisher, author, format, geographic origin, type of information, and other characteristics. This systematic ordering and naming of type groups forms the basis for our profes-

sional work in identifying, selecting, organizing, and providing access to the records of civilization.

Not surprisingly, we have found the development of classification schemes a powerful tool in adapting the principles of collection development to new forms of publication. The employment of a "genre" model in selecting electronic publications at Mann Library is an example of a schema that groups resources into logical units of analysis and focuses staff expertise on certain information types. Similarly, when organizing our efforts to determine how to integrate the selection of Internet resources into collection development, we constructed a taxonomy—or formal system of nomenclature and classification—of the types of information resources we encountered on the Internet.

Our taxonomy of Internet resources (see appendix B) emerged naturally through analysis of the types of resources we encountered in our intensive perusal of the Internet for resources within our subject scope. Sample pages and background information were collected on each relevant Internet title identified. A preliminary taxonomy was then compiled, based on titles identified in the first month of the Internet Prospector's work. From that point on, information on all new titles that were identified was stored in files corresponding to the established taxonomic categories. At the end of the six-month period of Internet prospecting, the team analyzed and evaluated the titles in each taxonomic category. The team member assigned to select titles in a given category led the discussion and presented his or her findings, ideas, concerns, and recommendations. As a result of these discussions, the taxonomy was revised and refined several times. Towards the end of the process we discovered that Dillon et al. (1993) had developed a sort of taxonomy of Internet resources in their study of the problems of cataloging Internet accessible files.

The resulting taxonomy is a construct of temporary utility and is gradually being merged into the larger body of collection policies and practices. While it served to organize our efforts, it has obvious limita-

tions and is idiosyncratic in that it strongly reflects Mann Library's particular subject interests. Some of the distinctions among categories—for example between the category Reference Resources and other types of monographic and serial publications—are somewhat ambiguous. Similarly, the category Government Information (14.0) overlaps with many others, but is included because of the extreme importance of government publications to our collection. In certain categories, such as Museum Catalogs (8.0), Genetic Information (6.0), Monographs (2.1), and Literature and Book Reviews (10.0), there were simply not enough resources available at the time of our investigation to draw useful conclusions. Some resources defied easy categorization and had to simply be assigned to one selector/genre specialist or another. However, we found that overall the process of devising and working with such a classification scheme was an invaluable exercise in thinking through our approach to Internet selection.

Grouping titles into taxonomic categories enabled us to evaluate and compare, from a collection development perspective, a set of resources with similar characteristics. This classification scheme divided the work into manageable units and facilitated the process of examining each title against the backdrop of the library's existing policies. Although the electronic retrieval and network delivery of Internet resources changes the way information is stored and manipulated, traditional collection development concepts, principles, and practices were found to apply equally to Internet selection. For example, while the text of an electronic book can be downloaded, reprinted, graphically enhanced, keyword searched or even "re-written" for that matter, from a collection manager's perspective, the title is still a monograph, no different than its print counterpart. In the Mann Library model for collection development, an electronic book would be evaluated and selected as part of the "full text" genre.

Thus, the intellectual process of developing and refining a taxonomy not only forced us to identify similarities and differences among individual resources and

among different genres, but helped us to clarify our criteria for determining relevance, quality, and potential utility of both specific Internet titles and categories of resources. Out of the discussions of the individual titles we were able to extrapolate, for each taxonomic category, some preliminary collection guidelines and selection criteria.

### COLLECTION POLICY AND GUIDELINES

Included in each Internet Prospectors project report was a preliminary statement of Mann Library's collection policy and collecting intensity level for each taxonomic category of Internet resources. The collection policy and guidelines emerged from the team selection discussions of the titles identified. The resulting collection policies were recorded by the team members by completing a template for the taxonomic categories for which they were responsible. The elements of the template for each category were:

1. Definition/defining characteristics;
2. Typical examples;
3. Collection policy notes/collection level;
4. Selection questions and guidelines;
5. A list of selection tools useful for identifying Internet resources.

These collection policies are preliminary, and are viewed as works in progress. They provide a starting point for genre specialists and selectors who have been assigned permanent selection responsibility to understand key attributes of each category. One of the most useful functions of these preliminary policy statements is that they serve to record in detail the questions, problems, and policy issues which a genre specialist must address in expanding the work of the Internet Prospectors. The policy statements continue to serve this role and in this sense are dynamic documents rather than permanent codifications of collection policy.

Discussion of specific issues in, and approaches to, devising collection policy for Internet resources is beyond the scope of this paper. However, a listing of key collection policy and selection issues is

included below. In addition, samples from the Internet Prospectors' report are provided as examples of the work done by the prospectors in formulating preliminary collection policies and guidelines. Excerpts from the taxonomic category Electronic Serials (3.0) are included as appendix C. In addition, an indication of current collecting intensity (based on a simple, locally developed ranking scheme) was assigned for each taxonomic category (appendix B).

In general, the 41 Internet titles selected in 1993 as a result of this project fit within the existing scope of the Mann Library collection policy. However, the largest number of titles selected (21) was from the category Newsletters (3.1), where we have instituted a change in collection policy as a result of this project. More than any other category at the time, Newsletters offered the greatest potential for expanding the dimensions of the Mann Library collection. While we have historically had to be quite selective in collecting print newsletters, Internet accessible newsletters offer the possibility of providing pointers to a wealth of timely, topical, and useful—if ephemeral—information published by universities, societies, and associations worldwide. The success of this expansion of collection policy to incorporate a broader scope of newsletters will depend on the reliability of the server sites and the real costs of maintaining pointers.

Similarly, Internet access to proceedings of conferences and symposia was found to be an area with great potential for collection expansion. The specific mid-1993 selections and emphases reported here, while now clearly dated, laid the foundation for collection policies and principles which have since been applied and refined in selecting from a burgeoning universe of networked resources.

With few exceptions, we did not find the policy questions encountered in the course of this exercise particularly overwhelming or intractable. While we do not have answers for all the questions raised, or finished policy statements for every category, we made a good start. At a minimum, we identified the main policy issues

to be addressed for each type of Internet resource.

Collection policy questions and selection considerations identified by the Internet Prospectors are included here as an aid to those in academic libraries currently reviewing their collection policies in relation to Internet resources. These questions are purposely framed in very general terms, so as to apply broadly to Internet resources and academic libraries in general. This selective list of questions does not include issues associated strictly with implementation of selection decisions (e.g., acquisitions, cataloging, hardware and software, and public services issues), though the overlap with these areas is extensive. Note that it is useful for a library to identify its delivery mechanism(s) for Internet-accessible resources before embarking on intensive selection and formulation of collection policy.

1. Which types (taxonomic categories) of Internet resources will your library select for inclusion in the library's collection of information resources? Will you select information resources which you would not select in print form? If so, why?
2. Will you select and provide access to whole servers and everything contained in that server, or only to specific, title-level, information resources?
3. What is your retention policy for various types of publications? Will you weed out those resources which are out of date? Should materials of immediate topical interest (e.g., working drafts of the NAFTA treaty) be mounted for short duration?
4. How will you decide when to provide access via a pointer from the catalog or other information gateway, and when to download the resource and store it locally? Are pointers sufficient, and what are the implications for users of getting lost in cyberspace when examining a specific resource? How will you ensure archival access to titles to which you provide a pointer?
5. What constitutes a "reference work" in the networked environment, and is the distinction meaningful in terms of collection policy and selection strategy?
6. How will you handle ongoing, ephemeral, and informal communications such as online conferences and bulletin boards, which people wish to participate in as well as read?
7. How will you coordinate your policy regarding Internet resources with other libraries on your own campus, regionally, and nationally?
8. If you own or subscribe to a print or CD-ROM or other equivalent of an Internet resource, how will that affect your selection decision? Under what circumstances will you provide more than one format or access mechanism?
9. When the same resource is available in multiple versions, which one(s) will you select and why? If an Internet-accessible resource lacks some substantial element (e.g., illustrations, tables, letters to the editor, errata), how do you decide how important that lack is in the overall selection equation for that title? Will you select a resource which is incomplete?
10. How will you treat Internet-accessible resources for which there is a fee for access? What if contractual limitations preclude access by patrons beyond your immediate academic community? What level of security, authentication, and ability to track transactions to individual users are you willing to provide?
11. Will you select resources that require hardware or software to which a sizable portion of your clientele lacks access?
12. In terms of selection criteria, what adjustments must we make in judging authority and reliability of the source of a publication?

#### MAINSTREAMING INTERNET SELECTION

The work of the Internet Prospectors set the stage for integrating selection of Internet resources into the library's ongoing

collection development program. The project results and recommendations were summarized in an internal report produced in October 1993. The process of mainstreaming Internet selection began with a discussion of the project report by all those involved in collection development at Mann Library (full-time bibliographers, part-time selectors, and genre specialists), and by the library's Administrative Council. With some adjustments, the recommendations of the Internet Prospectors were formally adopted by both groups.

The key Internet Prospectors' recommendations concerning the mainstreaming of Internet selection were:

1. Responsibility for ongoing selection should be mainstreamed into the existing Mann Library selection model; specific selector assignments were recommended for each taxonomic category;
2. A formal training program should be implemented to equip all selectors with the skill needed to perform Internet selection;
3. Computer workstations should be upgraded as necessary to provide selectors the functionality necessary for effective Internet selection;
4. Selection strategy statements, detailing the methods and sources used in identifying titles for potential selection, should be written by the selectors for their area(s) of selection responsibility;
5. To avoid duplication of effort in identifying titles for review, the head of Collection Development should develop a coordinated system of monitoring selected servers and listservs that cut across genres and subjects, and of sharing results of this monitoring;
6. Mechanisms for facilitating communication among selectors should be developed, including: an online decision file, online access to selection strategy statements, and simplified methods of forwarding notices of new resources among selectors.

Following discussion and formal adoption of these recommendations, a plan was developed for making Internet selection

part of the daily life of those involved with collection development. Beginning in January 1994, most Mann Library selectors/genre specialists assumed responsibility for Internet selection, and work began on implementing the recommendations of the Internet Prospectors. Each of the six key recommendations is briefly discussed below, with a summary of action to date in implementing them in the library.

#### SELECTOR ASSIGNMENTS

The categories of Internet resources identified in constructing the taxonomy mapped fairly well onto our selection model of genre specialists and selectors. At this time nearly all selectors are actively selecting Internet resources and routinely presenting them to the ERC for review. In an expansion of our selector model, the acquisitions librarian was assigned responsibility for monitoring online bookstores, publishers catalogs, and other resources specifically related to the business of acquisitions.

#### TRAINING

We determined that selection on the Internet requires familiarity with a number of network resource tools, including: FTP and Archie, Telnet, Gopher and Veronica, WAIS, Mosaic, and the World Wide Web. Also useful is knowledge of file compression and decompression software, and experience in interpreting Internet addresses/URLs/attribute information. Mann genre specialists already had some knowledge of most these tools, but expressed the need for a program of formal instruction that would fill in the gaps, sharpen their skills, and present information about these tools in a cohesive manner.

Our experience suggested that a training program combining both formal instruction and opportunity for hands on exploration would be most effective. The Internet training program alternated formal class sessions (which included hands on instruction) in the use of a specific network tool, with informal Internet exploration and selection sessions, utilizing

the tool presented in the preceding instructional session.

Library staff members served as the instructors and teaching assistants for each session. The training model employed was based on the belief that staff members with some prior knowledge and experience with a particular tool could master the tool, through class preparation, sufficiently well to teach others the basics. The staff members assigned to become "expert" in each topic served as the instructor for the session, and coached one or two other staff members to be knowledgeable teaching assistants for the formal session.

#### SELECTORS' WORKSTATION

Internet prospecting is a high-tech endeavor, involving the discovery and evaluation of resources comprised of text, graphic images, numeric and spatial data files, sound, and video clips. Having the proper hardware configuration and software resources makes the selectors' job much easier. Based on their experience, the Internet Prospectors recommended an optimal hardware and software configuration.

While choice of operating system (Apple, DOS, UNIX) is secondary to other hardware and software considerations, we recommended selectors use a common operating system to facilitate training and sharing of information and files. Our choice of operating system was based partly on local considerations, and was not intended as a generalizable recommendation. We opted to have all selectors use Apple machines, due to the more advanced state of Internet software development at this time, and because most collection development staff were already using Macintosh computers. Selectors are currently being equipped with Power Macs.

Whatever the platform selected, the selector's workstation should ideally have:

1. A high-speed network connection;
2. Sufficient RAM to run multiple applications simultaneously, such as Mosaic, an online decision file, e-mail, and word processing (minimum 16MB of RAM recommended);

3. Sufficient disk storage space to download and store large files of various types (minimum 200MB);
4. Sound and color capability;
5. Ability to run video clips; and
6. A 16-inch or larger monitor (large enough to have several windows open at the same time and capable of viewing text and images).

In addition, for reasons that have nothing to do with Internet resources, we recommend that a selector's workstation have a built-in CD-ROM reader.

#### SELECTION STRATEGY STATEMENTS: MACRO AND MICRO LEVEL

Mann Library uses written selection strategy statements to describe how collection policy in selected areas is implemented by selectors and genre specialists. In essence, the selection strategy statement is a simple listing of the primary methods used to identify the universe of titles from which selections are made. These include:

1. The key selection tools and sources used;
2. Gathering mechanisms (e.g., approval plans and blanket orders);
3. Important publishers, agencies, institutions; and,
4. Any other methods or contacts used in selection.

Development of a written selection strategy statement is a useful exercise for new selectors and for incorporating selection of new subject areas and formats into the collection development program. When used with a group of selectors with overlapping subject/format responsibilities, selection strategy statements can provide an overview of the total scope of selection sources used by the group. This can be useful in identifying any unnecessary redundancy in selection effort and, conversely, in realizing efficiencies in handling the overall set of sources scanned by selectors in the process of building the collection.

We are developing a two-tiered selection strategy for Internet resources. Selection strategy at the "macro" level involves monitoring a set of sources which

routinely alert us to new titles of potential interest to a number of selectors. Rather than have each selector monitor each of these lists, we have divided the responsibility for these lists among all the selectors. Each selector is then responsible for notifying other selectors of relevant newly announced titles.

The selection sources monitored centrally as part of the macro level selection strategy are:

1. NCSA Mosaic Home Page—What's New feature (<http://www.uiuc.edu/SDG/Software/Mosaic/Docs/whats-new.html>);
2. Net-happenings (news: comp.internet.net-happenings); (listserv: net-happenings@is.internic.net)
3. Scout Report (<http://www.internic.net/scout-report>);
4. Yanoff list (<ftp://ftp.csd.uwm.edu/pub/inet.services.html>); and
5. Gopher Jewels ([gopher://cwis.usc.edu/11/Other\\_Gophers\\_and\\_Information\\_Resources/Gopher-Jewels](gopher://cwis.usc.edu/11/Other_Gophers_and_Information_Resources/Gopher-Jewels))

The set of sources monitored by a library varies over time and is different for particular library collections. Regular monitoring of these general announcement tools serves to keep us up to date on a large share of the new Internet titles, but must be supplemented by "micro" level selection strategies in which each selector/genre specialist monitors a particular set of sources to learn about more specialized resources available on the Internet.

Currently each selector is charged with developing a written selection strategy statement describing in outline form their approach to selecting Internet resources. Once these are completed, they will be compared by the collection development staff and fine tuned as necessary. Individual selection strategy statements structure the process of evolving efficient selection methods in the very dynamic and disorganized arena of Internet resources.

#### FACILITATING COMMUNICATION AMONG SELECTORS

Achieving efficient ongoing selection coverage of the exploding and messy world of Internet resources will require an online

system to facilitate communication about selection of Internet resources. This system will comprise a set of applications, built in to the selector's workstation, which can be easily called up and run in a multitask environment while selectors are logged on to the Internet conducting selection. The elements of this system of communication will include:

1. A central decision file that can be quickly consulted to determine if a particular resource has already been considered and its status (i.e., rejected, under current consideration, or already selected);
2. Online access to macro and micro selection strategy statements;
3. Simple methods for forwarding, via e-mail, notices of new resources (at least transportable descriptions such as Gopher Bookmarks, Mosaic "hotlist" markers, and URLs) to the appropriate selector; and
4. An e-mail mechanism for patrons to use in requesting new resources, print or electronic, just as we have for reference services.

A team of Mann selectors and systems analyst programmers will assess the feasibility of designing and implementing such a system.

#### CONCLUSIONS

As collection development librarians define their role in the world of networked information, advances will be made through an interplay of theory and practice. The focus of the published literature has been primarily on theoretical models of the electronic library and discussion of their implications for the concept of collections. This is important, yet we believe that there should also be an emphasis within collection development on practical research and development work to systematically develop selection methodologies, strategies, criteria, and policies for Internet resources. We believe it is time for collection development librarians to focus intensively on the processes of collection development as applied to networked and other electronic resources.

One kind of systematic investigation needed entails:

1. Testing traditional collection development methods against large bodies of networked resources;
2. Analyzing each resource to discover the extent of its conformance to time-tested selection methods and the anomalies it presents;
3. On the basis of a large body of actual selection decisions, detecting patterns, devising categories, and generalizing new selection criteria and methods as necessary; and,
4. Based on what is learned in this process, articulating collection policies and guidelines for networked resources. This activity will establish a body of experience out of which the profession can fashion a set of updated collection development practices, integrate selection of Internet resources into the daily life of bibliographers, and ultimately inform ongoing development of collection theory.

The work of the Internet Prospectors is presented as an example of this approach. This practical exercise demonstrated methods for integrating selection of Internet resources into the ongoing work of a group of selectors. This included assessing the skills and equipment necessary to be effective selectors of Internet resources, examining how to enhance communication among selectors, devising selection strategies, and examining a large body of titles. Fashioning a taxonomy of the types of resources encountered aided in the organization of our analysis and was useful in making permanent selection assignments. We were able to identify the key collection policy questions posed by the titles examined, and to devise a useful set of preliminary policies and guidelines. While we have certainly not answered all of the questions raised in our examination of Internet resources, we have accumulated a body of experience on which to build.

Our experience in selecting Internet resources has been intellectually challenging, sometimes frustrating, but ultimately exhilarating and reassuring. Libraries are finding ways of incorporating

networked resources into their resources and services, and systematic retooling of the processes of selection has the potential to revitalize and update the practice of systematic collection development.

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**APPENDIX A**

**TIERS OF ACCESS FOR DETERMINING LEVELS OF ACCESSIBILITY AND DELIVERY MECHANISM FOR ELECTRONIC RESOURCES**

**PROCEDURE**

At the time of selection, an access tier is designated by the selector for each electronic resource. The tier is selected depending on the anticipated demand for the resource and the nature of its use. The Electronic Resources Council (ERC) reviews the resource, including its tier designation, in terms of the library's current technical and staff capabilities and current priorities for delivering electronic resources.

**TIER 1**

Delivered over the campus network via the Mann Library Gateway. Anticipated high demand and need for quick response and manipulation time dictate the use of media and software, which will provide very fast response time.

**TIER 2**

Delivered over the campus network via the Mann Library Gateway. Must be in-

teractively available, but a relatively low number of simultaneous uses is expected and slower retrieval time acceptable. Therefore a slower storage medium, such as optical platter, may be acceptable.

**TIER 3**

Resources that can be delivered online via the Gateway on demand, but are not continuously available online. Tier 3 resources may be mounted on request for Gateway access or may be used in the library at any time.

**TIER 4**

Resources that are available in the library only (i.e., not delivered over the campus network), but that are available from many public access workstations within the library over a local area network

**TIER 5**

Resources that are available in the library only, at single user stations.

**APPENDIX B**

**TAXONOMY OF INTERNET RESOURCES**

	<i>Collection Level</i>		<i>Collection Level</i>
1.0	Reference resources	2.0	Non-reference Monographs
1.1	Directories	2.1	Monographs
1.2	Dictionaries	2.2	Conference and symposia proceedings
1.3	Bibliographies		
1.4	OPACs	3.0	Electronic Serials
1.5	Abstracts and indexes	3.1	Newsletters
1.6	Table of Contents Services	3.2	News Services
1.7	Encyclopedias		

		<i>Collection Level</i>		<i>Collection Level</i>
3.3	Referred	3	15.0	Staff use resources
3.4	Non-referred	2	15.	Selection tools
4.0	Discussion Goups		15.1.1	Newsletters
4.1	List-serv lists	S	15.1.2	Gopher and WWW servers, other servers, gateways and networks
4.2	Computer bulletin boards	D	15.1.3	Discussion lists
4.3	Usenet Newsgroups	D	15.1.4	Publishers catalogs
5.0	Numeric Files	3	15.1.5	Online bookstores
6.0	Genetic Information	2	15.	Library science related resources
7.0	Gophers, gateways, and networks		<b>Collection Level Codes</b>	
7.1	Gopher servers	S	0 — Out of scope.	
7.2	Other servers and gateway/ networks	S	1 — Basic level—a few representative titles; highly selective.	
8.0	Museum catalogs (specimen collections)	W	2 — Intermediate level—a good repre- sentation of the best quality resources of this are selectively collected.	
9.0	Software archives	D	3 — Intensive level—a broad and deep representation of relevent resources in intensively collected.	
10.0	Literature and book reviews	W	W — Wait—Monitor and evaluate re- sources in this category; develop col- lection policy when substantive publi- cations begin to appear.	
11.0	Graphic image archives	W	D — Discuss—Not yet clear what our policy should be.	
12.0	Sound	W	S — Selection tool—Used in selection, but not added to the collection.	
13.0	Video conferences	W		
14.0	Publications of U. S. Government Agencies	3		

### APPENDIX C

#### EXCERPT FROM COLLECTION POLICIES AND GUIDELINES

#### 3.1 NEWSLETTERS

##### **Definition / Defining Characteristics**

Defined by the ALA Glossary as: "a serial consisting of one or a few printed sheets containing news or information of interest chiefly to a special group."

Many newsletters are produced by associations of various sorts to provide the membership with current information on topics such as: association news, relevant conference and meeting announcements, new publications, news of grants available

and awarded, job announcements, late-breaking news, calls to action (e.g., legislative lobbying), and brief reports of research and development projects in process or about to begin.

Some listserves call themselves newsletters, but they are really only moderated conversations.

##### **Typical Examples**

Academe ThisWeek, PANUPS (Pesticide Action Network Updates), Drosophila Information Newsletter, Biological Conservation Newsletter.

## **COLLECTION POLICY NOTES /**

### **LEVEL: 2**

The Mann Library policy for collecting print newsletters is:

Newsletters are collected very selectively and only in core subjects. Newsletters of selected major international and national organizations and centers will be collected if they are substantive in nature or, in some cases, if the organization does not publish other series and the newsletter is the primary means of documenting the work of the organization.

Newsletters which provide current information on Cornell University's role in relation to agriculture, biology, and human ecology in NYS and elsewhere will be collected.

Newsletters which do not meet the above criteria, but which are free and might be of short-term interest to our constituents, may be selected for shelving on the newsletter rack. These are uncataloged and retained for 3-6 months only. Examples include the newsletters of many environmental groups, of the CGIAR centers, and of various scientific societies.

Newsletters which are not appropriate for addition to the collection, but which are good sources of information on new publications, are routed for use in selection.

Commercially published newsletters will only be collected if they represent an emerging area of importance for which substantive publications are not yet available.

The Internet offers us the opportunity to become more expansive in the scope of our collecting of newsletters by establishing an "electronic newsletter rack." This idea and related questions are outlined below.

### **SELECTION QUESTIONS AND GUIDELINES**

By taking advantage of the growing number of relevant newsletters appearing on

the Internet, Mann could include in its offerings a greater scope of highly topical, time-sensitive newsletters. This is a genre of serial publications in which we have had to be very selective in the print world. We have used the existing Newsletter Rack as a way to expand the scope of offerings in this area, without incurring the full costs (cataloging, processing, binding, storage) of truly "adding" these titles to our collection. Developing an electronic equivalent of the Newsletter Rack seems to offer a cost-effective way of further expanding the access of our user community to more ephemeral, but useful, resources.

We suggest an Electronic Newsletter Rack be established to provide a lower level of access and maintenance (processing, cataloging, retention, preservation) than for other more substantive serials.

There are a number of questions related to the implementation of this idea. How would this be set up, organized, and accessed? As a Gopher server on the gateway? How would people know where to look for such material? Would titles be cataloged? Would issues be "claimed"? How much of a backfile would we retain access to; how would weeding be accomplished? Would we rely on maintenance performed on the servers of other institutions? Would we be able to provide access to newsletters from all types of servers? Would we run into problems with patrons unable to print from certain formats (e.g., Postscript)?

### **SELECTION TOOLS**

The primary selection tools are CIGNet's journal archive, InfoSlug, NEWJOUR-L, The Strangelove/Kovacs Directory, Scout Report, and What's New with NCSA Mosaic.

### **SELECTOR**

Sam Demas

# Lost Articles: Filing Problems with Initial Articles in Databases

Ralph Nielsen and Jan M. Pyle

*Results of a study of misfiled titles beginning with articles in the nominative case in European languages are listed and discussed. The quantity of such errors was found to be high, even in a well-maintained database. The authors list the articles involved and their ranking as a percentage of the total. The problem is discussed and possible solutions are presented.*

**I**nitial articles have caused problems for librarians and library patrons for many years. They were a problem in card catalogs, and they remain so—in even greater numbers than before—in electronic databases. Yet the library literature offers next to nothing about this perennial problem. There may be several reasons for this situation. First, the situation is perceived as a “cataloger’s problem.” Second, and related to the first, is the fact that very few database users are aware of what is involved in providing full access to bibliographic records. Third, despite the fact that the world of bibliographers is shrinking thanks to electronic means, fewer librarians than ever before—at least in English-speaking North America—learn and use foreign languages. For these reasons, misfiled articles are not perceived as the problem that they, in fact, are.

The authors have worked with both card and automated catalogs. In their work at the University of Idaho Library, where they have both worked for many years, they have observed that there is a higher proportion of misfiled articles in the newer databases than there was in the old card catalogs. Based on this observation, it would appear that revision of filing is not

done as carefully in databases today as it was in the card catalogs of the days of yore. When filing into a card catalog, one had to look at both the card preceding and the card following the one being filed. Errors were thus easy to spot. A catalog record for a database, on the other hand, is seen only by itself—out of the context of what precedes and follows it—before being “filed” or merged into the database, usually never to be seen by that person again.

Data for this article comes from the authors’ observations of the database of the Western Library Network (WLN; formerly the Washington Library Network). The authors looked for initial articles in European languages using the Latin alphabet; minor languages, which were represented by only a few titles, were ignored. The authority used was the list of initial articles in the Library of Congress’ *Cataloging Service Bulletin*. They also relied on their personal knowledge of foreign languages, acquired during years of cataloging and travel in foreign countries.

Two lists of misfiled initial articles were made. The first list was compiled by visual examination of the title fiches of the WLN’s complete holdings in January 1982. Based on the average number of

titles per fiche, the number of titles listed at that time was approximately 920,000. The number of errors found was 216. A second survey was made in June 1992 from the title listing in the WLN's Laser-cat, a CD-ROM of the network's complete holdings. This time, there were 3.8 million records in its database, and 5,616 errors were found.

Although the actual number of errors may in some senses not appear to be great, every single error represents a title that will not be found by someone looking for it. This loss is also compounded when bibliographies are compiled based on these records. Remember the old saying: "If you can't find a book in the catalog, you might as well not have it on the shelf."

Even in well-maintained databases, such as that of the WLN, revisers probably do not very often look for mistagged initial articles in the title entries—especially not in the English language. And, articles in foreign languages are frequently much more troublesome than those in English. Many times they are the same as numbers—as with the French *un* and *une*, which can mean either the article *a*, or the number *one*. *Ein* and *eine* in German present the same problem, as do their equivalents in several other languages. Most of us are familiar with the Serenade, K. 525, of Mozart, which so often is introduced as *Eine kleine Nachtmusik* (*One little serenade*), rather than simply *Eine kleine Nachtmusik* (*A little serenade*), which is most likely what Mozart meant. In such a situation, in order to enter the title correctly, the tagger must know the language well enough to be able to distinguish the difference.

Sometimes even knowing the language does not solve the problem. For example, does *Una noche in Madrid* mean *A night in Madrid* or *One night in Madrid*? The authors recommend that in such cases of ambiguity the title be traced both with and without the article.

But difficulties with initial articles do not stop there. In some languages, what looks like an article is sometimes a pronoun. In Danish, for instance, *De som kommer* (*They who come*) must be distinguished from *De kommende dage* (*The*

*coming days*). The title of the Mexican novel *Los de abajo* is another example.

But there are still problems. Place names beginning with an article are filed on the article, not on the succeeding word. Such situations seem to be most common in Spanish, like *Las Vegas* and *Los Angeles*, although in the Columbia Gorge in Oregon there is a town called *The Dalles*, a name half English and half French. The Library of Congress insists that it be filed as *Dalles*, but the American Automobile Association (AAA) thinks otherwise.

In order to deal with the problems presented by initial articles in databases, the authors have a few suggestions for the powers that be in the world of cataloging and indexing. First, divide the languages with initial articles into two categories: major and minor. Let the major ones be English, French, German, and Spanish; then insist that tagging of titles in these languages be done accurately, and revise the files regularly.

All other languages can then be considered minor, at least for this purpose. Enter titles in these languages both with and without the initial article. While this suggestion may sound a little heretical to language purists, our job is not to teach little-known tongues to the unwilling, but to help patrons find what we have in our databases and on our bookshelves.

Cases of words that look like but are not articles will be dealt with automatically in our minor languages. In the major languages we must trust the catalogers and the taggers to do their work correctly.

Perhaps software programs can be written to deal with some of these problems but, as with spell-checkers, we should not hope for machines to catch our errors all of the time, for there is no substitute for good human catalogers who know what they are doing.

The authors hope that this article will stimulate further research into the problem of lost articles.

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# North American Title Count:

*Titles Classified by Library of Congress and  
National Library of Medicine Classifications*

1993



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# Classification and Shelflisting as Value Added: Some Remarks on the Relative Worth and Price of Predictability, Serendipity, and Depth of Access

Jim LeBlanc

*There seems to be general agreement in the library community that a predictably ordered system of classification, leading to easy browsability of a library collection either in the stacks or in an OPAC, is an indispensable requirement for the kind of access patrons have come to expect and for the reasonable success of the searching strategies they normally use. In this vein, the author examines the intrinsic value of browsing. In addition, with the help of some rough data compiled during a test conducted at Cornell University in the spring of 1994, he estimates the cost of maintaining the collocative and alphabetical integrity of shelflist files for works by or about individual literary authors.*

**B**rowsing" is etymologically related to the French verb *brouter*: to graze. In fact, the English term itself is sometimes used to denote the errant feeding behavior of cattle or wildlife. Browsing the shelves of a library (or, to some extent, the indexes of an online catalog) is an activity that is not too far removed from the term's etymological origins. In the sense that one draws nourishment from knowledge ("craves" it, "has a thirst" for it, etc.), feeds on information, or is a consumer in a library's quality management model, one grazes the stacks or the database, sometimes seeking a particular morsel or nutri-

ent, sometimes snacking (healthily or unhealthily), and sometimes discovering a virtual banquet of facts, ideas, or inspiration. While it is true that we can survive on a programmed, nutritionally sound, but optionless diet, it is through a kind of grazing and hit-or-miss sampling that we supplement minimal satisfaction with variety, spice, and breadth of appetite. To follow blindly a narrow regimen without casting a glance down other nutritional or educational avenues is to limit severely the universe of our drive for satisfaction, or at least our perspective on that universe.

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Thus, the value of browsing in a library context can be seen as a supplementary, but also vital, one. Users sometimes come in search of known items, but they also often seek something more, some vague and unforeseen discovery to supplement their expectations (or indeed, to replace their initial expectations should those desires go unfulfilled). The maximum value of browsing cannot be ensured, however, without some mediation on the part of the library staff. Patrons would still find something extra perhaps, even in a stack or catalog environment that was arranged—or rather disarranged—willy-nilly, but these discoveries would be less likely to supplement (in the sense of “to complete” or “to put a finishing touch on”) the users’ informational regimen than to merely accompany it. Paradoxically, the value of these serendipitous discoveries can only be maximized by the introduction of a predictable, systematic arrangement of materials on the shelf or in the catalog. This arrangement is provided, of course, through cataloging and classification.

Cataloging and classification—including shelflisting, a subcomponent of the latter, by means of which classification numbers are further subarranged by “book” or “cutter” numbers which allow for collocation and alphabetization of works by author, title, etc., within a range of classification—permit both direct access to known items and various kinds of browsing. Perusing systematically controlled headings in a catalog, scanning classified call numbers in an online catalog, or browsing classified texts on a shelf all constitute a kind of bibliographic grazing. While some searching strategies are more effective and more rewarding than others, the combination of collocative and indexing possibilities currently provided in most state-of-the-art libraries ensures a proper but varied diet of information for all who seek it. For the purposes of this article, however, I would like to focus on classification and shelflisting—the means by which libraries add value to their collections by making possible that most traditional form of browsing: the wandering, lingering, sampling practice of grazing the library’s shelves (and to a lesser extent, as

we shall see, their cyber-surrogates in the local online catalog). How much is this service worth? How much does it cost to provide?

#### THE VALUE OF CLASSIFICATION AND SHEFLISTING

It is clear from both anecdotal and statistical evidence that when library materials are classified, patrons tend to browse them in a productive manner. As Hugh Atkinson has remarked:

The browsing function is an essential part of the strategy for retrieval of material. This is true whether the patron is seeking known items or is seeking library materials by subject. Browsing is the primary retrieval system for a very large portion of our patrons’ library searches. Therefore, the work of classification is as fundamentally important as any task in librarianship. (Atkinson 1990, 3)

Atkinson’s view is hardly a new one, and it is not without statistical support. Robert Losee, in a 1993 article, describes a test he conducted to measure individual patron circulation patterns against degrees of clustering by subject heading and, consequently, by classification (Losee 1993). He concluded that classification is definitely worthwhile and contributes to patrons’ ability to find what they need or desire. Furthermore, Losee observes, “anecdotal evidence suggests that skilled patrons often perform subject searches by looking for significantly different call numbers in a catalog and then browsing in the stacks near these call numbers” (Losee 1993, 208). This latter statement echoes a similar contention made some years ago by Gunnar Knutson that patrons often use the catalog as a mere springboard to a shelf area where they can then go to browse for the books or information they need (Knutson 1986, 462). Knutson even goes so far as to suggest that the “catalog record of today may be a secondary factor in book selection for most users, compared to such other influences as *browsing* and *booklists*” (Knutson 1986, 468; my emphasis).

Most recently, Thomas Mann has pushed the inquiry into the importance of

browsing a step further by isolating those aspects of the searching paradigm that can best, or perhaps only, be realized through an examination of materials on a classified shelf. Mann (1994, 12) argues that:

maintaining subject-classified bookshelves continues to be of major importance because the third element that is lost without good cataloging and classifying (in addition to predictability and serendipity) is depth of access to full texts—that is, to actual books and their entire contents rather than just to superficial surrogate catalog records. Depth of access is a function of the classification scheme's arrangement of subject-related full texts next to each other on the bookshelves.

Mann goes on to explain that the need for browsability is actually two-fold. He argues that there are two kinds of browsing: browsing proper—which allows users to get an overview of materials on a given subject, a rundown of “what’s available”; and a second type of browsing that is satisfied only by the deep access, full-text searching option described above, a variety of browsing that he calls “scanning.” Mann (1994, 14) defines scanning as:

highly focused searching for a very deep level of access to particular, very specific bits of information that are too small to be noted on catalog surrogates—even by enhanced surrogate records with abstracts or tables of contents. Scanning is not an open-ended searching, with no definite question in mind, in mere curiosity to see “what’s available”; rather, it has a very definite goal in mind (the pursuit of a particular fact that can indeed be clearly specified in advance)—but the fact being sought is such that a precise source for it cannot be specified in advance, even after exhaustive computer searches.

This search for a fact, a tidbit of information that may require the examination of several or more works, constitutes a depth of access that, as Mann points out, catalog records alone cannot furnish. Materials must be classified in a manner conducive to productive browsing in order for it to be possible for users to conveniently “scan” them.

One could argue, of course, that with

the expected proliferation of full-text databases that can be integrated into libraries’ local online catalogs (or at least gatewayed through them), the need for access to the shelves and to the physical sources themselves will be greatly diminished in the age of the electronic library. However, as Mann observes, most full texts cannot currently be digitized because of “insurmountable copyright, economic, and preservation problems” (Mann 1994, 12).

Even if we accept the hypothesis that publishing will undergo a complete transition from paper to online information sometime in the future, that does not diminish the very real, extensively paper characteristics of today’s libraries. Says Mann: “the flood of printed books requiring cataloging and classification has not abated one bit while LC’s attention has been focused on the ‘electronic library of the future’ ” (Mann 1994, 31). While the Library of Congress’s recently announced commitment to the development of a National Digital Library may allow LC to make great strides towards a seamless electronic library and catalog, even such an acknowledged research library visionary as Carol Mandel admits that: “the monographic literature will not lend itself quickly to this form of library, and the existing vast store of paper-based collections will not soon be converted. The library as ‘place’ and the ‘virtual library’ will co-exist for some time to come” (Mandel 1992, 2). Moreover, different libraries are bound to virtualize at different paces (and some, obviously, will remain paper-based for decades to come), meaning that shelf collocation of books is sure to remain a major concern for at least some institutions for the foreseeable future.

It is clear, then, that the browsability of library materials—an aspect of access that is provided through the application of a consistent and predictable system of classification—has value, perhaps even substantial value. But at what price? What does it cost to provide this tactile, first-hand grazing access to the information, inspiration, and even entertainment stored in the books on a library’s shelves?

### THE COST OF CLASSIFICATION AND SHEFLISTING

To my knowledge, very little research has been done recently that aims to answer this question. Back in the mid-1960s, however, Daniel Gore and Mathilda Brugh O'Bryant engaged in an interesting polemic in both *Library Journal* and *Library Resources & Technical Services* concerning the relative advantages and disadvantages of accepting LC's call numbers, without modification, for local use (Gore 1964; O'Bryant 1965; Gore 1966). Gore argued that using the LC call numbers verbatim would save other libraries a bundle and would allow the classification process to be accomplished "at a cost of something less than a penny[!]" (Gore 1966, 524). Although O'Bryant steadfastly maintained that not all LC call numbers were right for every library and that local classifiers should routinely question the wisdom of blindly following the Library of Congress, she did concede that: "It is most desirable to reduce the cost of classification to a minimum. The ideal of this world this day for that future is for a library to maximize service and minimize cost" (O'Bryant 1965, 370). More recently, Liz Bishoff has observed: "There are many good reasons for creating a special [classification] scheme, but it is getting more and more expensive to keep on using one" (Bishoff 1990, 139).

Indeed, O'Bryant's hedging of the local classification wager through the seemingly timeless platitude of maximizing service while minimizing cost may no longer be enough to hold back the tide of unconditional acceptance of someone else's call number—be it LC's or another library's. In fact, Gore's contention that the abandonment of local modification practice may allow libraries to assign call numbers for "less than a penny" could be, for many, a very real goal these days, in spite of the effects that inflation has had on that penny in the last twenty-nine years. Teeming arrearages and the perceived need to trade off one form of access for another are driving many institutions to question the value of special classifica-

tion systems and even the mere adaptation of LC's or other libraries' call numbers for local use. Such changes in classification or shelflisting practice do not necessarily destroy collocation of like materials in the stacks and, thus, do not always completely jeopardize the depth of access to information that users have come to expect. They do, however, at best make browsing a little less predictable and serendipitous discovery a bit less fruitful.

How much does shelflisting actually cost? This is a question we set out to answer in the spring of 1994 in Central Technical Services (CTS) at the Cornell University Library. Because of the nature and time-frame of the planning initiative for which this information was needed, both the data and the study that was designed to gather it were necessarily quick and dirty. Nonetheless, the results of the test do, I think, give us a peek at the kind of investment some research libraries are making in order to preserve a predictable classification scheme, shelflist integrity, and, by extension, optimal browsing access for users.

First, some background. For the past few years, the central processing unit at Cornell has included a "fastcat" operation—a kind of high-speed, low intervention type of copy cataloging that is similar (though less extensively utilized, I believe) to "fast" procedures in use at other large institutions. As part of the fastcat method, LC and NCCP (National Coordinated Cataloging Program) call numbers are assigned without modification to several categories of newly processed materials. An "x" (or "w" in the case of NCCP call numbers) is appended to the final cutter in the call number to help reduce the risk of duplication (a tactic, some readers will note, which is exactly the reverse of that employed at many libraries—i.e., adding an "x" to a locally created call number). Although this method costs a bit more than the fraction of a penny estimate of Gore's era, by using computer tools such as copy-and-paste, the task can be accomplished quickly and accurately. Furthermore, since Cornell has traditionally followed the spirit of LC's classification

practice, the stack arrangement of these materials is roughly preserved in terms of general subject classification. It is merely the shelflist logic of the subarrangement within these general classifications, and that of the individual book numbers, that becomes somewhat perverse.

Thus, although the optimal browsability of these areas of the library shelves (and the online catalog, for that matter) is potentially compromised at the level of what Losee has defined as the "stop," healthy bibliographic grazing is still quite feasible. Note that, according to Losee, a "stop" is a group of related materials that constitutes a cluster from which users might pull multiple items for circulation. He writes that "a stop exists when, in a linear ordering of documents provided by the classification system, between one document circulated by an individual and the nearest other document (in a given direction) circulated by that same patron, there are fewer than two documents that were not circulated by the patron" (Losee 1993, 199).

Still, not all items with LC or NCCP catalog copy are processed using the fastcat method. Formats other than books are excluded and exceptions are also made based on particular call number ranges, individual library locations within the Cornell library system, type of material, and descriptive cataloging form (i.e., items lacking full AACR2 copy are excluded). Among these exceptions are works by or about individual literary authors. Although these materials are not classified by subject, there has been a great reluctance on the part of the local library community to give up shelf collocation of individual literary authors and, in order to preserve the integrity of the author files, we have continued to shelflist these works without regard to the availability of LC or NCCP call numbers for them.

It should be noted that this is not really a question of consistency in classification *per se*, since Cornell has very seldom chosen a different class number from LC's or the NCCP library's. Rather, it is a question of using the author numbers consistently. We are talking, then, not about the level

of "subject" access, but about guaranteeing predictability and depth of access on a literary, artistic, or aesthetic level, if you will.

In an effort to open the possibility of giving fastcat treatment to these items, while continuing to adhere to the principle of keeping works by or about individual literary authors together, we began several months ago to add 093 (i.e., local call number) fields to the name authority records for these authors. It is our hope that someday, once the universe of 093 fields is sufficiently large, we can begin to fastcat these belletristic materials. In addition to the author's classification (or range of classification) and cutter number, the pertinent LC literature table is also recorded in the 093 field when a table other than XXXIX or XL is to be used. Theoretically, then, we could one day simply substitute the local author cutter found in the authority record for the LC or NCCP author cutter and accept the book number furnished by LC or the NCCP library for the specific work in hand. This is provided, of course, that the specific literature table required for further subdivision of the author's works did not, for any reason, lead us to exclude that author from the fastcat workflow. In this way, all books by or about individual literary authors would continue to be contiguously shelved, although alphabetization and some collocation within these areas might inevitably be lost.

The shelflisting cost study that we performed was designed to reveal how much the local adaptation of LC and NCCP call numbers, including the establishment and inputting of the 093 fields, was costing us. Put another way, we wanted to know how much would we save if we began immediately processing this kind of material using the current fastcat method—with the understanding, of course, that to do so would often result in significant losses of author collocation and alphabetization in the stacks and in the online call number index.

We drew a sample of 100 books from the CTS Copy Cataloging Unit's in-process working backlog, choosing roughly every other item that fell into the target category. At the time, we were toying with

the idea of also adding 093 fields to the name authority records for artists (another category of material that was excluded from the fastcat workflow), so a representative percentage of the sample (10%) consisted of books by or about individual artists. Later, we pulled 10 more books at random from this same working backlog, after deciding that the data gathered from one of the catalogers participating in the test (who had never been trained to catalog works of this type) were suspect. In the end, one book from the sample was discovered to be inappropriate, given the target universe for the study, and was rejected but not replaced. Thus, for the purposes of this paper, the data presented below have been derived from a sample of 89 works, selected more or less by convenience, by or about individual literary authors. However, due to the fact that the sample was drawn from a working backlog and was thus subject to idiosyncrasies peculiar to that universe at a particular point in time, the breakdown of literature by language and national origin is not exactly typical. For instance, a full 50% of the total sample consisted of works by or about South Asian authors, with the rest divided among English, French, Spanish, and German language texts. The sample is not a probability sample, and extrapolation to any population is therefore inappropriate.

Several copy catalogers having various levels of experience were recruited for the experiment and were assigned stacks of 10 books each (after a practice round of 5 books each). They were asked to time themselves to the nearest minute as they performed, in isolation, the shelflisting component of the cataloging process for all 10 test items, batching this work as they normally would if they were cataloging the material fully. They were also asked to include as shelflisting time any incidental work that arose as a result of the "routine" shelflisting process: establishment and inputting of an 093 field into a name authority record, searching of one kind or another, dealing with split author files, and so forth. It was important to include the time spent on these ancillary aspects of shelflisting, since they represent tasks that

undoubtedly would not be performed if these items were processed using the current fastcat method. Finally, the catalogers were asked to record nothing on the printouts, on the books, or in the online records that would indicate anything about the call numbers they assigned. These steps constituted the first part of the test.

In order to get some idea of how much time could be saved if the test items were cataloged after the 093 work had been performed (as well as the searching and problem solving inherent in the establishment of these local call number fields), each cataloger—after completing the first part of the test—was asked to exchange her group of books with a partner and then once again time the shelflisting process. It should be noted that in this second stage of the test, all the cataloger had to do was take the author classification and cutter from the 093 field in the author's name authority record (which was sure to be available, since it had been input as part of the first stage of the test) and then determine the appropriate book number for the title in hand in order to complete the process of assigning a local call number. While this is not the exact procedure we would normally use to fastcat this kind of material using 093 information, the results give us a fair estimate of how much time is currently devoted to trying to maintain the collocative integrity of these author files. The results of the test are illustrated in table 1.

It is not surprising that the average time required to shelflist a title in the second part of the experiment was over 50% less than the corresponding figure in the first part (3.09 minutes per title vs. 6.45 minutes per title), since virtually all of the problem solving associated with assigning a local call number for these titles was carried out in the first part (see table 1). One aspect of the results that does catch the eye, however, is the extreme variation in the timed segments from cataloger to cataloger. In the first part of the experiment, this differential can be attributed, to a great extent, to varying degrees of difficulty from bookstack to bookstack in regard to the amount

TABLE 1  
TEST RESULTS

Cataloger	Part 1 (min.)	Part 2 (min.)
1	26	14
2	92	45
3	72	28
4	111	65
5	35	21
6	43	19
7	102	48
8	46	21
9	47	14
Total time (89 titles)	574	275
Total time per title	6.45	3.09

of searching, scanning of classification schedules, and problem solving necessary to determine the classification, cutters, and appropriate literature tables involved in shelving the various authors in the sample. This factor does not, however, explain the variation in timed segments in the second part of the experiment, in which most of this troubleshooting had already been taken care of. We can only conclude, I think, that the significant disparities between the total time necessary for, say, catalogers number 1 and number 4 (or number 9 and 7, or 6 and 4, etc.) to complete the second part of the study were due to: (1) variations in the sample groups regarding the prescribed use of literature tables other than XXXIX and XL to further subdivide authors' works—tables which are less familiar to catalogers by virtue of the relative rarity of their application; and (2) variations in the experience and speed of the catalogers involved in the test. Both of these factors would necessarily have had some effect on the results of the first part of the experiment as well.

Before drawing any general conclusions from these data, we must also bear in mind that these figures may be somewhat higher than the actual, everyday time

required to shelflist a work by or about a literary author. Since the test needed to be designed and run within a very narrow time frame, we were forced to cobble together a sample that might not have been truly representative of an average group of target titles over a prolonged period of time. Works by or about South Asian authors—a category that made up roughly 50% of the sample—seem to present greater difficulties for the CTS shelflisters than do literary items in other areas. This is due, I think, to a certain quirkiness in Cornell's past and present shelving practice for these materials. Furthermore, the extent of the trial run that was not tabulated in the final data (5 items) may not have been sufficient to permit catalogers to become completely comfortable with the mechanics of the experiment.

Despite these factors, we can draw one general conclusion from the data and the foregoing discussion: shelving of these materials, as it is currently practiced in Cornell's Central Technical Services, is quite expensive. At the time of the test, the average cost of a copy cataloger's time in CTS was \$.3855 per minute (a constant derived from the addition of salary, benefits, overhead, and a standard compensating factor to account for coffee breaks, sick time, etc.). Thus, if the catalogers involved in the study took an average of 6.45 minutes to shelflist a title by or about an individual literary author, then it may be costing the Cornell University Library as much as \$2.49 per title for this facet alone of the cataloging process. If 093 fields in authority records could be guaranteed for every individual literary author whose works and their criticism CTS catalogs, the cost could be reduced to something in the neighborhood of \$1.19 per title, assuming that current workflow procedures remained in place.

These figures do not, however, take into account the fact that items of this ilk must be channeled to copy catalogers in the first place. If Cornell decided that it no longer needed to ensure call number collocation of these works, or if we were to initiate a program that would mass produce 093 fields for literary authors in the

hope that this category of materials could then be processed through a variation of the current fastcat method, the cost of cataloging these items would drop even more than the \$2.49 per title figure cited above, since they would be processed by fastcat staff instead of copy cataloging staff. At the time of the test, it was costing CTS an average of \$6.97 to have an item processed by fastcat staff. If the same item were processed by copy cataloging staff (but still according to current fastcat method guidelines—i.e., no shelflisting), the per item cost would increase to \$8.85, due to the difference in pay scale between the two levels of staff. In other words, the very fact that books by or about individual literary authors have to be sent to the Copy Cataloging Unit in the first place results in an increase of \$1.88 in cataloging cost, not including the additional work (shelflisting) that needs to be carried out by the cataloger. Thus, the average cost of cataloging these otherwise fastcat-able items may run as high as \$11.34 per title (\$8.85 + \$2.49), or \$4.37 more than the average unit price for these same items, if we merely accepted LC's or the NCCP library's call numbers. These figures, then, give us a rough estimate of how much shelflisting can cost.

### CONCLUSION

Oddly enough, there was no vociferous outcry from the Cornell Library community that the price of shelflisting, at least in this case, was too high and that collocation of these items in the stacks should be abandoned. None at all. In fact, it has been my personal experience over the past several years that any suggestion, however hypothetical, that we begin to accept LC and NCCP call numbers in their entirety for works by or about individual literary authors has been met with a kind of blind resistance—an almost emotional reaction, unsubstantiated by any specific user-study data. Clearly, there is at least a perceived value in maintaining an optimal browsability in these areas of the collection that is not inherent in some other classified ranges. These other ranges—all of which are undergoing ex-

tensive collocative disarray as a result of Cornell's utilization of the fastcat method—include those encompassing religious, historical, geographical, social scientific, educational, pure scientific, and technological subjects, as well as those where one finds works by or about individual philosophers and other "biographical" ranges in the local shelflist.

Thomas Mann has remarked that "to spend enormous amounts of money assembling book collections and then to make *access* to them only superficial, partial, incomplete, and haphazard is to throw money away rather than to use it prudently" (Mann 1994, 24). Indeed, it behooves all libraries to think twice about deciding to play fast and loose with their classification and shelflisting schemes if such a decision threatens to jeopardize the extent to which their collections are browsable. As Mann, Hugh Atkinson, Robert Losee, and others have maintained, the browsing function is an essential, if not primary aspect of users' overall searching strategy.

Obviously, there are limitations as to what can and cannot be provided in an online catalog as opposed to what can and cannot be provided in a paper library that must coexist with the increasingly prevalent notion of a virtual library. In an era of burgeoning backlogs, shrinking budgets, and overstressed staffs, surely some trade-offs must be made, but we should remember to weigh these sacrifices carefully and thoughtfully. Browsing access is important and desirable, and should not be perfunctorily compromised. Although some call number ranges may suffer little from the introduction of labor-saving practices, such as Cornell's CTS fastcat initiative, subjection of other areas of classification to such "fast" processing tactics could prove crippling to those areas' browsability.

Clearly, machines can help. Computer-programmed shelflisting—through which classification and collocation (as well as alphabetical subdivision of related works) can be performed by linking classification and shelflisting parameters to data elements in the bibliographic record—may reveal a bright light at the end

of an ever-darkening tunnel, a viable substitute for some of the high-cost, labor-intensive shelisting methods currently in use. Computerized shelisting might, in fact, prove to be an innovation that will allow libraries to perform this task "at a cost of something less than a penny." This is, indeed, an avenue that must be aggressively explored.

Can we dispense with browsability? How much of the predictability, serendipity, and depth of access traditionally associated with the well-cataloged and well-classified collection can we give up, while still satisfying those patrons who hunger for something more than a known item? Will the traditional intellectual grazing areas of the library stacks (where one can engage in full-text "scanning" of books) or even online call number indexes be paved over by the trend towards remote site storage and unevaluated call numbers, thus relegating the book collections of research libraries (the growth of which seems to be increasing unabatedly) to the accessible equivalent of well-guarded, badly cataloged museums? Will the access potential of the virtual library prove healthily cornucopian, or will the browsability of this new informational format permit the retrieval of only so much fodder from the cybernetic trough—enough to sustain users, but not enough to satisfy them?

We would do well to ask ourselves these questions from time to time during the next few years, in order to be sure that we do not lose sight of the fundamental goal of our mission: to help patrons gain

access to the information they seek, not merely to what they cannot do without.

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# Electronic Discussion Lists and Journals: A Guide for Technical Services Staff

Vicky Reich, Connie Brooks,  
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*The Internet is a source of many powerful tools (e.g., telnet, FTP, Archie, Gopher, Veronica, WWW, Netscape, Mosaic) and resources. Many of these tools and resources are relevant and important to technical services staff. Electronic discussion groups are reviewed. Electronic discussion groups and journals are a cheap and easy source of continuing education and a convenient means of linking to colleagues. Recommendations of leaders in the field are given. Technical services librarians should explore the power of the network, which allows us to make professional contacts, deepen technical knowledge, and take the opportunity to learn easily about new areas. Internet resources for technical services librarians are enumerated.*

**T**his introduction to electronic discussion groups and journals is for technical services librarians. In this article, we seek to outline the basics of this realm, including: how to use these tools and a look at the various resources that are available in each of the technical services areas.

The Internet is a source of many powerful tools that allow users to access remote computers (telnet), move files from one computer to another (FTP), locate and explore resources (Archie, Gopher, Veronica), and retrieve information as a set of hypertext documents (via the World Wide Web—WWW). Public-domain browsers (via Netscape, Mosaic) allow us-

ers to “surf” the Net and locate, view, download, and print multimedia documents.

Many of these tools and resources are relevant and important to technical services staff. For an excellent introduction to the Internet, the authors highly recommend Krol (1994).

## ELECTRONIC DISCUSSION GROUPS

We use the Internet to access electronic journals (commonly called e-journals) and electronic discussion groups (commonly called “lists”). Electronic journals have a variety of distribution patterns; many are distributed using “list” software, while

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others come through e-mail, FTP, or other means. Electronic discussion lists are a very popular method of group communication among Internet users. List management software allows discussion group subscribers to easily send messages to all list subscribers. Users can be "lurkers," someone who generally only reads messages rather than posting them, or they can actively participate in the conversations.

Lists can be moderated or unmoderated. Moderated lists are generally of higher quality. Moderators review each message to ensure that it is appropriate for list distribution. Generally, commercial advertisements, misdirected notes, out-of-scope postings, or those the moderator thinks are too controversial for the list are not distributed.

Some lists require that new subscribers introduce themselves upon joining (often by means of questions such as "why are you interested in this list?"), while others have closed membership (such as the American Library Association's Directors of Technical Services list).

Technical services lists and journals are commonly supported by either Listserv software or the newly configured Listproc software. It is important to notice which program supports which title because the commands for these two programs differ slightly.

The most important advice we have for network newcomers is: save the welcome message you will receive just after subscribing to a list or e-journal. Download this message to your hard disk or print it out. The welcome message describes the purpose of the resource and tells you how to manage your subscription. It will tell you which software runs the discussion list and how to get further help. Having this information easily available for each resource you subscribe to may save you hours of time later.

Discussion lists have two addresses: the "listname address" (the "mailserver") and the "administrative address" (the "mailserver@host"). The listname address allows you to send messages to everyone subscribed to a list, while the administrative address allows you to manage your subscription. A common mistake made by

new users is to confuse these two addresses. This is how John Doe sends his "unsubscribe John Doe" message to hundreds of people and causes his colleagues wry amusement, at best.

When sending a command to the administrative address, include the name of the list in the message. Because most mailserver sites maintain a number of discussion lists, this tells the mailserver which list you wish to influence. For instance, let's say that a list—LIB-TS—is serviced from a listproc at "computer.edu". If Marian wanted to join this list, she would send the command "subscribe LIB-TS Marian Librarian" to "listproc@computer.edu".

Do not include any text in your messages to the administrative address other than the commands you want the computer to implement.

## DISCUSSION

Ten years ago, only the most technically sophisticated librarians had access to the Internet. Five years ago, enough librarians had access to the net for PACS-L to become established. Today, access to the Internet is commonplace.

The technology of the Internet is transforming communications. It erases the boundaries of time and space and allows new communities and relationships to flourish. There are, however, tradeoffs. As the power of computers and networking erases some boundaries, others are being introduced. While people are now communicating faster, they are doing so through narrower tools. Thus, the richness and subtleties of in-person, non-verbal communication (facial and hand gestures, for example) are greatly diminished. Even telephone conversations, for instance, allow more subtle communications—via the words that are spoken in addition to voice tone and expression.

The speed and narrowness of electronic communications argue for care when posting messages to lists or to e-journals. It is easy to be fooled by the informality of the medium and to embarrass yourself by writing quickly-worded messages. The community will at times react with anger

("flaming"), and often an apology or intervention from the moderator is needed to get the discussions back on track. With care though, the network gives us the opportunity to establish positive professional reputations, without travel funds.

Electronic discussion groups and journals are a cheap and easy source of continuing education. The vast number of lists and journals illustrate the value of linking to colleagues and of participating in daily discussions. These tools allow us to hear news, keep up with issues, and make contacts. Electronic journals and discussion groups disseminate important news quickly; yet they can also spread falsehoods just as quickly. Common sense, waiting to act, and resisting the urge to spread unfounded rumors are mandatory counterbalances to the speed and power of these tools.

While it may be tempting to subscribe only to those resources where the discussions are comfortable and familiar, we urge technical services librarians to take advantage of current Internet pricing policies to explore beyond their areas of expertise—to learn about the challenges and visions of other professional groups. The anonymity of the computer provides the opportunity to quietly listen to discussions. Some librarians manage the huge volume of information by arranging to share with colleagues the responsibility for monitoring titles and for forwarding interesting entries.

One way to find interesting titles is by asking someone you respect what titles they think are valuable. In that spirit, we asked the technical services directors of twenty-five large research libraries what resources they read. We heard from six of the directors we contacted. The two most popular lists named were Newsletter on Serials Pricing Issues and ALCTS Network News. Next in popularity were ACQNET and CONSERLINE. Our respondents told us that they subscribe to integrated library system lists (NOTIS-L or INNOPAC) and to utility lists (RLGs RLIN-L and OCLC-NEWS). Responses also reflected the diversity of interests and responsibilities within technical services, including: PACS-L, IMAGELIB, cni-

copyright, VPIEJ-L (electronic publishing issues related to scholarly journals), and TQM-L (all aspects of total quality management concepts).

What are the drawbacks of these tools? Some discussions, particularly on unmoderated lists, are simply not interesting. People often respond even when they do not have new thoughts or information to impart. In addition, redundant messages from "cross-postings" are boring. For instance, notes (often announcements of events) are sometimes sent to as many as a dozen lists. While users posting such notes often apologize ("Apologies in advance for any redundant postings that may result"), this practice still annoys many readers.

Among the things that we can predict for the future is the prospect that we will have services that search and retrieve messages based on a user's interest. Such automated services will address the volume and diversity of information by allowing the user to use fine-grained subject profiles to search electronic resources. Approximately ten thousand people are currently using a research tool called SIFT (Stanford Information Filtering Tool) to manage NetNews (or Usenet News), a bulletin board system on the Internet. Discussion groups (called newsgroups) cover a wide variety of topics, and millions of users read tens of megabytes of messages per day. SIFT allows the user to detail her interests via profiles, and then matches those interests against the larger set of newsgroups. SIFT (see the URL <http://woodstock.stanford.edu:2000/>) retrieves a brief citation plus the first twenty lines of a posting or article. If interested in it, the user can then easily request the whole article.

We encourage technical services librarians to explore the power of the network. The network allows us to make professional contacts and friends, to deepen technical knowledge, and to take the opportunity to easily learn about new areas. It is important for us to become users of these tools so that we can apply our traditional skills to the medium. For us to serve our communities, we need to select, acquire, organize, and preserve both print and electronic materials. To do

this well, we need firsthand knowledge of the medium.

#### WORKS CITED

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- Directory of electronic journals, newsletters, and academic discussion lists. 1993. Washington, D.C.: Assn. of Research Libraries.
- Krol, Ed. 1994. *The whole Internet user's guide and catalog*. 2d ed. Sebastopol, Calif.: O'Reilly & Associates.

#### DISCUSSION LISTS: MAIL SERVER COMMANDS

**Version 1.24, November 15, 1994,**  
**James Milles, Saint Louis**  
**University Law Library,**  
**millesjg@sluvcu.slu.edu.**

The latest version of this document is available by e-mail and by anonymous FTP:

*E-mail:* Send a message containing only the line GET MAILSER CMD NET-TRAIN F=MAIL to listserv@ubvm.cc.buffalo.edu.

*FTP:* Anonymous FTP to ubvm.cc.buffalo.edu cd /nettrain get mailser.cmd

*Anonymous FTP* to sluaxa.slu.edu cd /pub/millesjg get mailser.cmd

#### SPECIFIC RESOURCES

Below are some general and specific e-resources for technical services. We've listed some of the more popular titles and a few sample specialty titles. This is far from an exhaustive list. We hope this section will help readers select resources that are best worth their time. Within each section, resources are listed alphabetically.

#### GENERAL

**Resource:** ALCTS Network News: AN2 (ISSN 1056-6694)

**Subscription Address:** listserv@uicvm.bitnet

**Message Submission:** Send messages to the editor, Karen Whittlesey, American Library Association (u34261@uicvm.bitnet).

**Editor:** Karen Whittlesey; Editorial Advisory Board: Jennifer Younger, Robert P. Holley, David Farrell; Editorial Assistance: Karen Muller

**Subscriber Base:** ca. 2,000 international subscribers.

**Scope:** News about the Association for Library Collections & Technical Services, a division of the American Library Association, and general topics of interest to technical services librarians

**Traffic:** Irregular publication, several times a month

**Archive:** Back issues of AN2 are available through the listserver. To find out what's available, send the command, 'send alcts filelist' to listserv@uicvm.bitnet

**Comments:** One issue covered the Association's 1995 election information, a request from the professional ethics committee for comments on a draft proposal, and information about how to get a popular article on overseas book donations. AN2 also provides late-breaking news about ALA, ALCTS and the profession, publishing news, and information on programs, and continuing education opportunities within and outside ALCTS.

**Resource:** CNI-Copyright

**Subscription Address:** listproc@cni.org

**Message Submission:** cni-copyright@cni.org

**Moderator and List Owner:** Mary Brandt Jensen, University of South Dakota, in affiliation with the Coalition for Networked Information (cni-copy@charlie.usd.edu).

**Subscriber Base:** ca. 1,000 international subscribers who are lawyers, law professors, librarians, publishers, teachers and authors. Anyone with an interest in copyright or even just a fleeting question is welcome.

**Scope:** Copyright and intellectual property issues of interest to the Coalition for Networked Information community

**Traffic:** Very high, from six to twelve or more messages/day

**Archive:** The archives are accessible via Unix-Listproc e-mail; FTP (FTP.FTP.cni.org); Gopher and the World

Wide Web (<gopher://gopher.cni.org/11/cniFTP/forums/>); and through the Coalition's BRS/SEARCH software. To access, telnet to <a.cni.org> and login as `brsuser`. The archives are updated each Friday.

**Comments:** Although much of the traffic on this list deals with legal questions well beyond the scope of most librarians, there is the occasional discussion that shouldn't be missed.

Some recent examples include discussion of the Gordon and Breach subscription contracts, the implications of the fair use case *Texaco vs. the American Geophysical Union*, and a critique of the "NII Green Paper."

**Resource:** Current Cites (ISSN 1060-2356)

**Subscription Address:** send the message, sub cites first name last name, to [listserv@library.berkeley.edu](mailto:listserv@library.berkeley.edu)

**Editor:** Teri Andrews Rinne, University of California, Berkeley ([trinne@library.berkeley.edu](mailto:trinne@library.berkeley.edu))

**Subscriber Base:** ca. 20,000 international readers.

During the summer of 1994, 50 new subscribers/week were added to the list. The audience is quite varied, including many foreign subscribers, organizational (.org), corporate (.com) and governmental (.gov) affiliates, in addition to the more traditional academics (.edu).

**Scope:** Reviews articles from over 30 journals that cover: computer networks and networking; optical disc technologies; artificial intelligence and expert systems; electronic publishing; document delivery and information transfer; and hypermedia/multimedia and general interest articles and news.

**Traffic:** Monthly issues

**Archive:** An archive site is maintained at <FTP.lib.berkeley.edu> in directory `/pub/Current.Cites`

The URL is <FTP://ftp.lib.berkeley.edu/pub/Current.Cites>

**Comments:** Since 1991 Current Cites has delivered high quality SDI services to librarians, information specialists, and system staffs.

The nearly 1,200 abstracts of articles, books and electronic documents in library and information technology are well written and on occasion include the reviewer's opinion. This publication is written by the Information Systems Instruction and Support Department of the UC Berkeley Library.

**Resource:** The Public-Access Computer Systems Review (ISSN 1048-6542)

**Subscription Address:** Send the message: subscribe pacs-p first name last name, to [listserv@uhupvml.uh.edu](mailto:listserv@uhupvml.uh.edu)

**Editor:** Charles W. Bailey, Jr., University Libraries, University of Houston ([cbailey@uh.edu](mailto:cbailey@uh.edu))

**Associate Editors:** Leslie Pearse, Columns and Dana Rooks, Communications

**Subscriber Base:** ca. 9,600 subscribers in over 70 countries.

**Scope:** This refereed title is of general interest to almost all librarians. The five volumes since 1990 have included papers on: Mosaic and the World Wide Web, HyperText Markup Language (HTML), electronic publishing, and campus-wide information systems.

A sampling of columns topics includes: cataloging Internet resources, online catalogs, and USMARC format integration.

**Traffic:** The electronic version is irregular.

**Archive:** To retrieve a cumulative index, send the following e-mail message to [listserv@uhupvml.uh.edu](mailto:listserv@uhupvml.uh.edu): GET INDEX PR F=MAIL. Or use the journal's URL, <gopher://info.lib.uh.edu:70/11/articles/e-journals/uhlibrary/pacsreview>. The first four volumes of The Public-Access Computer Systems Review are also available in print from ALA's order department.

**Comments:** PACS Review is one of three excellent information services started by Charles Bailey. The others are PACS-L (Public-Access Computer Systems News), the first major discussion list for librarians, and PACS-Newsletter. PACS-Review and the Newsletter are highly recommended. The subscription information above

will retrieve both publications. PACS-L is an excellent moderated list, but has very heavy traffic, up to 15 messages/day. Discussion is focused on library user systems and generally does not cover library technical services processing systems.

#### ACQUISITIONS, SERIALS, COLLECTION DEVELOPMENT

**Resource:** ACQNET: The Acquisitions Librarians Electronic Network (ISSN 1057-5308)

**Subscription Address:** LISTSERV@listserv.appstate.edu

**Message Submission:** acqnet-l@listserv.appstate.edu

**Moderator and List Owner:** Eleanor Cook, Appalachian State University (cookei@conrad.apstate.edu)

**Subscriber Base:** ca. 1,200 subscribers in 11 countries.

Subscribers include technical services and collection development librarians, paraprofessionals, library school students, and publisher and vendor representatives.

**Scope:** ACQNET serves as an informal forum for discussing acquisitions (with an emphasis on monographs) including selection, acquisition methods and procedures, vendor relations, and publishing practices.

**Traffic:** Low, averages approximately two messages per week.

**Index:** All articles are indexed; ACQFlashes are not indexed.

**Archive:** All issues are archived; ACQFlashes are archived for one year only. Archive is available via WWW at <http://www.lib.ncsu.edu/stacks/acqnet-index.html> or <gopher://dewey.lib.ncsu.edu:70/11/library/stacks/acq>.

**Comments:** ACQNET postings are edited and organized into numbered issues which include tables of contents.

Issues are mailed irregularly, and the frequency of mailings depends on the number of submissions received by the moderator.

Subscribers to ACQNET also receive ACQFlashes—irregular, moderated, time-sensitive postings. AC-

QFlashes include announcements for upcoming conference and workshop meetings, job opportunities, rush requests for information, and news items which are too hot to wait for an issue of ACQNET.

Recent topics and announcements have included: "Is there a community of acquisitions librarians?"; postings relating to the Charleston acquisitions conference; government documents vendor recommendations; questionable publishers' questionable practices; out-of-print music dealers; women's bookshops; and acquisitions librarians' code of ethics.

**Resource:** BACKSERV: The Serials Back Issues and Duplicate Exchange List

**Subscription Address:** listserv@sun.readmore.com

**Message Submission:** BACKSERV@sun.readmore.com

**Subscriber Base:** ca. 500 subscribers in 15 countries.

Subscribers include those seeking to offer or buy back issues of serials or monographs.

While dealers and other exchange organizations may subscribe to the list, currently they have been requested to refrain from submitting messages.

**Moderator and List Administrator:**

The list is unmoderated. List administrators are: Marilyn Geller (mgeller@readmore.com) and Amira Aaron (aaron@readmore.com), Readmore, Inc.

**Scope:** BACKSERV facilitates the exchange of serial and monograph back issues.

**Traffic:** averages about 10 messages per day.

**Archive:** All postings are archived for three months and are WAIS searchable on the Readmore gopher (gopher.readmore.com). Archive is available via WWW at <gopher://gopher.readmore.com:70/11/backserv>.

**Comments:** The archives of BACKSERV are freely accessible to subscribers and non-subscribers. Non-subscribers are allowed to submit messages to the list.

**Resource:** COLLDV-L: Library Collection Development Listserv

**Subscription Address:** listserv@vm.usc.edu

**Message Submission:** COLLDV-L@vm.usc.edu

**Moderator and List Owner:** Lynn F. Sipe, University of Southern California (colldv-l@vm.usc.edu)

**Subscriber Base:** ca. 1753 subscribers in 20 countries. Subscribers include collection development officers, bibliographers, and others involved with library collection development including acquisitions librarians, publishers, and vendors.

**Scope:** COLLDV-L is aimed at collection development librarians. Discussions are broad in nature and concern issues affecting the general development and management of library collections. These issues include approval plans, collection assessment, budgeting, pricing, collection policies, publisher and vendor relations, and resource sharing.

**Traffic:** Medium, averages three messages per day.

**Archive:** All published postings are archived.

**Comments:** Recent topics and announcements have included: the role collection development librarians should play concerning electronic resources; ILS vendor recommendations for tracking journal use; availability of the draft "Guide to Written Collection Policy Statements"; request for advice or policy statements governing selection of non-book materials; query as to who planned to buy a certain expensive title (the results were compiled in a subsequent posting).

Acquisition librarians monitor COLLDV-L to ensure they don't miss critical issues and trends. Selectors use this list to get the latest general information on electronic resources, policy statements, and on issues which match their current, local needs. Because of COLLDV-L's broad nature, selectors at some institutions rely on one person to monitor the list and to distribute postings as appropriate to others.

**Resource:** GOVDOC-L: Discussion of Government Document Issues

**Subscription Address:** listserv@psuvm.psu.edu

**Message Submission:** GOVDOC-L@psuvm.psu.edu

**Moderator and List Owner:** Raeann Dossett, University of Illinois-Urbana/Champaign (raed@vmc.cso.uiuc.edu)

**Subscriber Base:** 2,700 subscribers in 35 countries.

Subscribers include government documents librarians, reference librarians, and staff from the various government agencies who make their publications available to the public.

**Scope:** GOVDOC-L serves as a discussion list to cover issues important to those people working with government documents. Most discussion centers around U.S. Federal documents.

A subgroup, Needs and Offers, allows exchange of needs or offerings of documents.

**Traffic:** Medium, averages approximately three messages per day.

**Archive:** All postings are archived.

**Comments:** The common bond of most GOVDOC-L subscribers is U.S. Federal Documents librarianship. The Needs and Offers (N&O) subgroup of postings offers subscribers the opportunity to advertise for needed documents or to see offers of free, generally older, documents from other libraries. Federal agencies, primarily the General Accounting Office, occasionally announce the availability of newly published documents. Librarians often share valuable information about the availability of new documents, including sources for acquisition.

**Resource:** Newsletter on Serials Pricing Issues (ISSN 1046-3410)

**Subscription Address:** listserv@unc.edu (send message -

subscribe PRICES first name last name)

**Message Submission:** tuttle@gibbs.oit.unc.edu

**Moderator and List Owner:** Marcia Tuttle, University of North Carolina (tuttle@gibbs.oit.unc.edu)

**Subscriber Base:** ca. 2,000 direct subscribers.

Subscribers include technical services and collection development librarians, paraprofessionals, university faculty, publisher representatives and subscription agents.

**Scope:** The Newsletter is specifically focused on issues relating to pricing and costs of library journals and other serials.

**Traffic:** Low, averages approximately three issues per month.

**Archive:** All issues are archived at the URL <http://sunsite.unc.edu/reference/prices/prices.html> and through the University of North Carolina at Chapel Hill, Davis Library gopher ([issunsite.oit.unc.edu/The UNC-CH Internet Library/Electronic Journals/\\_Newsletter on Serials Pricing Issues\\_](mailto:issunsite.oit.unc.edu/The UNC-CH Internet Library/Electronic Journals/_Newsletter on Serials Pricing Issues_)).

**Comments:** The Newsletter is edited and organized into numbered issues which include tables of contents for a quick glance at the topics addressed in each issue. Issues are mailed out to all subscribers of the listserv as news develops.

Recent articles and announcements have included: Gordon & Breach/Harwood Academic pricing rate explanation; summary of the 1994 Latin American Periodical Price Index; "Print Journals: Tragic Loss or Good Riddance?"; press release announcing the online availability of Physical Review Letters; Texaco copyright appeal decision; Springer-Verlag announces grace period for 1995 subscriptions.

The Newsletter is highly recommended. Every issue contains important information. The whining expressed on some of the other lists is replaced here with mature exchanges of hard facts. For example: letters from librarians to publishers questioning their pricing or editorial policies and, often, the responses to those letters; press releases from publishers and vendors (information that will take weeks to appear in any print media); the impact exchange rates may have on the materials budget.

**Resource:** SERIALST: Serials in Libraries Discussion Forum

**Subscription Address:** [listserv@uvmvm.edu](mailto:listserv@uvmvm.edu)

**Message Submission:** SERIALST@uvmvm.uvm.edu

**Moderator and List Owner:** Birdie MacLennan, University of Vermont ([bmacleonn@uvmvm.uvm.edu](mailto:bmacleonn@uvmvm.uvm.edu))

**Assoc. Moderators:** Marcia Tuttle and Ann Ercelawn

**Subscriber Base:** ca. 2,000 subscribers in 33 countries. Subscribers include serials, acquisitions, and collection development librarians, paraprofessionals, publishers and subscription agents.

**Scope:** SERIALST serves as an informal forum for discussion of topics relating to serials including selection, acquisitions, cataloging, and binding as well as announcements for upcoming conference and workshop meetings and job opportunities.

**Traffic:** Medium, averages approximately two to five messages per day.

**Archive:** All postings are archived at [listserv@uvmvm.uvm.edu](mailto:listserv@uvmvm.uvm.edu) and through the University of Vermont's gopher ([gopher.uvm.edu/port 70/other UVM gophers and information resources/ UVM listserv archives/serialst...index](http://gopher.uvm.edu/port 70/other UVM gophers and information resources/ UVM listserv archives/serialst...index)). Archive is available via WWW at [gopher:// moose.uvm.edu:70/77/index/wais-indexes/serialst](http://gopher://moose.uvm.edu:70/77/index/wais-indexes/serialst).

**Comments:** SERIALST postings are mailed as they are received and reviewed by one of the moderators, who make an effort to group messages covering similar topics into single postings.

This timely exchange of ideas and opinions facilitates lively discussions. Typically a hot topic is discussed over four or five days. For these few days, message traffic is heavy. Then traffic subsides until a new hot topic surfaces.

Recent topics and announcements have included: duplicate year-end issue receipts; claiming direct or through your paid agent; NASIG Horizon Award; perplexing publisher pricing practices; the e- address for an electronic listing of publisher catalogs; query on interpretation of ANSI

Standards for serials holdings; MARC format for holdings and locations.

SERIALST is a good current awareness tool. It covers relevant conferences, meetings, publisher problems, solutions to problems, and vendor testimonials. Discussions reveal what other institutions require from their serials librarian (and how much they are willing to pay for it!). Occasionally, someone will post his/her "worst title change" candidate, lending humor to the work day.

Note: The authors highly recommend moderated lists. We rely on them to keep us aware of important issues. The moderators weed out meaningless or careless postings, raising the list's overall quality. However, sometimes the actions of a moderator can be controversial.

In the summer of 1994, the acquisitions and collection development community was embroiled in a controversy over moderated lists when discussion of the FAXON company and news about its sale negotiations, were stifled. The moderators of ACQNET, SERIALST, and The Newsletter on Serials Pricing Issues were concerned that an open forum regarding this issue could stimulate panic.

They didn't want to contribute to a highly volatile situation.

The moderators announced their decision to the subscribers and the reaction of the community was mixed. Many subscribers understood that part of the job of moderators and list owners is to exercise this kind of authority. Others felt that the leaders of the community had cut them off from important discussion. One librarian commented, "I felt very alone while trying to piece together all of the facts surrounding this extremely important issue."

#### CATALOGING

**Resource:** AAT-L: Art & Architecture Thesaurus Discussion List

**Subscription Address:** listserv@uicvm.cc.uic.edu, or, listserv@uicvm.bitnet

**Message Submission:** aat-l@uicvm.cc.uic.edu

**Scope:** AAT-L is a very specialized list for users of the Art and Architecture Thesaurus. It aims to provide a "more expeditious route of communication between the AAT office and AAT users."

**Traffic:** Moderate, several weekly postings.

**Comments:** Although this list is of primary interest to current users of the AAT or those who are considering its use to describe objects and art monographs, it may also be of interest to catalogers who wish to cultivate their knowledge of subject thesauri and issues relating to subject analysis that go beyond use of LCSH headings. Most discussions, however, tend to be very specific and focused on discrete terminology issues. Recent postings have included announcements about the frequency of AAT updates; discussions about the correct terms to be used for photo strips produced by automatic portrait vending booths.

**Resource:** AUTOCAT: Library Cataloging and Authorities

**Subscription Address:** listserv@ubvm.cc.buffalo.edu

**Message Subscription:** autocat@ubvm.bitnet

**List Owner:** Judith Hopkins, SUNY at Buffalo (ulcjh@ubvm.cc.buffalo.edu)

**Moderator:** List is predominantly unmoderated.

**Subscriber Base:** ca. 2900, predominantly from the United States but also from Europe, Latin America, Asia, Australia and New Zealand.

**Scope:** Postings to Autocat typically cover the gamut of cataloging concerns, including the interfaces between cataloging and other library activity. The discussion ranges from the broadly philosophical to the most specific sorts of inquiries about correct cataloging practice. Job postings, announcements about new cataloging initiatives, about upcoming meetings, and reports on meetings that have been recently held are also regularly posted.

**Traffic:** heavy, the list averages about 20

postings a day although it may sometimes reach over 50 a day.

**Archive:** Postings are currently archived 1992- to date, but the 1992 files will soon have to be de-archived to make space in the filelist. The archives are purged when it is necessary to make space for new material. When this occurs, the earliest remaining year is removed; it is not discarded but retained off-line.

These years cannot be keyword searched as the on-line archives can be, but the listowner can send the files for particular months.

**Comments:** Most postings are mailed to subscribers as they are received. Recent discussions have included: initial articles in the MARC 246 field; classification of the work of Robert Owen; an inquiry concerning a possible vendor who can provide cataloging for Vietnamese titles.

AUTOCAT is an invaluable resource for catalogers and a forum where cataloging concerns can be aired and roundly discussed.

Since it has the largest body of subscribers of any of the cataloging lists, one can be sure that queries posted to the list will be widely vetted and elicit many useful responses. For the same reason, most announcements of interest to catalogers are posted or cross-posted to this list.

The discussion is often stimulating, always spontaneous and usually thoughtful. These virtues, however, hint at the greatest drawback of subscribing to the list. The fact that the list is not moderated and has so many subscribers means that one may have to devote considerable time winnowing the postings in order to isolate those that are of interest or that are not duplicative.

**Resource:** CONSERline

**Subscription Address:** listproc@loc.gov  
Moderator: Bill Anderson, Library of Congress (wand@loc.gov)

**Subscriber Base:** ca. 820 international subscribers.

**Scope:** CONSERline is an electronic newsletter. It replaces a printed publication called CONSER. It contains news of the CONSER program and information of general interest to the serials cataloging community.

**Traffic:** Issued irregularly two to three times annually.

**Comments:** Conser is a cooperative serial cataloging program.

Although geared to CONSER, a cooperative serial cataloging program, the newsletter contains information on new publications, updates to documentation and other articles of general interest to serials catalogers.

**Resource:** COOPCAT: Cooperative Cataloging

**Address for Subscription:** iubvm. ucs. indiana.edu, or listserv

**Address for Message Submission:** coopcat@iubvm.ucs.indiana.edu, or coopcat@iubvm.indiana.edu

**List Owner:** Carol Walton Hixson, Indiana University, Bloomington (cwalton@ucs.indiana.edu)

**Moderator:** List is not moderated.

**Subscriber Base:** ca. 700 international subscribers.

**Scope:** This discussion group was originally intended to further specific cooperative ventures between libraries. Its scope, however, has widened considerably and it has been adopted by the Cooperative Cataloging Council, the organizer of the new Program for Cooperative Cataloging, as a quasi-official organ.

The list is rarely used to discuss cataloging minutiae, but rather to make announcements concerning cooperative initiatives as well as occasional queries and discussions that touch upon broader conceptual issues that have bearing on the cooperative environment.

**Traffic:** Low

**Archive:** All postings are archived.

**Comments:** COOPCAT postings are mailed out to all subscribers as they are received; they are not moderated, but since the traffic is moderately light, this does not usually pose a problem.

Some examples of recent postings are: a report of an informal test of the efficacy of the new CONSER core record standard relative to the time taken to catalog at full level and to catalog at core level; the agenda for the Library of Congress cooperative cataloging meeting at Midwinter ALA; an inquiry and a response about whether or not LC. continues to publish the (Cooperative Cataloging News).

This forum allows one to keep in touch with various cataloging initiatives and activities within the cooperative cataloging community without having to negotiate large numbers of unrelated postings.

Some announcements that are posted to this list are also cross-posted to AUTOCAT.

**Resource:** EMEDIA: Electronic Media Cataloging Issues in Libraries

**Subscription Address:** listserv@vax1.elon.edu

**Message Subscription:** emedia@vax1.elon.edu

**Listowner:** Eric Childress, Elon College (childres@vax1.elon.edu)

**Moderator:** EMEDIA is not moderated; since it is semi-private, only subscribers may post to the list.

**Subscriber Base:** ca. 300 international subscribers

**Scope:** EMEDIA has as its stated purposes (1) to serve as a forum and sounding board for the various parties responsible for creating, adapting and revising cataloging rules and practices for electronic media and as a point of exchange between these groups and the electronic media cataloging community; (2) to serve as a practical help exchange for catalogers; and (3) to serve as an information resource for the electronic media cataloging community.

A secondary purpose is to serve as a general information resource for librarians involved in the wider gamut of collecting and supporting access to electronic media.

The invitation to the list defines electronic media as: "information ob-

jects/resources which are either must be, or, are intended to be, used in conjunction with a computer." The definition further notes that electronic media may include tangible items (e.g. software, CD-ROM) or remote resources.

Announcements and reports of meetings that are of interest to the electronic media cataloging community are regularly posted to this list.

**Traffic:** Low

**Archive:** EMEDIA is archived although the archive is not currently searchable (as of 1/10/95); future software developments at Elon College should address this deficiency.

**Comments:** EMEDIA is a semi-private list, intended to complement established lists that deal with cataloging issues.

Discussions are highly-focused; it is a very useful resource for those involved with electronic media.

The listowner has established an informal although reciprocal relationship with the listowner of the US-MARC list whereby they occasionally repost to EMEDIA or USMARC items appearing on other lists that are especially pertinent to electronic media catalogers. Postings have included: discussion of cataloging reproductions resulting from scanning; a report of the recent workshop at Library of Congress on cataloging digital texts.

**Resource:** EXLIBRIS: Rare Books and Special Collections Forum

**Subscription Address:** listserv@rutvm1.bitnet or listserv@rutvm1.rutgers.edu

**Message Submission:** exlibris@rutvm1.bitnet or exlibris@rutvm1.rutgers.edu

**Listowner and Moderator:** Peter Graham, Rutgers University (psgraham@gandalf.rutgers.edu)

**Subscriber Base:** ca. 1300 international subscribers

**Scope:** EXLIBRIS deals with all aspects of rare book and special collections librarianship. About 10% of the postings are directly related to special collections cataloging issues while another 30% are relevant to cataloging

concerns (e.g. terminology questions, reference/on-line sources, collecting activity).

**Traffic:** Moderate

**Archive:** All postings are archived.

**Comments:** EXLIBRIS is especially important to special collections catalogers since the list subsumed NOTRBCAT, which was aimed at special collections catalogers using NOTIS. There is no other list specifically dedicated to the particular issues that involve special collections catalogers.

Recent postings include the following: guidelines for the identification and dating of 19th-century publishers catalogs; discussions of complex collations; discussions of the recently issued examples of cataloging meant to accompany Descriptive Cataloging of Rare Books.

**Resource:** ETEXTCTR: Electronic Text Center Discussion Group

**Subscription Address:** listproc@lists.princeton.edu

**Message Submission:** etextctr@lists.princeton.edu

**Moderator:** Mary Mallery, The Center for Electronic Texts in the Humanities allery@eden.rutgers.edu or mallery@eden.bitnet

**Subscriber Base:** ca. 751 international subscribers

**Scope:** ETEXTCTR has as its intended audience those who are actively involved in developing electronic text centers. It is meant to cover broad issues, budgets, acquisitions, cataloging, public services, management, etc. Its focus is on full-text files that are monographic in nature rather than e-journals or numeric data files. Although the amount of coverage of cataloging issues varies, about a third of the postings may be of interest to catalogers of e-texts.

**Traffic:** Moderate to light, ca. 20 postings per month.

**Archive:** Postings are archived at gopher://lists.princeton.edu

**Comments:** This list is a useful resource for the very specialized audience to which it is directed.

It is informative for those of us who want to raise our awareness of the issues surrounding electronic texts. Recent postings of interest to catalogers of e-texts include: announcements of meetings of interest at Midwinter ALA; reviews of books concerning electronic texts (posted regularly); discussion of the Text Encoding Initiative header and its integration with MARC records.

**Resource:** Ha-Safran

**Subscription Address:** listserver@lists.acs.ohio-state.edu

**Message Submission:** hasafran@lists.acs.ohio-state.edu

**Listowner and Moderator:** Joseph Galron, Ohio State University (galron.1@osu.edu)

**Subscriber Base:** ca. 236; subscribers must be members of the Association of Jewish Libraries. Those who are not current members and who wish to participate in the discussion on Ha-Safran, should contact the Vice-President for Membership, Phillip Roberts (probarts@umiami.bitnet)

**Scope:** Although Ha-Safran is the official discussion forum for the Association of Jewish Libraries and it covers a wider scope than cataloging, it does serve as the main venue for the exchange of information between Judaica and Hebraica catalogers. Approximately 30% of the postings concern cataloging issues.

Another list for Hebraica catalogers is, however, now in construction. HEB-NACO will be a closed list for participants of the Hebrew NACO funnel project and other individuals who contribute Hebrew names to NACO. When that list is operational, NACO related authority questions which are currently addressed on Ha-Safran may move.

**Traffic:** light, averaging 5-8 postings a week.

**Archive:** Ha-Safran is archived in the listserve archive from April 1992. Another copy of the archives is held by the moderator.

**Comments:** Ha-Safran is a valuable re-

source for Judaica and Hebraica catalogers. Recent cataloging related postings and discussion have dealt with: the reference sources NACO catalogers are using to establish Hebrew names and updates to the relevant LC classification schedules.

**Resource:** LCCN: LC Cataloging Newslines

**Subscription Address:** listproc@loc.gov

**Editor:** Robert M. Hiatt, Library of Congress (hiatt@mail.loc.gov). Questions about the content of the newsletter should be addressed to the editor.

**Moderator:** David Williamson, Social Sciences Cataloging Division, Library of Congress (dwi@loc.gov) Questions regarding subscribing to the list should be sent to the moderator.

**Subscriber Base:** ca. 1,893 international subscribers.

**Scope:** LCCN is an electronic newsletter issued by the Library of Congress' Cataloging Directorate. It is compiled at least quarterly (January, April, July, and October) although additional issues may be created at the discretion of the Directorate. Its purpose is to inform the cataloging community about the activities of the Library of Congress in the areas related to cataloging. It may contain announcements about new and revised policy decisions, technological developments, new publications, meetings, reports, and employment opportunities in cataloging.

**Comments:** For catalogers, access to LCCN is highly recommended. It offers the quickest, most efficient way to remain informed about activities of the Library of Congress that have implications for the entire cataloging community.

Among the contents of the last issue (January 1995) were: a report on The Cooperative Cataloging Council Meeting of Nov. 17, 1994; a report on the Cooperative Cataloging and Library Vendor Fair; NLC and LC Name Authority practices; information on the LC Task Force for the Digital Library; LC Review of foreign MARC records; and possible changes in LC

Policy regarding family names.

**Resource:** USMARC: USMARC Advisory Forum

**Subscription Address:** listproc@loc.gov

**Message Submission:** usmarc@loc.gov

**Moderator:** Rebecca Guenther, Library of Congress (rgue@loc.gov)

**Subscriber Base:** ca. 754 international subscribers.

**Scope:** USMARC is used as a vehicle for discussions of the implementation, maintenance, changes and development of the MARC formats. Proposals and discussion papers to be considered by MARBI are announced on the list with instructions about how to access them on the USMARC listserv file server or through LC- MARVEL (LC's CWIS).

**Traffic:** Moderate

**Archive:** USMARC messages are archived monthly.

USMARC archives also include: "USMARC formats: Backgrounds and Principles"; MARBI proposals and discussion papers; Keyword index to MARBI proposals; keyword index to MARBI discussion papers, MARBI minutes; states of proposals and discussion papers; USMARC documentation (includes format field lists, code lists, etc.); USMARC Change Form (for requesting changes). All archives are generally kept for the current and previous year.

**Comments:** Although the list is concerned with the USMARC format as a communications format, the use and development of the format is so deeply intertwined with cataloging that the issues discussed are often of vital concern for catalogers. It is a very focused discussion list and one of the most useful for practicing catalogers with an interest in the development of this important facet of their specialty.

Recent discussion topics and announcements have included: availability of the *USMARC Format for Holdings Data*; the schedule for MARBI meetings at ALA Midwinter; discussion of multi-lingual thesauri and how their use might be accommodated in

the MARC formats; records for online information resources.

#### LIBRARY SYSTEM AND BIBLIOGRAPHIC UTILITY USER LISTS

There are several lists that serve the users of specific library systems as well as discussion groups dedicated to the users of particular bibliographic utilities.

The vendor specific lists are usually general in scope, covering everything from circulation, management reports, authorities and cataloging modules. Obviously, they can play an important role as a source of information for technical services librarians.

Some vendor user group discussion lists target specific segments of the user community such as cataloging or acquisitions, NOTISCAT or NOTISACQ for instance. Lists that serve the utilities may be general in nature, such as RLIN-L, or may target specific products, e.g. FIRSTSER-ARCH-L which serves users of OCLC's Firstsearch service. These forums are usually included in the summaries of library related lists such as Steve Bonario's, which includes a subject arrangement that locates such forums under the topic "Vendor Information and User Groups."

#### PRESERVATION

**Resource:** AMIA-L: Association for Moving Image Archivists

**Subscription Address:** listserv@ukcc.uky.edu

**Message Submission:** amia-l@ukcc.uky.edu

**List Coordinator:** Tom House, University of New Hampshire (current e-mail not available at time of writing)

**Subscriber Base:** ca. 345 in 15 countries. Many participants are moving image archivists. Representatives of commercial ventures involving moving images also participate actively and share their expertise.

**Scope:** AMIA-L was established to facilitate communication among members of the Association for Moving Image Archivists and others interested in all aspects of the preservation of moving

images, including motion picture film and video.

Postings include: queries concerning archival holdings, preservation activity, availability of equipment and services; announcements of job openings, conferences and meetings, new acquisitions, new publications, etc.

**Traffic:** Low, averages about 1-2 messages per day

**Archive:** AMIA-L is automatically archived. Files can be retrieved using the LISTSERV commands described earlier in this article. Web access is the preferred method.

The AMIA-L archive files also are available through HYPATIA, a WAIS service provided by the Pittsburgh Regional Library Center (telnet prlc.org and login hypatia, password hypatia). Jane Dunbar Magree at UCLA summarizes the messages posted to AMIA-L; the summaries are published in the quarterly AMIA newsletter.

**Comments:** AMIA-L provides a wealth of information about the preservation of moving images; a high percentage of messages involve substantive discussions of preservation issues.

Some of the topics recently covered are: microclimates inside videotape cases; recordings on paper audiotape; barcoding videotapes; how best to isolate and store acetate films exhibiting vinegar syndrome; conversion costs; rewinding videotapes; prioritizing videotape restoration; and tape mold.

**Resource:** Conservation DistList

**Subscription Address:** For administrative matters (file requests, subscription requests, etc.), use the address consdist-request@lindy.stanford.edu

**Message Submission:** consdist@lindy.stanford.edu Posting limited to "registered" participants (see below)

**List Owner and Moderator:** Walter Henry, Stanford University Libraries (whenry@lindy.stanford.edu)

**Subscriber Base:** ca. 1350 participants from at least 21 countries.

Participation is limited to people professionally involved—and this is interpreted very liberally—with the con-

servation of cultural materials. Participants include: conservators in several specialties (books, paper, paintings, objects, photographs, archaeological materials, ethnographic materials, etc.); preservation administrators; conservation scientists; library and museum curators; archivists; librarians; academics from a number of disciplines; students in library, archives, and museum studies, or conservation science; specialists in electronic technology; and staff and officers of funding agencies, professional organizations, and government entities involved with conservation.

**Scope:** Conservation DistList covers a broad spectrum of topics pertaining to the conservation/preservation of library, archive, and museum materials.

**Traffic:** Usually 2-3 digests are distributed each week. In 1994, there were 794 individual postings, in 94 mailings (digests).

**Archive:** All instances of the DistList are available via Conservation OnLine (CoOL). CoOL exists as three facets based on access method—World Wide Web URL <http://palimpsest.stanford.edu/>; Gopher URL <gopher://palimpsest.stanford.edu>; WAIS URL <wais:palimpsest.stanford.edu:210/cool.src>

Each facet provides different views of the Conservation DistList archives (and a large library of other materials related to the conservation of library archive and museum materials).

Web access is the preferred method.

In the WAIS facet, individual messages (not digests) are available for full text search/retrieval. In the Gopher facet, in addition to searching, digests are available for browsing. In the Web facet, the ability to browse individual messages by author, date, subject, and thread is added.

A list of current DistList participants (ConsDir—The Conservation E-mail Directory) is also available via CoOL.

**Comments:** Conservation DistList is probably the most important listserv for anyone interested in the preservation of library and archival materials. It

was begun in 1987 and is the second oldest library/museum-oriented list on the Internet.

As a moderated digest, the Conservation DistList is less formal than most newsletters, but more formal than most Internet mailing lists. To enhance retrieval in databases (Conservation OnLine), subject headings are subject to informal vocabulary control.

The postings are assembled into a consistent digest format, with a list of subjects and queries at the beginning of the text.

Recent topics include: American Institute for Conservation Code of Ethics revision; accelerated aging; announcements of meetings, conferences, funding, and educational opportunities; collection conservation issues; deacidification; digital imaging (e.g., digitization of microforms); disaster preparedness and response; environmental control; exhibition issues; fire suppression; job postings; mold and biohazards in collection materials; preservation of electronic formats, sound recordings, etc.; and storage, duplication, and treatment of photographic materials.

**Resource:** ERECS-L: Management & Preservation of Electronic Records

**Subscription Address:** [listserv@uacsc2.albany.edu](mailto:listserv@uacsc2.albany.edu) (or [listserv@albnyvm1.bitnet](mailto:listserv@albnyvm1.bitnet))

**Message Submission:** [erecs-l@uacsc2.albany.edu](mailto:erecs-l@uacsc2.albany.edu) (or [erecs-l@albnyvm1.bitnet](mailto:erecs-l@albnyvm1.bitnet))

**List Owner and Editor:** Thomas J. Ruller, New York State Archives and Records Administration ([tom@unix6.nysed.gov](mailto:tom@unix6.nysed.gov))

**Subscriber Base:** ca. 300 in 12 countries. The targeted audience is: archivists working in all institutional settings; students of archival administration; data archivists; data librarians; and other information professionals who can benefit from or contribute to an ongoing discussion of electronic records issues. Most contributors are archivists, but other information professionals do participate, including

conservators, preservation librarians, representatives of computer industry corporations, and consultants in information management.

**Scope:** This listserv focuses exclusively on electronic records. It provides a forum for archivists and other information professionals to discuss the ideas, techniques, and issues associated with the management and preservation of electronic records.

ERECS-L is also a vehicle for the electronic distribution of publications, newsletters, and gray literature associated with managing electronic records.

The list provides an opportunity to share information that will advance institutions' ability to make information in electronic form available, understandable, and usable as long as it is needed.

**Traffic:** Low, averages about 1-2 messages per day.

**Archive:** ERECS-L is automatically archived.

Files can be retrieved using the listserv commands described earlier in this article.

**Comments:** ERECS-L (Management & Preservation of Electronic Records) is an important tool for keeping current with the latest developments in the preservation of electronic records.

At this time, many of the posted messages are announcements—for jobs, publications, conferences, new listservs, etc.

Some recent exchanges on ERECS-L concerned the following topics: documentation; magnetic media preservation; 3480 tape quality; use of floppy diskettes for storing records; and legal admissibility of electronic records.

**Resource:** Imagelib

**Subscription Address:** listserv@listserv.arizona.edu

**Message Submission:** imagelib@listserv.arizona.edu

**List Owner:** Stuart Glogoff, University of Arizona (sglogoff@library.arizona.edu)

**Moderator:** List is not moderated

**Subscriber Base:** ca. 900 in ca. 32 coun-

tries (this does not include people who access Imagelib via Usenet). The people subscribing to Imagelib come from many fields and interests. All are interested or actively working in some area of imaging, optical publishing, or large databases.

The types of fields represented by those posting messages include faculty members, consultants, commercial imaging products vendors, computer support technicians, librarians, photographic and manuscript archivists, museum curators, and information technologists.

**Scope:** Topics range from: (1) accessing, retrieving, and displaying images from the Internet: preferences for particular interfaces, organizing directories on local servers, and preferences for particular clients; (2) creating local image databases: scanning photographic and slide collections of scholarly value or regional significance; full-text; (3) exploring issues such as copyright, permissions, and fair use; (4) working with users to incorporate image databases in their courses and research; sharing success stories and asking for advice.

**Traffic:** Heavy, averages about 10 messages per day

**Archive:** Contributions to this list are automatically archived. The logs are available via anonymous FTP, FTP listserv.arizona.edu in the directory /pub/listserv/imagelib and on the http server, ftp://listserv.arizona.edu/pub/listserv/imagelib.

Imagelib also maintains a very useful Clearinghouse of Image Databases that has over 80 entries of both existing and in-development image databases.

Access to the clearinghouse can be achieved several ways. The WWW URL is <http://dizzy.library.arizona.edu/images.html>. It is also possible to telnet to [sabio.arizona.edu](mailto:sabio.arizona.edu), and select O. OTHER databases and remote Libraries/03. Internet Gopher/10. Image Databases/5. Clearinghouse of Image Databases.

Another option is to gopher to the Clearinghouse of Image Databases. Gopher to [dizzy.library.arizona.edu](http://dizzy.library.arizona.edu),

select Image Databases/ Clearinghouse of Image Databases in Libraries.

**Comments:** Although there currently is not a heavy preservation presence on Imagelib, it is the most relevant listserv for people interested in digital imaging as a preservation method.

Some of the postings serve as mini-tutorials about various aspects of imaging, and messages regularly appear about the most recent literature. Participants readily provide advice concerning

equipment, vendors, and methods for digital capture and access.

Recent postings pertinent to preservation included: scanning pencil writing; 8-bit vs. 24-bit color; the difference between DPI (dots per inch) and resolution; JPEG compression; progressive transmission; imaging magazines and articles; RFPs for digital capture; newspaper scanning from microfilm or negatives; and large format flat-bed scanners.

# Book Reviews

Gregory H. Leazer, Editor

***RLG Archives Microfilming Manual.***

Ed. Nancy E. Elkington, Mountain View, Calif.: Research Libraries Group, Inc., 1994. Index. Appendixes. 208p., spiral-bound. \$45.

This long-awaited publication again has proven the strength and value of the Research Libraries Group (RLG) in assisting their membership by building on the experience of the group, and for a second time, too, I expect an RLG publication to become the de facto standard for a facet of library operations. The first such book in preservation was Nancy Elkington's *RLG Preservation Microfilming Handbook*, published in 1992. The most important characteristic of this new manual, however, is what it is *not*: it is not a definitive set of specifications for the complete procedures leading to microfilming of archival materials. It is, however, necessary reading for anyone working with archival materials, or anyone that is looking towards a possibility of reformatting in the future; it offers an outline of considerations for the entire workflow. The reasons that the definitive answers are not spelled out is due to the very nature of archival materials: there is too much variety for one set of standards to be endorsed. For each collection, informed curators must formulate goals and then work through what needs to be done to reach the goals. This manual is the most helpful resource for bringing the considerations involved with archival microfilming to one place with clear description and a discussion of alternatives. The archival procedures of appraisal and processing are discussed (in general terms, but noting the problems specific to preservation microfilming) as well as the target sequences and technical film requirements one

might expect in a work with this title. As library and printed materials curators evolved through several models and sets of guidelines for microfilming practice (culminating most recently in the *RLG Preservation Microfilming Handbook*), this new text is a first effort in an evolving process to document procedures associated with putting archival materials on microfilm. Even though the title seems to limit the scope of discussion, I suggest to those who think that microfilm is a dead technology to consult this volume, for many of the discussion points are consistent with reformatting an archival collection to microfilm or another medium.

As with the first RLG manual, this one has a series of chapters dealing with issues of the process and then a series of appendices, offering more discussion on particular topics, or particular examples to model for local use. The initial chapters begin a bit more broadly than the other RLG manual, with "Managing an Archival Preservation Microfilming Project," but proceed to the expected procedures for preparation of materials, microfilming procedures and inspection issues and routines. As noted in the manual's introduction, this beginning focus on project management was part of the process of consensus-building among RLG members participating in the cooperative project that was the basis for this work. In that cooperative project, institutions with great experience in microfilming archival materials as well as enthusiastic novices worked to document their procedures in completing similar tasks to develop procedural models. A very useful chapter on characteristics that seem necessary for digitization of microfilm is contributed by Anne R. Kenney of Cornell and completes

the basic text. The appendix materials offer such topics as filming difficult format materials, microfilm treatment (to limit deterioration) and a cost study based on the cooperative RLG archives microfilming project; this latter item presents only summary points of that work, but will clearly illustrate to curators to estimate and allocate staff resources in particular for undertaking such work. A second model of interest in this cost study describes categories of archival materials by physical format, and begins to classify their differences (as well as expand the vocabulary of many with the term "gallimaufry scrapbook"). The appendix section "Technical Microfilming Guidelines—Archival Materials" builds directly on the materials in the first RLG manual, including a numbering system that begins with item A (for Archives Manual).

This manual will be a very standard work for curators and preservation staff working with reformatting of archival collections—until the next edition replaces it!—Ann Swartzell, *University of California, Berkeley*.

**Cataloging and Classification: An Introduction.** By Lois Mai Chan. 2d ed. New York: McGraw-Hill, 1993. 519p. (ISBN 0-07-010506-5). LC 93-22606.

The second edition of Chan's textbook has been long-awaited. The original edition continued to be a valuable companion to basic cataloging instruction long after the information in it was hopelessly outdated. It is most welcome to have a new version that reflects current cataloging practice.

All 1981 references to tools were made current as of 1993. The *Anglo-American Cataloguing Rules, second edition* (AACR2) is replaced by the 1988 *Revision* (AACR2R), reference to Haykin's venerable *Subject Headings* is removed in response to the publication of the *Subject Cataloging Manual*, and Sears is considered in its fourteenth edition. Important additions to the work are sample MARC (Machine-Readable Cataloging) records and online displays throughout the text, the keying of cataloging rules to MARC fields, and new appendices with records

in MARC and public display format. Discussion of PRECIS (Preserved Context Indexing System) has been de-emphasized, while *Medical Subject Headings* (MeSH) and the National Library of Medicine (NLM) classification have been added, as well as a helpful discussion of how Library of Congress *Classification* (LCC) schedules are revised.

Completely reworked in this edition are several chapters that provide overviews of cataloging processes. There is a new introduction that explains the purposes of cataloging in terms of bibliographic control. Chapter 7, the introduction to subject cataloging, presents subject access in terms of online searching and considers the role of uncontrolled as well as controlled access to subjects. Chan's Chapter 16 on the production of cataloging records gives a concise survey of the technical services environment. Most examples are new, the in-chapter exercises are expanded, and Appendix E will delight cataloging teachers with its answers for all of them.

Much of the text has been revised and rearranged for style rather than content. For example, among the section headings in the chapters on *Library of Congress Subject Headings* (LCSH) "Hierarchical Structure" in the first edition become "Structural Hierarchy" in the second. "Syntax," previously used as a section heading only in the PRECIS chapter, now replaces "Forms [of headings]" in the LCSH chapter.

The reorganization and new chapters were done as an attempt to amend the first edition's basic weakness: the lack of synthesis of major concepts. For example, the concept of uniform and unique headings is repeated in the chapter on subject headings (p. 161) with no mention that it was previously discussed in the chapter on authority control (p. 126). In Chapter 4, the earlier part of the chapter discussing the changes in the treatment of personal authorship in catalogs is not referred to again in the later part's explication of rules for choice of access points.

The compartmentalization of information results in sections that speak of the classified catalog without any reference to

the role of a classification scheme or ones that present phase relations as a simple panacea to assigning both subject headings and classification numbers. Such awkward passages with undigested ideas stand in marked contrast to the elegant exposition of subject arrangement found in Arlene Taylor's eighth edition of Bogdan Wynar's *Introduction to Cataloging and Classification* (Englewood, Colo.: Libraries Unlimited, 1992, p. 307-327). While an earlier reviewer in this journal (Alan Thomas in vol. 37, no. 1 (Jan. 1993): 107-8) found Wynar/Taylor too detailed and dense, even for intermediate catalogers, I find it to be the textbook of choice

for advanced cataloging classes because of its ability to synthesize research literature and give benevolent advice on thorny topics like "aboutness."

To conclude, though, I want to emphasize that Chan is the textbook of choice for paraprofessional training, core courses, and basic electives that focus on book cataloging. Its simplicity is a strength with students who are still struggling with basic terminology. Everything necessary for a sound understanding of cataloging is included, and the second edition will undoubtedly have as great a longevity as the first.—*Cheryl M. Boettcher, University of California, Los Angeles.*

# Letters

From Robert Fugmann, Lecturer, Vice-President of the International Society for Knowledge Organization (ISKO), Idstein-Germany:

In *Library Resources & Technical Services* 38, no. 3 (1994), 324–26, Professor Bella Hass Weinberg published a review of my book, *Subject Analysis and Indexing: Theoretical Foundation and Practical Advice*.

This review violates several rules of impartiality and fairness which a reviewer owes to the author of a work, as they have most recently again convincingly been compiled by Daniel (1993). In the following, the most conspicuous types of flaws in this review are commented upon.

## 1. Failure to recognize the essentials of the book

Most of the substantial points of the book are omitted from discussion, such as the following ones: (a) the five axioms (the core of my theory) and their explanatory and predictive value; (b) categorization and the various roles that conceptual categories play in an information system; (c) the particular subdivision of the representational task between vocabulary and grammar in an index language; (d) the various, in part novel, syntactical devices, in particular that of the most useful relation indicator; (e) the exemplification of the analytico-synthetic approach in indexing and retrieval and the (novel) relief which it provides from excessive expenditure in analysis through the notion of ubiquitous conceptual components; (f) the (quite uncommon but useful) borderline between general and individual concepts; (g) the subdivision of the indexing and retrieval task between clerical assistant and scientist on the basis of this borderline; (h) the (quite uncommon but use-

ful) definitions of the central notions of information and of order; (i) the outstanding role of representational predictability in the explanation and prediction of several hitherto unexplained phenomena—for example, in the presently prevailing contradictions in indexing consistency and exhaustivity, and in giving the reasons for the failure of the early syntactical device of the “link”; (j) the axiomatic specification of the capabilities and limitations of free indexing and of full text retrieval; (k) the (novel) notion of the relation path in vocabularies, as a criterion for a continuing, durable operability of an index language vocabulary; (l) the non-empirical, economical, and particularly reliable tests for representational predictability (in the interest of high recall ratio) and for representational fidelity (in the interest of high precision rates); (m) the resolution of the still pending issue of the “inverse precision-recall relationship”; and (n) the clarification of the natural limits of any information technology through the notion of the indeterminacy of processes (not entirely new, but widely neglected so far).

Instead of discussing at least some of these essentials the reviewer concentrates on immaterialities.

## 2. Concentrating on immaterialities

a. Hyphenation: The omission of hyphenation is criticized and—allegedly—unequal spacing as the consequence: Invisible to the unbiased reader.

b. Spelling out the particularly depreciating misprints in the book.

c. Blaming unskillful use of language and literally reproducing them: How many papers has the reviewer published in a foreign language? (My translator writes British English.)

d. Criticizing gaps in the paragraph numbering: The advantages of my para-

graph indexing (instead of page indexing) are not mentioned, for example:

- more precise access to the desired passages for the reader;
- possibility of inserting paragraphs without disturbing the existing locators in the provisional index during the writing of the manuscript;
- possibility of making the index prior to paging has been done, and thus;
- having more time for the index preparation.

What harm is caused that some paragraph numbers are omitted?

e. Criticizing my sequence of the preliminaries (table of contents, foreword, preface, glossary, list of figures), which is found to be strange by the reviewer: The reviewer insists on the list of figures to have to follow the table of contents instead of following the glossary. However, there are always many linear sequences in which items can be arranged. Objections can be raised against each of these linear sequences, and another one can be claimed to have to be preferred, in the urge to compile and to extend criticism.

f. Criticizing the paragraph numbers in the list of figures: The list of figures is criticized because, here, the paragraph numbers in which the figure is discussed—and not the page numbers—are given where the figures are printed. But the reader will probably be most interested in being directed to the passage where the topic of the figure is discussed and explained. From there, the reader will easily find the figure printed in the immediate vicinity. This may often be felt easier than trying to find the explanatory passage starting from the appertaining figure.

g. Wellisch's missing forename in one of the citations.

h. Criticizing the term enumeration in the glossary: The glossary informs the reader of the definitions of the terms that have been used in the book. They are arranged in alphabetical sequence and have received consecutive term numbers in the glossary. Instead of appreciating the general clarification achieved by the glossary, it is criticized that the numbers "are not explained in a preliminary note." An example from the glossary is the following:

## 2. Associative Relation

Any Relation between concepts (6) that is not hierarchical (18) and not purely logical (25):

Here, the term "associative relation" has been assigned number 2 in the alphabetical sequence of terms. Under number (6) the reader finds the term "concepts" explained, under (18) "hierarchical relation", etc. Is the reader really overtaxed with having to recognize that the bracketed number "(6)" refers to the position number (6) of "concept" in the glossary? Through this numbering it is made obvious at the same time that the term "concept" is defined in the glossary, too, and in fact at location number (6) in the sequence of terms. It is just through this type of referencing that no sequential reading of the glossary is necessary, in sharp contrast to what has been stated in the review.

i. Layout: The reviewer wrongly assumes that the book has been reproduced merely from a word-processed copy. In fact, however, the layout had been professionally made with Aldus PageMaker.

It is hardly worthwhile in a review of limited space to dispute immaterialities and idiosyncracies such as these. This holds true also for the only positive comment which the reviewer makes on the book: "The generous gutter margin will permit rebinding of this paperback for library-information science collections."

## 3. Stating a view different from that of the author and declaring this different view the only acceptable one

Several examples of this attitude are found in Professor Weinberg's review. I comment on them using some articles of the *Journal of the American Society for Information Science* 45, no. 3 (1994):

*First case:* The sentence in the book (paragraph 292): "Unfortunately, this important difference" (namely the difference between relevance and pertinence) "has almost completely been disregarded in the literature of the more recent past" is contradicted in the review through: "Information science journals are full of articles on this topic."

In his introductory article to the special issue of *JASIS*, Froehlich writes (p. 128, right-hand column, third paragraph): "Relevance judgments do not conform to the professional research distinction between relevance and pertinence."

Most clearly, in the same issue of *JASIS* Dara Lee Howard writes (footnote on p. 173, bottom left), quite representative for the view expressed in almost all the articles in this special issue: "In general, pertinence is the version of relevance that I am discussing. It is the sense of relevance that encompasses the judgment of the information problem solver, his or her need and his or her interaction with information documents. I use the term relevance interchangeably."

This exchange of "pertinence" by "relevance" (and, in my opinion, the confusion which results from that) can well be looked upon as typical of the direction of research in the more recent past. Hence, my statement that "relevance" is more and more being used in the sense of classical pertinence is perfectly correct. By no means is literature full of contradictions to this statement. The meaning in which I use relevance and pertinence has been defined in the glossary of the book. It is congruent with the definitions that have been in use before the confusion of the traditional meaning of relevance (in the topical sense) with relevance (in the pertinence sense) had spread.

*Second case:* The review says that I am guilty of provoking miscommunication through my use of words in idiosyncratic meanings. The reviewer defines "query" as a user's information need as expressed in natural language, and is distinguished from formal search statements, and contradicts my definition (as specified in the glossary of the book) which states for "query" the entirety of the search parameters effective in retrieval.

In *JASIS* 1994, no. 3, p. 150, Carol L. Barry says: "The system matches subject terms that comprise document representations and queries" and "that relevance is the result of a match between the subject terms of the query and the subject terms assigned to the documents."

Here, "query" is used precisely in the

sense to which I gave preference. Ingwersen (1994), too, uses "query" in the same sense. My definition of "query" is also in conformity with that of Woodruff and Plaunt (1994). I also quote from American National Standards Institute (1980), ANSI Z39.19-1980, figure 1, step 5: "Matching index terms with query terms," which yields "response to query." In the indexes of the *Journal of the American Society for Information Science* of the recent years under "Queries" and "Query formulation" there are listed, for example, "an expert system for query formulation," "representation of Boolean queries," "algorithm for automatic construction of query formulations in Boolean form." SQL, Standard Query Language, is not a language in which the information seeker expresses his/her information need. Rather, the search statements are phrased in this language. What the reviewer entertains and insists on is only one of at least two possible meanings of the term "query."

Furthermore, by no means does it lead to miscommunication if only an author clearly says what he/she means by a term, in particular, if this is done in accordance with one of the perfectly common word usages.

*Third case:* The review says: Catalogers who know the work of Dykstra (1988) will recognize the incorrectness of Fugmann's statement, "The Library of Congress subject heading list is a typical thesaurus."

There are several definitions of the thesaurus in use. At least the thesaurus criteria of the American National Standards Institute (1980) are satisfied by the Library of Congress Subject Heading List (cf. p.9 of the standard: "... a thesaurus is defined as a compilation of words and phrases showing synonymous, hierarchical, and other relationships and dependencies, the function of which is to provide a standardized vocabulary for information storage and retrieval"). Considered essential here for a thesaurus is the feature of an alphabetical list of index terms with references to related terms. But I agree, LCSH is not a model example of a thesaurus.

It is pointless to contradict a definition with the argument that there is a different definition elsewhere, for which absolute preference is claimed.

*Fourth case:* The index and the structure of its hierarchies: Professor Weinberg criticizes that the arrangement of the systematic index in the book "replicates" the logical arrangement of the text. But the author of a systematic index should strive for a structure of hierarchy which is helpful in the view of a searcher. By no means must this arrangement always be different from that of the table of contents, as the reviewer seems to claim.

For example, why should the various syntactical devices, such as role indicators, deep case grammar, segmentation, adjacency operators, etc., not be brought together under the general subject heading of "Syntax," a type of arrangement which recurs in the table of contents?

In my book, the vast majority of the locators under a subject heading point to relevant paragraphs which are far distant from each other in the text. Thus, the index is by no means redundant to the table of contents and perfectly serves its purpose.

The review also criticizes the systematic index for its requiring "triple lookup." The truth, however, is that one additional step is required here, as compared to lookup in the conventional alphabetical index: In the alphabetical basic index of the book the position number of the subject heading in question is found. This number points to the position of the subject heading in its systematic environment in the systematic index, where the locators for the subject under consideration are listed.

It is for good reasons that the complete alphabetical index is omitted from the book (but available on request from the publisher) because the experimental basic index of the book serves the same purpose (at the cost of one additional lookup), and because the important additional capabilities of the systematic index were primarily to be demonstrated in the limited space available.

The alphabetically arranged basic index provides some uncommon, though

useful, information on each subject heading, such as all the appertaining hierarchically super- and subordinate subject headings. This is in addition to what the conventional alphabetical index provides. This positive feature would certainly have deserved mentioning when the additional lookup step which it requires is criticized.

The purpose and merits of the systematic index, where each subject heading appears embedded in its hierarchical environment together with all its locators, would certainly have deserved mentioning in the review, too, because indexes like these are only very rarely encountered. The gain in index perspicuity is considerable.

The sentence in the review "This dual system of locators is unexplained in the headnote" conceals that the system is, for its experimental character, exhaustively explained in a special chapter. Merely a head note would have been quite inappropriate for this purpose. The reader is safely referred to this explanatory chapter through the head notes of the indexes. For example, the top of p. 222 reads:

#### ACCESS TO THE EXPERIMENTAL INDEXES

Short introduction

See chapter 5.7.2. for complete introduction

The indexes are expressively called "experimental" ones in the book and are intended to stimulate deliberations on the part of the reader.

There are still more essential and useful features of the systematic index in the book, some of which are only rarely encountered in practice. Examples are:

- the consistent use of subheadings;
- the general avoidance of long strings of undifferentiated locators;
- logical (not merely alphabetical) arrangement of the subheadings;
- access to paragraphs (not merely to pages);
- expressive indication of the hierarchical level of each descriptor in the systematic index;
- repetition of the hierarchical structure at the top of each individual page, etc.

At least some of these positive features would have deserved mentioning in the review, in addition to the criticism of "triple" lookup.

#### **4. Contradicting the book author in questions of taste**

Here, the book's "unappetizing" examples, originating from agriculture, plant protection, and pest control, seem to have violated the reviewer's taste and released an attitude of antipathy towards the entire book. But can a book author be expected to choose examples from areas with which he/she is not familiar, and therefore treat them in a dilettantish manner, in order to please the taste of all readers?

#### **5. Criticizing the book author for dealing with a topic which the reviewer is not interested in although the topic is precisely pertinent to the theme of the book**

The reviewer criticizes the book's chapter "Cooperative Information Processing in an Organization" for its comprising microfilming as a factor which is "extraneous to subject analysis." But why should this chapter have a gap through the omission of microfilming documents for archival purposes? It certainly deserves at least mentioning in the description of an in-house information system.

That "the essential concepts do not come through" in this chapter for the reviewer is due to her neglecting them and her concentrating on immaterialities. Essential here is the practice-proven subdivision of the work between the expert on the one hand (for the general concepts according to my definition) and the clerical assistant on the other (for the individual concepts according to my definition). Hence, this chapter constitutes a model example of both subject analysis and practical advice.

#### **6. Criticizing the book author for him not having dealt with a topic, which, however, is not the subject of his book**

It is not the goal of the book to deal with abstracting and indexing in full detail, including book indexing. This would

require several volumes of books. This was neither the intention of the publisher nor the scope of the lectures which the book was intended to reflect. The book's emphasis is on theoretical foundations and on practical advice originating from them. On page 220 there are ample references to appropriate, specialized textbooks.

#### **7. Criticizing lack of citations**

The reproach of lack of citations can always be raised against an author, and this has always been a rewarding field for raising criticism.

The review criticizes that for "Cutter's rule" no formal credit is given to its author, Cutter. Does it really require any reference to Cutter here? In the book, "Cutter's rule" (in paragraph 663) and other quite common concepts such as "search thesaurus" and "citation indexing" are explained. Does it, in addition, really require the citation of sources for them? One could equally criticize the absence of citations for "classification" and "thesaurus."

On the other hand, the reviewer criticizes my repeatedly citing Ranganathan. Why should I not do so when I interpret, recommend, and apply Ranganathan's *analytico-synthetic* approach?

The reviewer also discovers one unintentional duplication of a citation, and including this discovery into the review is given preference to the discussion of the essentials under number 1.

#### **8. Uncritically and distortingly copying criticism of another reviewer**

The reviewer says: "Lancaster (1991, 28) has already shown that the axioms, which Fugmann previously published in journal articles, do not constitute a theory of indexing."

Lancaster's statement was: "Fugmann (1975, 1985) has presented several axioms of 'indexing and information supply' but not all of these are directly related to indexing per se . . ." This is correct, though trivial, because Fugmann's theory (1985) expressly includes information supply (in addition to indexing) to which some of the

axioms logically additionally pertain. Lancaster had only stated that Fugmann's axioms did not exclusively relate to indexing.

Here, Lancaster's statement was resumed by the reviewer and presented in a manner which wrongly implies Lancaster to have denied any theoretical value of Fugmann's approach.

### 9. Hostility

Several sentences in the review, too, reveal the mood of hostility in which Professor Weinberg has written her review. Another example is "Questions seem to have been appended to the chapters to justify calling this a textbook. Most of the questions are interrogative forms of declarative sentences."

Is it not typical of a question that it originates from and can be responded to by a declarative sentence? When I formed the questions I had no justification in mind but merely to deepen what the reader and student had learned. What objections can be raised against a question (criticized by the reviewer) such as "What is the typical feature of polyhierarchies"?

How does the reviewer conclude that I "aspire" to the status of Ranganathan? Does the reviewer (wrongly) assume me to have applied for the Ranganathan Award of FID/Classification Research before I was awarded same in Tokyo in October 1994?

### JUSTIFIED CRITICISM

a. *Survival power*: As far as the concept of survival power is concerned, the criticism of the reviewer stimulated some reconsideration on my part. This term (found in an article by Glynn Harmon [1970]) implies that an information system's death is quite a common phenomenon. The "futility point" of Blair (1991) beyond which the user becomes intolerably overtaxed through the weeding out of irrelevant responses says the same thing. I have watched many information systems die during my forty years of information practice in industry. These systems had to be taken out of service because they no

longer served the purpose for which they had been designed, in particular because of their steadily increasing information loss and information noise.

It is true that those public information systems, for which there is absolutely no alternative, continue to be used, as the reviewer emphasizes, in spite of all their obvious deficiencies and although they are most often used increasingly reluctantly. But in the course of time, their use is more and more restricted to their most recent parts because it becomes increasingly laborious and time-consuming to search their entire files. Under these circumstances it is true that they do not literally die in their entirety, but only an increasing part of them. Only the rest of the most recent parts is kept alive, in spite of its ineffectiveness. But what is kept alive is a continually decreasing part of those systems which lack survival power. In this respect, the term "survival power" in fact would have needed some more explanation in my book.

b. *Misprints*: I am very sorry for the misprints. For cost reasons it is generally impossible to employ lectors for a book of such a small edition in Germany. The misprints are to a large extent due to the extremely high time pressure under which the book had to be put to print. But none of the other reviewers have, so far, laid so much emphasis on this question as this reviewer.

### SUMMARY

Instead of informing the reader, this review conceals the essentials of the book. Thus, the review constitutes misinformation in Diener's sense.

### ACKNOWLEDGEMENT

I appreciate the opportunity to respond in this journal to unjust and one-sided criticism. This opportunity seems to be rather the exception than the rule for the majority of journals. Daniel (1993), among other things, suggests "establishing a right of appeal for authors."

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From Bella Hass Weinberg, Professor, Division of Library and Information Science, St. John's University, Jamaica, New York:

From several informal communications, I am aware that Robert Fugmann's diatribes on my review of his book have been widely circulated to colleagues and editors. Some journals have a policy of not publishing authors' complaints about critical reviews of their books. Given that you have decided to publish Fugmann's letter, I am pleased to be given the opportunity to write a rejoinder.

Rather than rebut Fugmann's lengthy letter point by point, I have chosen to

focus on the rights and responsibilities of reviewers in general. First, I must note that I wrote the review of Fugmann's book for *LRTS* by invitation; I am not a regular reviewer for this journal. *LRTS'* Book Review Editor, Lawrence Auld, sought an authority on indexing to write the review and selected me.

Having accepted the assignment, I felt that my first responsibility was to follow the journal's reviewing guidelines—most importantly, to adhere to the limit on length. I generally write in-depth reviews, ranging in length from five- to ten-thousand words, for the *Journal of the American Society for Information Science (JASIS)*. Had I done the review for *JASIS*, I would have discussed in detail all of the substantive ideas in the book as well as its editorial aspects, with special attention to the index.

I shall let *LRTS* readers draw their own conclusions about an author who enumerates all of the significant ideas in his own book, but even if I agreed with the list, I simply did not have the space to discuss all of these points in *LRTS*.

The second responsibility of reviewers is to their audience. In writing for a given journal, I try to envision the prior knowledge of its readers, and I think about what they would like to know about the work in hand. In evaluating a book on indexing for *LRTS*, I assume that the readers of the review will be catalogers and cataloging educators, and that the key question in their mind will be: Is this book recommended for catalogers who are seeking an introduction to indexing? My considered opinion is that Fugmann's book is not suitable for this audience, only for advanced students of indexing.

Although in his letter Fugmann argues that my review concentrates on "immaterialities," the bulk of his epistle constitutes an attempt to rebut my substantive criticisms of his work, which are mild—for example, I called his major thesis appealing but debatable. Other reviewers—in addition to noting some of the same editorial flaws I did—have stronger objections: Anderson (1994) comments on Fugmann's lack of regard for the end-user and Lancaster (1994) criticizes his lack of

concern for cost-effectiveness in indexing systems. Let me take this opportunity to quote the sentence from Lancaster's book that Fugmann avoided in section eight of his letter: "Most of Fugmann's axioms are really factors affecting the performance of information retrieval systems rather than elements of indexing theory . . ." I did not state in my review that Lancaster said Fugmann's approach had no theoretical value.

I found it amusing that Fugmann closed his letter by citing Richard Diener, who preceded me as a professor of information science at St. John's University. Fugmann alludes cryptically to Diener's definition of misinformation, which the original article states is "the innocent transfer of false information" (pp. 36, 23). I do not believe that this definition applies to my review; I don't think there are many people in the field who consider me ignorant on the subject of indexing.

One more inappropriate citation in Fugmann's letter is to H. D. Daniel's *Guardians of Science*. That book deals exclusively with peer review of manuscripts submitted to journals, which is very different from book reviewing.

I maintain that many of the editorial and structural aspects of his book discussed in my review which Fugmann considers "immaterial" are in fact of major concern to librarians, and to *LRTS* readers in particular: Accuracy of orthography is important in cataloging and essential in reference service. If Fugmann could not afford to hire a proofreader, at least he could have used spell-check!

Readability is also of interest to librarians who, following Ranganathan's law, "Every book his reader," must match the level of a book to a patron's background. Fugmann's list of his book's substantive points illustrates the complexity of the work. In my experience as a professor of indexing, it is necessary to illustrate such concepts through clear, concrete examples. Very few students of library-information science have a chemistry background, and therefore Fugmann's frequent examples from that discipline fail to bring across his points.

I criticized the questions appended to

Fugmann's "textbook" for a similar reason: indexing students must be given concrete, practical exercises, not merely asked to repeat the theoretical points in a book.

Typography is of interest to librarians, who often study the history of books and printing and have an appreciation for good design. Good typography enhances legibility. Physical aspects of a book are relevant as well to librarians, who are concerned with durability, binding, and preservation of library materials. As a voting representative to the National Information Standards Organization, I am aware of numerous standards in this area. Among the many information standards that are violated by Fugmann's book, there is one that I did not have space to mention in the review: the text on the spine is printed in the wrong direction (NISO 1990)!

Reference apparatus—Librarians are most definitely interested in the reference apparatus of a book. Lists of figures are expected to follow tables of contents; indexes are expected to be arranged alphabetically; and any unusual notations in glossaries or indexes should be explained in a headnote. The importance of a consistent interface to electronic information systems is increasingly being recognized, and such consistency is desirable in printed books as well. There is recent research demonstrating that even graduate students in library-information science often do not understand the standard structural features of indexes, nor do they expect to find more than one index sequence in a book (Liddy and Jorgensen 1993).

Quality of indexes is a major concern of librarians, and reviewers of books in our field should devote more attention to this. One authority (Wellisch 1994) notes that he always begins a review of a book on indexing with an examination of its index.

Citations—The adequacy of references is also germane to librarians, who often use citation indexes to trace the impact of ideas. No, it is not necessary to cite a source for the well-established term "classification," but it is necessary to provide a reference to the paper in which the term [search] "hedges" was first pro-

posed. I doubt that Fugmann would like it if other writers on indexing were to use his term "representational predictability" without providing a formal reference to one of his publications.

One of the reasons that Fugmann's book is poorly documented is that he does not seem to have access to a comprehensive library. The first communication I received from him was a request for a reprint of an article of mine that was published in *The Indexer*. Since the request came shortly after the *LRTS* review was published, I wrote Fugmann that I expected the review to come to his attention, and that it was largely a criticism of his publisher. He then requested a reprint since he does not have access to *LRTS*. Anyone who does not read the major journals on indexing and cataloging cannot produce a well-documented book on subject analysis.

As for what Fugmann calls "hostility," I can state that I have never been introduced to him, am not the author of a competing text, and did not approach the book with a negative attitude. (It would clearly be unethical for anyone to review a book by someone toward whom he or she felt animosity.) Perhaps my frequent wincing at the numerous errors, incomprehensible sentences, and barely legible figures in Fugmann's book resulted in a review with a sardonic tone. As an editor, I am intolerant of poor writing and sloppily produced books. Even in reviewing books written by friends, I do not hesitate to point out what I consider to be substantive errors and editorial flaws. Usually I am thanked for these criticisms, and the author refers to the review in preparing a revised edition.

To answer Fugmann's question in section 2(c)—yes, I have published several papers in foreign languages and spent many hours with native speakers of those languages to ensure that the writing was idiomatic and the technical terms correct. I do not understand why Fugmann had to rush to publish his unedited translation. The world could have waited for a carefully prepared edition.

In the journal *Knowledge Organization* I read recently that Fugmann won the

Ranganathan Award, but I certainly did not accuse him of applying for it. The fact that he has won it constitutes the ultimate challenge to his theory that only information systems with quality control survive. Librarians and editors are aware that a paper rejected by one journal will likely be accepted by another; publishers have long known that negative reviews do not materially affect sales; and now we have learned that a poorly edited, badly designed, incompletely documented, and partially indexed book can win an award in the field of librarianship.

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From J. M. Perreault, Professor Emeritus of Bibliography, University of Alabama in Huntsville:

Your article "End-User Understanding of Subdivided Subject Headings" by Lori Franz et al. (38, no. 33, July 1994, pp. 213-26) concerns (without using the established terminology) citation order. The general theoretical background that can make the whole question intelligible is category-analysis as manifested in Ran-

ganathan's work, and sloganized in the formula PMEST. This last, though was seen even by him and his adherents to be over-rigid in its original formation (analogous to the "proposed" order of subdivisions discussed in your article), and was accordingly made more flexible by the introduction of the technique of rounds and levels. My own papers "Citation Order—Presuppositions, Structure, and Function" and "A New Thesaural Search Strategization based on Rounds and Levels" demonstrate: a) that there can be a predictable order among the elements of the categorial analysis; b) that such predictability can be achieved without the rigidity that your article shows leads to misunderstanding; and, c) that techniques more typically associated with classifica-

tory subject-cataloging can also be profitably applied to verbal subject-cataloging ("subject headings").

It should be noted (though the revealing differences between figures 1 and 2 in your article are hardly mentioned in the subsequent discussion) that the main result of the "proposed" (=over-rigid) citation order is that the number of user-interpretations that are correct drops even though the other variables remain almost constant. The proposal should therefore be energetically opposed by all who hope that users (catalogers, reference librarians, our public) can actually be led by subject headings to documents the meanings of which those users can accurately predict from their descriptions in the catalog.

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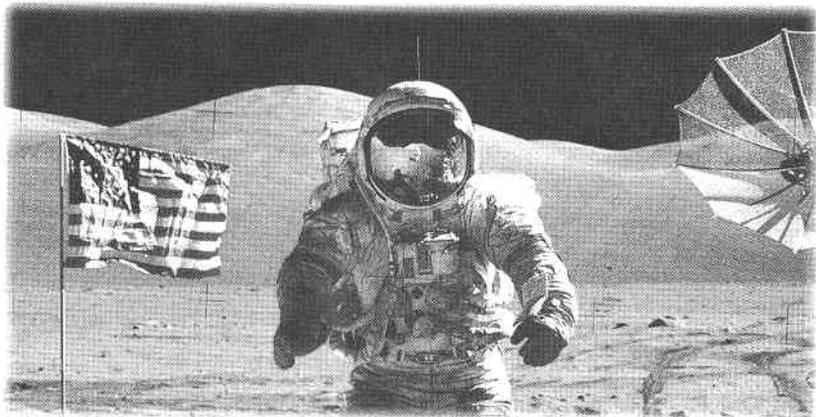
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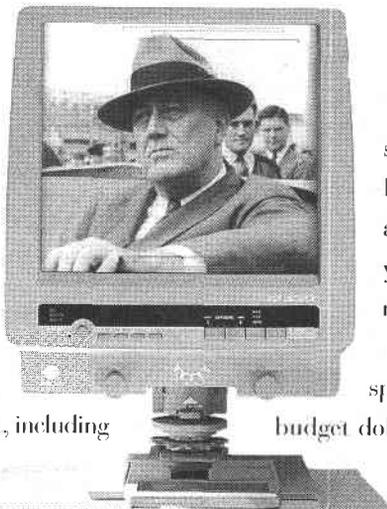


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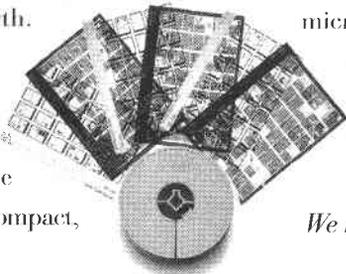
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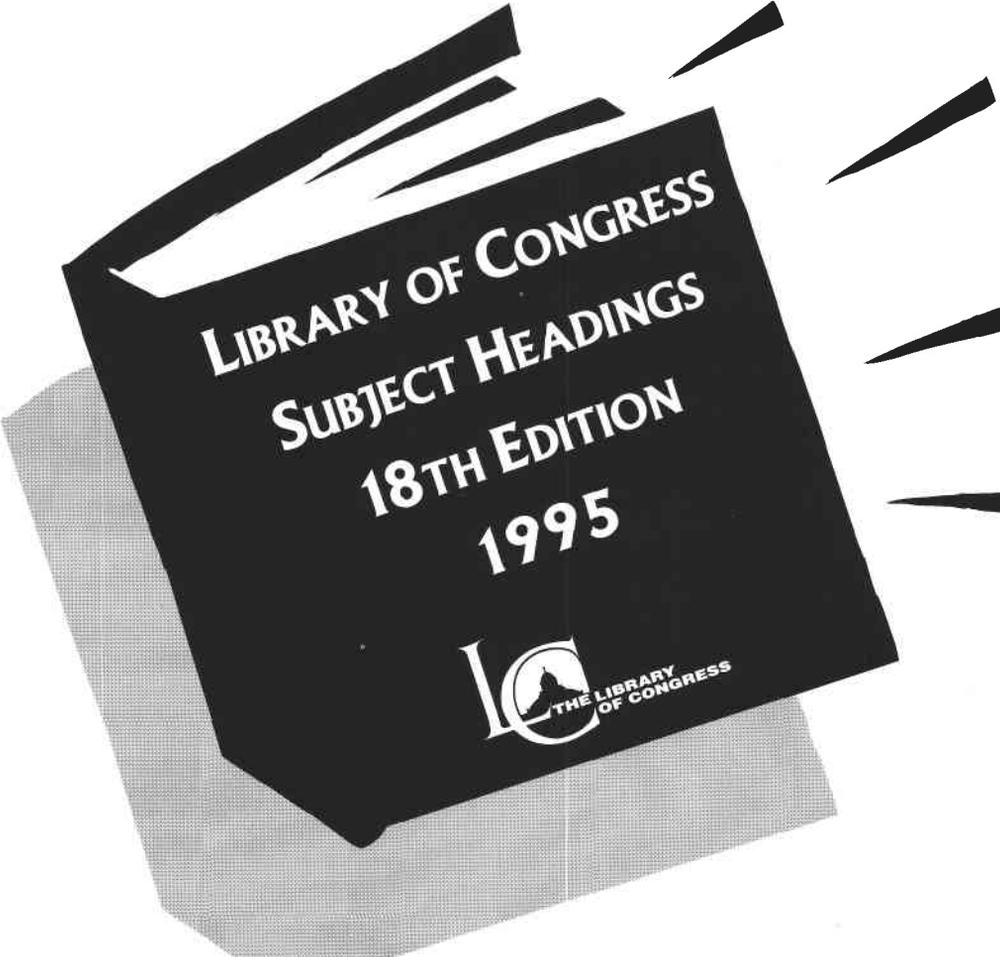
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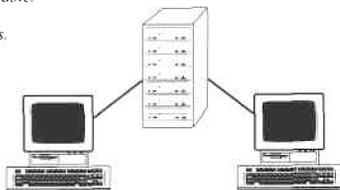
Connect that same tower to your network and the advantages become immeasurable.

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Backed by Todd and supported by your local dealer, the ValueLine series comes complete with Discview software and easy connection Discport hardware for fast installation to your network or PC.

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Simple network connection for multiuser access.

\* Price includes:  
4 drive tower, with  
Discport/Discview  
package

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